IMPROVING ACCESSIBILITY OF SAFE AND CLEAN WATER IN MARORONI WARD IN MERU DISTRICT, ARUSHA

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A DISSERTATION SUBMITTED IN PARTIAL FULFILLMENT FOR THE REQUIREMENTS FOR THE DEGREE OF MASTERS IN COMMUNITY ECONOMIC DEVELOPMENT OF THE OPEN UNIVERSITY OF TANZANIA

2014

CERTIFICATION

This is to certify that I have read this project paper and I'm satisfied that it can be submitted to the Senate of the Open University of Tanzania in partial fulfillment of the requirements for the award of Master's degree in Community Economic Development (M. CED).

……...

Dr. Felician Mutasa

(Supervisor)

……..

Date

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DECLARATION

I, **Neema Sambo**, do hereby declare that this is my own original work and it has not in part or wholly been presented for a degree of Masters in Community Economic Development or any other degree at any University.

…….

Signature

……..

Date

DEDICATION

To my husband, and our dear children Joshua and Amon, who patiently endured my absence while I was busy with the study.

ACKNOWLEDGEMENTS

I would like to acknowledge the support of family, friends, faculty and institutions, who have stood with me in my efforts to complete this stage of my academic journey. I will certainly not be able to name them individually, by doing so would make me vulnerable to the accusation of not being grateful to some. Suffice is to say that I will mention a few institutions and individuals, to represent the multitudes to whom I owe my appreciation.

I would also like to acknowledge the funding support from Word Vision King'ori Area Development Program for their support, time, and finance. I would like to pass my great gratitude and thanks to those individuals, WEO, VEO who helped in identifying community problem through community needs assessment which impacted the initiation of Community Water Project. Also would like to extend my appreciations to Samaria, Majengo, Maroroni, Migandini, Kwaugoro villages and some of the village members for their support. An invaluable gratitude is extended to the Open University Instructors whose inputs during lectures provided the basic foundation for undertaking the project.

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ABSTRACT

The community need assessment was conducted to determine the most pressing stress, challenges and opportunities that prevail at Maroroni ward. It was depicted that inaccessibility of safe and clean water among various communities of Maroroni ward is the major pressing need which require immediate attention. When the problem was analysed using participatory tools such as questionnaires, survey and focus group discussion, it was found that the problem of inaccessibility of water (44.7%) culminate into various social economic constraints which is one of the factors decelerate economic development of some of the communities which reside in Maroroni ward with the most affected group being women and children who are in both primary and secondary school. Through participatory planning facilitated by the CED student, the project initiated in coordinated effort of the target community, NGOs, government officials and the Meru district council which resulted in construction of 5 wells in the three villages, whereby 2 at Vareska, 2 at Majengo and one at Migandini were accomplished. Nevertheless, community awareness on the use of clean and safe water has been conducted through seminar training. It is expected that this project will result into improved livelihood of Maroroni ward through reduction of diseases which were considered to emanate from poor sanitation and ample time to engage in other income generation. From this coordinated effort of various stakeholders who participated in this project, it is suffice to say that when developing countries like Tanzania who always face budget constraints, if little fund is set aside for certain development project; communities and other development agencies like NGOs can be involved to supplement the little budget set to accomplish those projects to improve the livelihoods of their communities.

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ABBREVIATION

CBO	Community Based Organization
CDO	Community Development Officer
CAN	Community Need Assessment
CED	Community Economic Development
FAO	Food Association Organization
NGO	Non Government Organization
OVCS	Orphans and Vulnerable Children
PEDP	Primary Education Development Programs
SEDP	Secondary Education Development Program
HBS	Harrad Business School
ILO	International Lab our Organization
SPSS	Statistical Package for Social Science
SWO	Social Welfare Officer
UNCSD	United Nations conference of Sustainable Development
UNESCO	United Nations Educational Scientific Approach
UNIFPA	United Nations Fund for Population Activities
UNICEF	United Nations children's fund
URT	United Republic of Tanzania
VEO	Village Executive Officer
WADC	Ward Development Committee
WEO	Ward Executive Officer
WHO	World Health Organization
NBS	Nation Building Specification

DRA	Developmental Reading Assessment
LFA	Logical Framework Approach

CHAPTER ONE

1.0 COMMUNITY NEEDS ASSESSMENT

1.1 Background Information

The community need assessment was conducted in six villages of Maroroni ward which includes Kwa Ugoro, Migandini, Maroroni, Valeska, Majengo and Samaria in Maroroni ward at Meru district in Arusha region. The purpose of the survey was to carry out the situation analysis of the community in terms of problems, challenges and various opportunities within the Maroroni ward. From the community need assessment, it was depicted that inaccessibility of water is one of the main obstacles that culminate into poor livelihood of some community members. It also focused on providing the possible solutions that will assist in eliminating the underlying problem within Maroroni communities. It was imperative to find solution to this problem as it was claimed to results in a chronology of problems such as eruption of enteric diseases to some of the communities and poor performance of pupils.

The community need assessment provide the fact that, the availability of reliable source of clean water will impact the whole society in term of reducing erupted enteric diseases. Also it will reduce the truancy among the primary and secondary school students who spend a lot of time in fetching water for their families. Significantly, the women who are the most affected with this problem, will not spend much time walking far to fetch water instead will use that time in other activities such as agriculture which will result in improved livelihood. In involving the local people in prioritizing their needs, the community of Maroroni decided to undertake the project by digging wells to make sure the whole society of Maroroni which has

been suffering for a long time with the problem of inadequate water supply, acquire reliable source of clean water as their daily basic need.

This project involved six villages of Maroroni ward namely; Kwa Ugoro, Migandini, Valeska, Maroroni, Majengo and Samaria. It is expected that, the impact of the project will affect the whole society of Maroroni. Consequently, this study offers an approaching of what has been accomplished and in the whole period of implementation of this project.

1.2 Community Profile

1.2.1 Geographical Location

Meru district Council originated from the former Arumeru District Council and it was established on 1st July 2007 as the District council with the full mandate. It lies on the slopes of Mount Meru which is the second highest Mountain in Tanzania after Kilimanjaro that rises up to 14,000Ft/4516M above the sea level. The council lies between latitude 3’ 00o – 3’ 40o and longitude 36’ – 55o in the Eastern south of equator (Meru district profile, 2010).

The district has bimodal type of rainfall i.e short rains (Vuli) which fall on the November to January and long rains (Masika) which rains between March to June. This makes the district to have two agricultural seasons that receives the annual rainfall ranging between 500 MM – 1200 MM and it also experience the average temperatures of about 25 oC (January – February) and 22 oC (June – August). The district has 11 perennial rivers and 143 springs, some of which makes the bases for irrigation, domestic and livestock use (Ibid). The district comprise of 3 divisions, 17

ward, 71 villages and 281 sub-villages as shown in Table 1.1

Table 1.1: Administrative Division

Division	Ward	Village	Su – village
Poli	8	29	100
King'ori	5	28	114
Mbuguni	4	17	67
Total	17	74	281

Source: Meru district council profile (2010)

1.2.1.1 Agro-Ecological Zones

The district is divided into three agro-ecological zones/ belt namely highland zone/upper belt, middle zone/belt and lower zone/belt.

1.2.1.2 Highland/Upper Belt

This is the Mountainous area which lies between 144M and 180M above the Sea level and it has an average rainfall of about 100MM per year. The economic activities are agriculture based on coffee, pyrethrum, banana trees and round potatoes (Ibid).

1.2.1.3 Middle Zone/Belt

The belt rises between 1000M and 1350M above the Sea level receiving the annual rainfall of 500MM. The major economic activities are Livestock keeping and Agriculture. The crops grown in this belt are coffee, banana, maize, beans, wheat, rice, fruits and horticulture crops (Ibid)

1.2.1.4 Lower Zone/Belt

The belt rises between 800M above the Sea level and receiving an average annual rainfall of about 300MM. Agriculture is the most important activity whereby rice, maize, beans, fruits and horticulture crops are produced (Ibid).

1.2.1.5 Population

The population growth is estimated to be 271,906, out of which 135,632(49.8%) are men and 136,274 are (50.1%) are women. The estimated growth rate according to population and housing census (2002) was 3.1% and with an average household size members of 5 per household (Ibid). The Education Development Program (SEDP and PEDP) is another fundamental strategy to improve the accessibility of education services especially in rural areas. It brings opportunity in increasing enrolment to rural children in primary schools and proceeds with further education at secondary level. Table 1.9 and 1.10 present the enrolment of primary and secondary in Maroroni ward.

The data above shows that before the implementation of this program, the awareness of community to send their children to school was very low. Also it shows that, young girls were more affected compare to the boys. The data shows that in 2010 the situation was very good whereby 50.9% of boys and 49.1% of girls were enrolled in that year to compare with previous years whereby the situation was not good.

The data from table1.2 indicate that, the increase number of students who complete and join secondary education start to increase after the implementation of primary and secondary education program (PEDP and SEDP). The successful of those

program is seen from 2012 whereby 177 of 362 (48.9%) of total candidates who complete standard seven in that year passed their examination. In 2013 the situation was very good whereby, the total number of candidates who sat for examination were 399 and out of that number 216 (54.1) candidates passed their examination, which is above the half of the total candidates sate for examination for that year.

Table 1.2: The Enrolment of Primary School at Maroroni Ward

Year	Number of Enrolment		Total	Percentage (%)		Total Percentage (%)
	Boys	Girls		Boys	Girls	
2004	130	115	245	53.10%	46.90%	7.1
2005	149	122	271	55%	45%	7.9
2006	154	129	283	54.4	45.60%	8.2
2007	158	119	277	57%	43%	8
2008	137	117	254	53.90%	42.10%	7.4
2009	165	147	312	52.90%	47.10%	9
2010	178	159	337	52.80%	47.20%	9.8
2011	198	174	372	53.20%	46.80%	10.8
2012	208	196	404	51.5	48.50%	11.7
2013	219	211	430	50.90%	49.10%	12.5
Total	1839	1617	3452	53.30%	46.70%	100.1

Source: Arumeru District Profile 2013

In order to make sure there is financial ability for the community to implement its development, the government passed the Constituency Catalyst Fund in 2009

whereby in each year the government provides funds to support the efforts of the people in bringing their development. This fund is chaired by the member of parliament of a particular constituency with other local leaders.

1.2 Community Needs Assessment

The Community needs assessment was undertaken to gather information within the community that will guide project formulation and key aspects that would be utilized at some stages in the project cycle. The seeking of information involved application of various participatory research methods and tools in relation to intended objectives. Therefore, the community need assessment at Maroroni ward were mainly focused in achieving the main objectives of this study; it was designed to take a closer look at various stress facing the target population and the opportunities that can be utilized by the community to solve their impending problems and challenges.

1.2.1 Research Objectives

The community needs assessment aimed at fulfilling the following objectives:

i. To determine the most impending community stress within the Maroroni ward.
ii. To identify the extent of the most pressing problem at Maroroni ward?
iii. To identify constraints and opportunities that prevails at Maroroni ward.
iv. To absorb the community and other stakeholders in addressing the most pressing problem at Maroroni ward.

1.2.2 Research Questions

The key questions posed during community need assessment were basically planned

to address the specific objectives and this includes;

i. What is the most impending community stress within the Maroroni ward?
ii. To what extent does the most impending problem affect the people of Maroroni ward?
iii. What are the constraints and opportunities that prevail at Maroroni ward?
iv. What are the best strategies that can be applied by community members and stakeholders to overcome the most pressing problem at Maroroni ward?

1.2.3 Research Methodology

This section presents the research design and sampling techniques which were applied in the community need assessment. It also includes the data collection methods and provide the description to which the collected data were analyzed as well as presenting the findings of the Community Need Assessment.

1.2.3.1 Research Design

The study was design with the aim of determining the most pressing problem and need among the rural community particularly in Maroroni ward. Under this type of community assessment, explanatory or descriptive research design was applied. The research design preferred was intended to avoid frequent errors that could be obtained through observation, generalization, reasoning and re-evaluating. Overgeneralization of issues was also avoided by not concluding without wide-ranging analysis. Likewise jumping into conclusion without enough verification which is called reasoning error was also avoided. Flexibility was used to change previous conclusion in light of new discovery, therefore avoiding re-evaluating of

errors.

1.2.3.2 Sampling Techniques

The study employed non- probability sampling to get the sample size of respondents. The sample size was randomly depending on the category of respondents in which the study was conducted. Five villages were purposively selected to be involved in the study. A total of 159 respondents were given with questionnaire from five villages namely, Kikatiti, Samaria, Kwa Ugoro, Maroroni and Majengo (150 respondents, 5 VEO, 1 WEO, 1 Social welfare Officer and 2 Community Development Officers). The Table 1 below presents the total number of respondents.

Table 1.3: Distribution of Respondents of the Study

NO.	CATEGORY	SEX		TOTAL
		M	F	
1	Local people (Citizens)	54	96	150
2	VEO	5	0	5
3	WEO	1	0	1
4	CDO	0	2	2
5	SWO	0	1	1
TOTAL		106	53	159

Source: Research 2014

1.2.3.3 Data Collection

Different data collection techniques were adopted which includes questionnaire, field study, and survey and focus group discussions.

1.2.3.3.1 Questionnaire

Closed ended questionnaires were distributed to 159 respondents which were written

in Swahili language with a very simplified terminology and language as this was very essential to allow the respondents to understand and be able to respond easily.

1.2.3.3.2 Field Study

During community needs assessment, the preliminary planning was made to decide the scope and objectives of the study and timeframe required. The scouting expedition then followed which involved several trips to the field of the study.

1.2.3.3.3 Survey Method

During the study, 5 villages were visited by the researcher where on site interview was conducted along with personal observation in order to check the validity and reliability of the collected information. This was utilized to collect reliable and dependable information from the respondents including the community members and the local leaders. A total of fifteen respondents, five from each selected village were interviewed between the mid-December 2013 and the mid-March 2014. The respondents were taken in confidence to get the free flow of their ideas, attitudes and all are relevant information in respect to objectives under study.

1.2.3.3.4 Focus Group Discussion

Discussions and consultations were made with the Village Executive Officers, Wards executive Officer, Community Development Officer and Social welfare Officer.

1.2.3.4 Data Analysis Methods

The data collected using questionnaire were analysed using Statistical Package for

Social Science (SPSS) whereby descriptive analysis was done by using frequency and cross-tabulation. Results were presented in graphs, tables and charts.

1.3 Findings and Discussion

1.3.1 Respondents Status

The number of respondents who participated during the community need assessment at five villages of Maroroni ward was 150. Out of that number 50.0% were aged between 30 to 39 years; while 30.0% o they were ranging between 40 to 49 and 20% were age between 50 to59 years. The age of respondents is shown in Table 1.4

Table 1.4: Age of Respondents

Age		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	30-39	75	50.0	50.0	50.0
	40-49	45	30.0	30.0	80.0
	50-59	30	20.0	20.0	100.0
	Total	150	100.0	100.0	

Source: Research Finding 2014

In terms of sex, 96 were females which are equivalent to 64% while males were 36% of the total respondents. Table 1.5 represents the gender of respondents. Similarly, the study find that, the 66% which is equal to 99 respondents they have their own family while only 51 (34%) respondents were living as single parent. This finding is presented in table 1.6.

Table 1.5: Respondents According to their Sex

Sex		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	54	36.0	36.0	36.0
	Female	96	64.0	64.0	100.0
	Total	150	100.0	100.0	

Source: Research finding 2014

Table 1.6: Respondents Family Status

Family Status		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Living with family	99	66.0	66.0	66.0
	Living in single parent	51	34.0	34.0	100.0
	Total	150	100.0	100.0	

Source: Research finding 2014

1.3.2 The Maroroni Community

1.3.2.1 The Participation of Citizen Social Welfare

The finding from this study indicates that the direct participation in prioritizing for their social wellbeing is challengeable in most rural areas. The participation was done partially at the final stage of implementation. According to this study, the 95% of respondents from Maroroni proved this argument. One of the respondents had to say that:

> *"Hakuna cha kushirikishwa; Mwenyekiti atakaa na kamati yake na kujifungia ofisini na wakitoka huko tunachoambiwa ni kuchangia may be*

20,000 kwa ajili ya shule. Usipotoa wanakuja na Kuchukua mbuzi au godoro na kuondoka".

(There is no participation, it is just the chairperson and his committee members sat at the office and make decision we will contribute 20,000 for school construction for instance and if you fail to pay, they collect your material such as goat, mattress and leave).

This argument was strongly supported by many respondent of this study. They provide that the process of prioritizing and make decision for the matters concern their development is not their role but is the role of the leaders. Also they provided that the meeting conducted was just to inform them that they suppose to contribute some amount for the village or ward development. Mr. Elisante Pallangyo, one of the respondents of this study from Migandini village argued that:

"Ukisikia tu mkutano umeitwa, ujue kuna pesa za kutoa. Hamuwezi kuitwa kwenye mkutano na mkaambiwa mtoe maoni yenu ili tuweze kuleta maendeleo hapa kijijini"

(When you hear there is a meeting, it means there is some money you suppose to contribute. It's never happened to go and provides some views or idea for the development of our village).

Similarly, the study show that only 5% of respondents of this study they agreed that there is wide room for the participation of citizens in prioritizing and decision making for the matters affects directly their life and the development of the whole

ward. The finding of this is shown in figure 1.1

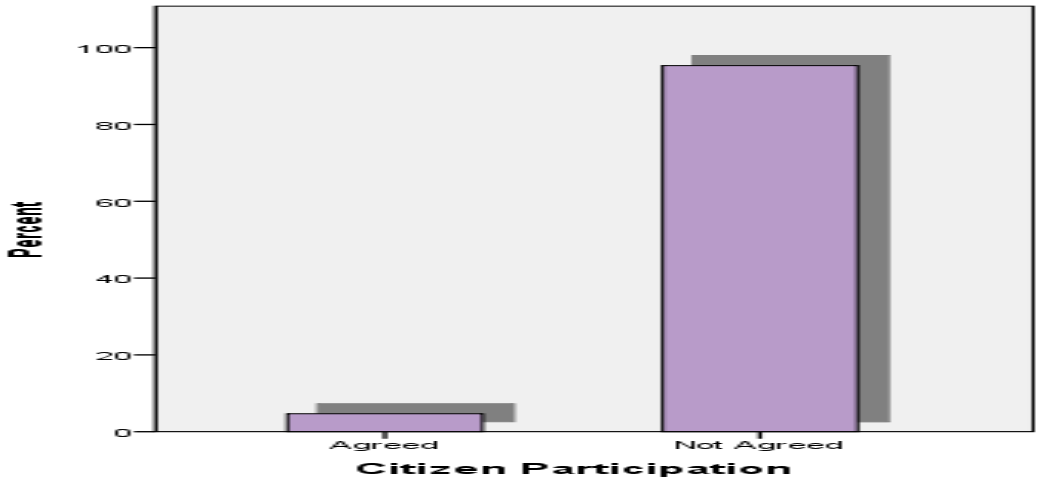

Figure 1.1: Participation of Rural Citizens in Prioritizing and Decision Making

Source: Research finding 2014

1.3.2.2 Environment Conservation

According to the survey of this study, the Maroroni ward faces a big challenge in protecting its environment. This is due to the fact that, people depends on selling charcoal as another important source for their income generation. Out of 150 respondents who were interviewed, 39 of respondents which is equally to 26% of the total respondents said they used charcoal business as the one of their income generating source. Significantly, most of the people of Maroroni practice agriculture and livestock keeping. Over 90% of Maroroni ward either practice agriculture or keeping livestock or both. They use the local methods which contribute in environmental degradation within their areas. Also the water sources are not well protected and this cause unsafe and unclean water. The presentation of this finding is shown as follows:

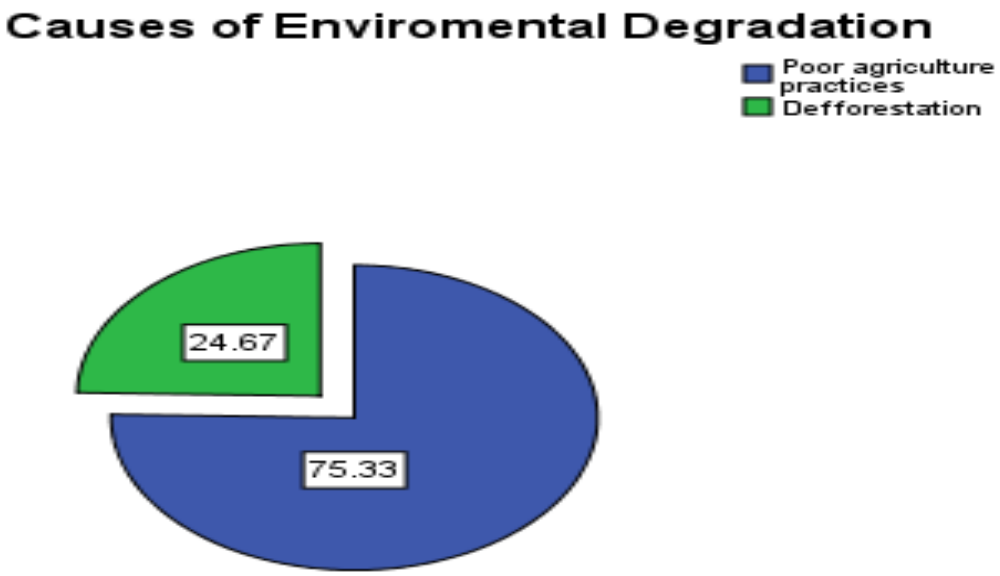

Figure 1.2: Relationship between Environment Degradation and Income Generating Activities

Source: Research finding 2014

The finding above indicates that, the contribution of poor agriculture practices in environmental degradation is bigger than deforestation. It shows that it contributed for 75.33% while deforestation contributed for 24.67%.

1.3.3 Social Need Assessment

The finding of the assessment made at Maroroni ward show that the biggest problem of availability of social service is safe and clean water followed by health services and education. Other services mention was infrastructure and electricity. The result presented in table 1.7

Table 1.7: Most Pressing Problem at Maroroni Ward

Lack of Social Services		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Safe and Clean water	67	44.7	44.7	44.7
	Health	36	24.0	24.0	68.7
	Infrastructure	22	14.7	14.7	83.3
	Electricity	14	9.3	9.3	92.7
	School	11	7.3	7.3	100.0
	Total	150	100.0	100.0	

Source: Research funding 2014

Table 1.8 states that, inaccessibility of safe and clean water is a major problem in Maroroni community followed by health services, infrastructure, electricity and education. The data shows that 44.7% of the respondents indicated that lack of water services is the biggest problem. The health service takes 24% of the respondents who mentioned the health services as a major problem at Maroroni.

However, the government implies different measures and strategies to improve the social well being of rural people in Tanzania. For instance in 2006 the government adopted the Water Policy which its main objective is to improve the accessibility of safe and clean water in both rural and urban areas (URT, 2006). This has not been the case in most of the rural areas. Similarly, in 2009 the government passed the Water and Sanitation Act in 2009 which provide the rural community to formulate their own organization which will be responsible for providing water services and

maintenance (URT, 2009). Despite of that, it leads the people to walk far distance to fetch water for their daily uses. The implementation of the policy and law does not reach many people. One of the question pose to the respondents was concern to know if they understand this policy and law and the answer is shown in table 1.8.

Table 1.8: Understanding of Maroroni's People concern Water Policy

Understanding of Water Policy		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	YES	3	2.0	2.0	2.0
	NO	147	98.0	98.0	100.0
	Total	150	100.0	100.0	

Source: Research finding 2014

The finding of the study (Table 1.8) shows that 98% of the Maroroni communities do not understand the national water policy. The study shows that its only 3 people equivalent to 2.0% understanding the national water policy. This may be one of the factor which leads to difficult in the implementation of this policy. Similarly, the finding shows that, inadequate water supply leads to most of people to walk very far for fetching water. It is possible to find people from one village walking to another village in searching for water. This also affects their time as they consume a lot of time in fetching water rather than engaging in other economic activities. Table 1.9 shows the distance people walk in fetching of water.

The study shows that the problem of inaccessibility of safe and clean water is very huge. Most of the people in the community of Maroroni need to walk a relative long

distance to fetch water. The findings show that 77.3% of people walk between 7200-8000 meters (7.2-8 kilometer) looking water. Also, for those who at least find water near their settlement need to walk between 100-800 meters (0.1 kilometer – 0.8 kilometer).

Table 1.9: Walking Distance for Searching Water

Walking Distance (Meter)		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	100-800	5	3.3	3.3	3.3
	900-1700	6	4.0	4.0	7.3
	2700-3400	5	3.3	3.3	10.7
	3500-4300	4	2.7	2.7	13.3
	4400-5300	3	2.0	2.0	15.3
	5400-6200	6	4.0	4.0	19.3
	6300-7100	5	3.3	3.3	22.7
	7200-8000	116	77.3	77.3	100.0
	Total	150	100.0	100.0	

Source: Research finding 2014

The survey assessment found that, unavailability of water services in Maroroni ward is affecting the attendance of student/pupils in schools. They spend a lot of time in helping their parents in fetching water even in schooldays and this may be one of the reasons for truancy in school. The 43.3% of the respondents agreed that they spend a lot of time in fetching water even in school days. Table 1.10 indicates reasons which cause the truancy in primary school at Maroroni ward. Apart from that, the survey shows that, the contribution of other factors like sickness contributed 20% and lack

of basic needs contributed for 36.7%.

Table 1.10: Reasons for Truancy in Primary Schools

Reason for Truancy		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Sick	30	20.0	20.0	20.0
	Helping parents to fetch water	65	43.3	43.3	63.3
	Lack of basic needs	55	36.7	36.7	100.0
	Total	150	100.0	100.0	

Source: Research finding 2014

1.3.4 The Accessibility of Water

The aim of this study was to assess the most pressing need among the people of Maroroni ward. The study found that, a good percentage of people (44.7%, Table 8) indicated water inaccessibility is the most pressing need. This is revealed by analysis of the problem by the question which poised on the problem in particular at which majority of the people (89.3%) strongly agreed that inaccessibility of safe and clean water is a huge problem at Maroroni ward. This is contrary to 9.3% who partially agreed and only 1.3% did not totally agree. The finding is shown in Figure 1.3

The study also tried to explore whether inaccessibility of safe and clean water is related to other effects to the community at large. The finding show that 88.0% agreed with that while only 8.7% disagreed and 3.3% they said they don't know. The finding of that is presented in Figure 1.4.

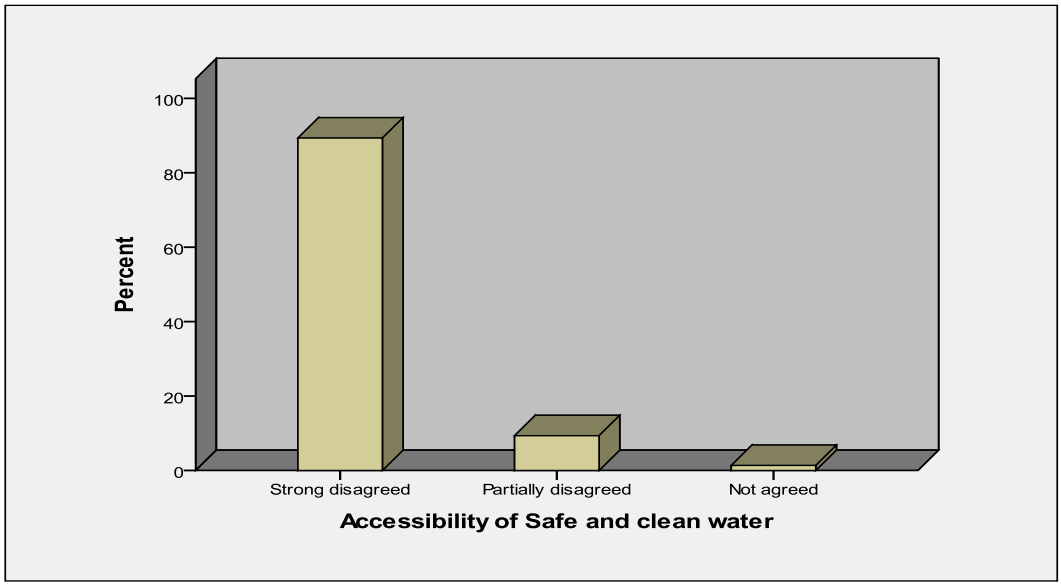

Figure 1.3: People's views on Accessibility of Safe and Clean Water as a Major Problem at Maroroni Ward:

Source: Research finding 2014

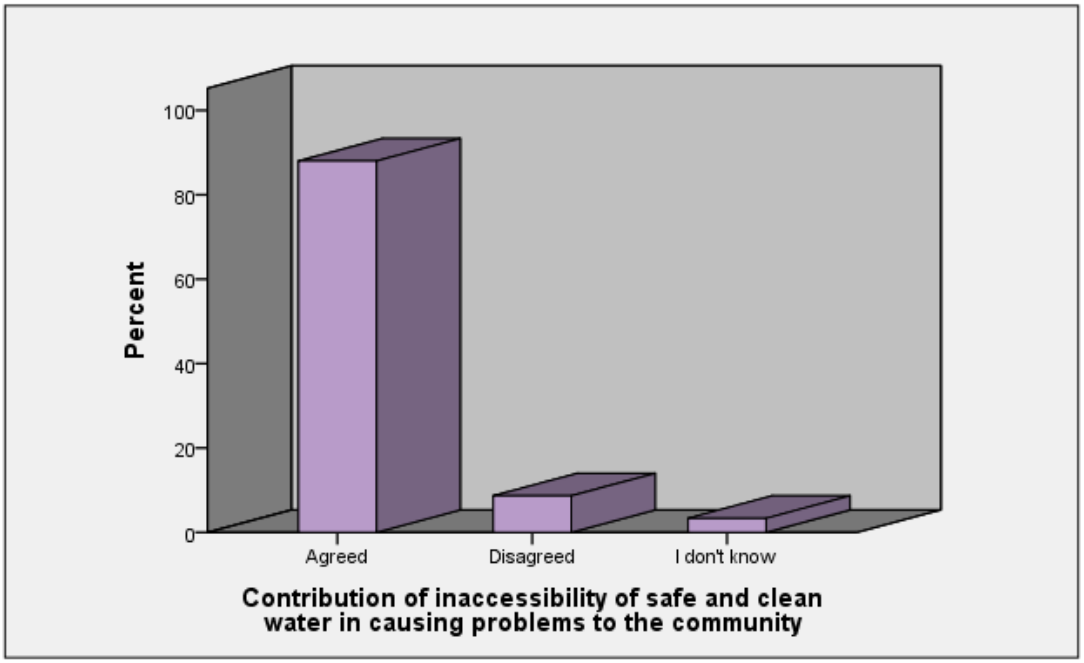

Figure 1.4: Contribution of Inaccessibility of Reliable source of Clean Water at Maroroni Ward

Source: Research Finding 2014

This makes an interest to the next question which posed for those who agree in previous question with the aim to know how this problem associated with other problem within their community. One of the areas which associated with this problem is education sector. It leads the truancy in both primary and secondary schools. This is due to the fact that, they need to spend a lot of time in helping their parents in fetching water from neighboring village. Out of 150 respondents of this question, 32 respondents which is equally to 21.3% they provided that.

Another aspect which is affected is agriculture sector. It lead to take a lot of time for searching water while that time they can use for cultivation if the water is accessible within the area nearby. One of the respondents provides that:

> *"Wakati mwingine inabidi uondoke asubuhi na mapema uende ukatafute maji. Unaondoka asubuhi na unarudi saa 10 au saa 12 jioni. Umepoteza muda wote huo kwenye kutafuta maji. Hapo niambie huo muda Kama unaweza kuingia shambani kwa sababu sisi tunategemea kilimo ungeingiza faida kiasi gani? Lakini maji yangekuwa yanapatikana hapa karibu, tusingeenda mbali na huo muda tungeutumia vizuri shambani".*
>
> *(Sometime you need to wake early in the morning to fetch water. You go from early in the morning and you come back when it is 4 or 6 pm. You had lost a lot of time for just fetching water. Can you tell me if that time you can use in farm, how much profit could you produce? But if we can get water nearby, there is no need for us to go very far and that time we can use perfectly in the farm.)*

The finding of the study provides that 47.3% of the respondents they provides that the problem of inaccessibility of safe and clean water affect their agricultural activities. The 24.7% respondents mention health problem in Maroroni is associated with the problem of inaccessibility of safe and clean water. They provide that, most of the people suffer from diarrhea because they use unsafe water and 6.7% respondent mentioned that they fail to participate fully in the village meetings. This is due to the fact that during the time for meeting, they spend the same time for searching water. This affects them because they failed to access their basic rights and in contributing their views for their community development. Figure 1.5 provides the contribution of inaccessibility of water on effects to other social economic activities.

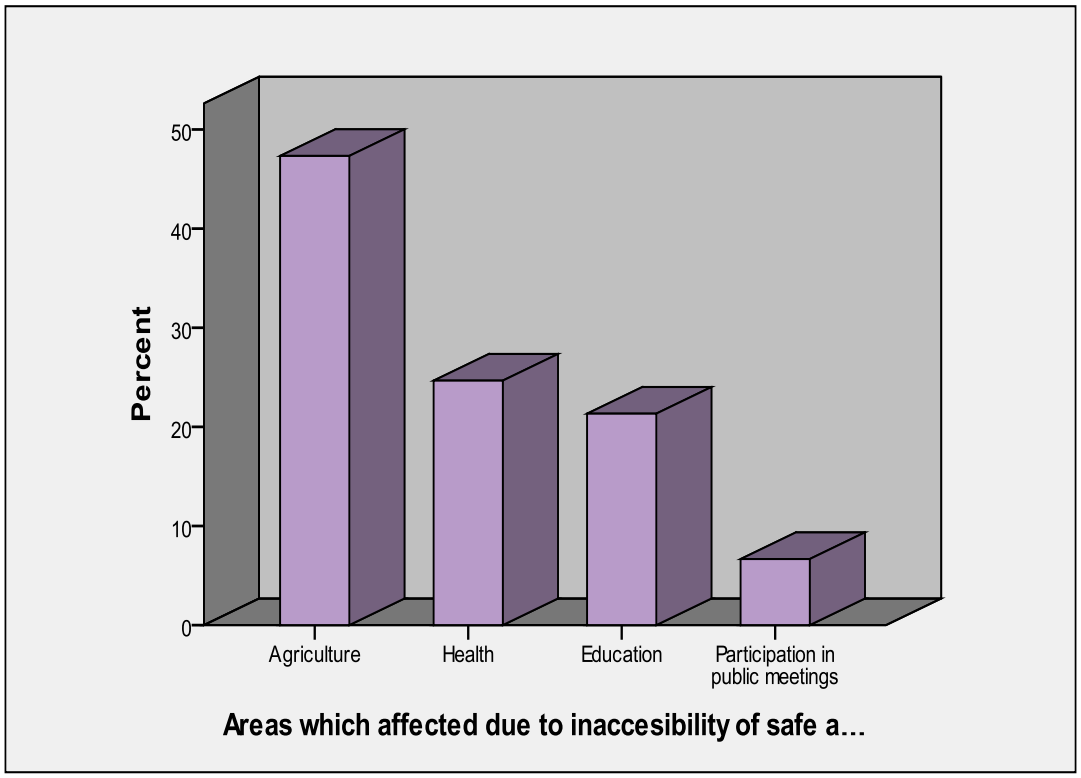

Figure 1.5: The Impact of Inaccessibility of Safe and Clean Water to Other Social-Economic Activities at Maroroni Ward

Source: Research finding 2014

1.4 Community Need Prioritization

The focus group discussion meeting was used as a means for achieving needs prioritization whereby some members in the community were selected to form WADC (Ward Development Committee), whereby the researcher presented the findings of the community needs assessment; among other issues, the problem of inaccessibility of safe and clean water was taken into consideration. The issue concern the problem was well articulated and the participants suggested that there is a need for both internal and external efforts to solve the problem. The main areas of assistant needed including dam construction, water pipes and technical advisers. They agreed that the community will provide physical efforts needed for the implementation of the project.

The pair wise ranking method was applied to rank the priority problems identified from the community, economic, health, and environmental assessments to get the community priority problem which ranked higher compared to the other problem identified as a critical problem which needs solutions.

1.4.1 Community Prioritization

Table 1.11: Community Prioritization

Problem					Scores
Water	Water	Water	Water	Water	4
OVC	X	OVC	OVC	OVC	3
Diseases	X	Diseases	Diseases	X	1
Lack of capital	X	X	X	Lack of capital	1

Source: Research finding 2014

1.5 Conclusion

The involvement of community at large in this need assessment which was conducted at Maroroni ward, provides awareness and make the community be the part of ownership of this project. This is due to the fact that they were involved in formulating this project from the beginning. Also provide an opportunity for researcher to share knowledge with the local people of Maroroni ward. For instance, it provides a picture on how the local citizen they can provide views which can foster their development.

Significantly, it provides the policy makers, agencies and other stakeholders of development. Inaccessibility of clean and safe water is among the major problem facing rural people, therefore, if it can be given high prioritization it may help many people and prevent eruption of diseases and make people put much emphasis in other economic activities. Currently, there is little effort to resolve this problem as a result; people spend a lot of time in searching water and some parents use their children for fetching water instead of going to school. Even those children who go to school do not get enough time for resting after school because they suppose to go very far fetching water after their class sessions.

CHAPTER TWO

2.0 PROBLEM IDENTIFICATION

2.1 Background to Research Problem

Tanzania is among the developing country whereby majority of her people (it is estimated 75%) live in rural areas (World Bank, 2013). This indicate that, the allocation of resources, improvement of social services provided and any policy and national strategies should be focusing and much emphasized in rural areas. On other hand, the involvement of people participating in planning from the root stage for their development is very important to the planners and government leaders. The community need assessment conducted in this study observed that, the participation of communities in the project which directly affected them is very minimal in all stages of planning. This leads to many people in rural areas depending on government decision only and reduce the capacity of people to question their leaders. Also the decrease of communities participating in local meeting is the result of this situation.

From the community need assessment, inaccessibility of safe and clean water in rural areas was found to be a very crucial area which needs special attention. Accessibility of water will help to save time spent by people in searching water rather than using that time in economic activities. Also it will reduce the truancy in some extent to the children of primary and secondary schools. Not only that, but also the diseases like diarrhea will be resolved in many households.

2.2 Problem Statement

Water is the heart of many livelihoods activities and is an important source of food

and income (FAO, 2004). Although there are different initiatives taken both at national and international to make sure many communities access safe and clean water, the problem of inadequate water supply is still alarming in rural areas. Internationally, the World Health Organization (WHO) came up with a water program in 2000 with the main goal to make sure over 80% of rural citizens over the world, access safe and clean water in order to prevent some diseases which are sequel of inaccessibility of water services (WHO, 2002).

In Tanzania, despite significant investment in the Water Supply services since the early 1970s, water supply coverage is not satisfactory (www.projectumoja.com, 2012). The 1991 National Water Policy set a goal of providing clean and safe water to the population within 400 meters from their households by the year 2002. Today only about 65% of the rural population has access to reliable water supply services (UNESCO, 2013). Due to poor operational and maintenance arrangements, over 30% of the rural water schemes are not functioning properly (Ibid). In order to achieve that, in 2009 enact the Water and Sanitation Act which was enacted by the parliament of Tanzania and it give power for the community to formulate their own organization which will be responsible for construction of water infrastructure and management of water issues.

Despite of that, those organizations are not formulated because most of rural areas do not know such act even by most leaders at the district level. Such laws and policy remain at the national level and even during its formulation; the local people are not involved. Also the allocation of financial resources allocated in this sector do not relate to this problem. Nevertheless, most of rural project leaving in donors' hands,

implementation depend on the time donors decide to release such fund for implementation process. Lack of dams' construction especially at the rural areas is another big problem in eliminating this problem. The few of them which exist and found only in urban areas are not able to reach the needs of those services.

The finding from Maroroni ward show that, there is no any single project initiated at this area although the problem is highly compelling and it has been affecting many people for the period of about 30 years (Personal Communication, 2014). Also the people of Maroroni showed their willingness to solve the problem which has been escalating for many years, but they lack supports from the government. Therefore, it was the purpose of this survey to identify the problem through participatory approach and absorb the community to solve the problem through their own resources in terms of man power and funds from some little external assistance from other stakeholders such as the local government, NGOs and CBOs.

2.3 Project Description

The main objective of this project is to enhance the accessibility of safe and clean water at Maroroni ward by year 2014.

2.3.1 Target Community

The project is intended to facilitate people of Maroroni community to access water through capacity building in terms of resource mobilization and support of the communities to undertake their own initiatives. The identified needs were addressed by using the available resources and opportunities. Therefore, total population of 14,103 people of which 7,021 are men and 7,081 are women (Tanzania National

Census, 2012) has to benefit from this project. These include villages within the ward such as Maroroni, Valeska, Samaria, Majengo, Migandini and Kwa Ugoro. Therefore, it is the expectation of this project that, the women will get ample time and engage in other income generating activities. This will help improve their livelihood and contribute to achievement of Mkukuta and Tanzania vision 2025. In order to reach a desired condition, the owner of the project highly participated in order to make sure that the objectives were attained. Their involvement was during mobilisation and sensitization campaigns on water projects. By initiating various Government and Non- government workers working within the ward, Meru District Council, Community based Organisations, local leaders and religious leaders.

2.3.2 Stakeholders

For effective and efficiency implementation of the project, various major players, groups and institutions considered to have a stake in this project were identified. The roles, concerns and expectations of these players, individuals, groups and institutions are described as stipulated below. Similarly, the assumptions of each stakeholder and determination of the relative priority and importance in meeting these interests have been explained.

The stakeholders in this project were the local people from Maroroni ward who were involved from the planning and implementation of the project, they were responsible for actual implementation of the project. They were the main beneficiaries and ones who own the project. The community people who were mainly involved in this project were men and women residing at Vareska, Majengo and Migandini villages where implantation of the project was done. Through their local leaders members of

these villages were mobilized to contribute to the success of the project in terms of man-power, money contributions and time. This was made possible as a result of unity and desire to solve their problem after the awareness to do so was informed to them by the CED student.

The other stakeholders are local government officials, Meru council, NGOs and other agencies which were interested with this project. The local government officials namely WEO and VEO through coordinated effort of the CED student were also responsible in mobilizing the local people to contribute both physically or financially in implementation of this project. The Meru council through her budget which was set aside in financial year 2013/2014 provided support in technical issues and experts who made survey to identify potential areas for accessing water when drilled (feasibility study) and estimate of the cost for implementing the project. The council also provided some of the finance needed for accomplishing the planned work and paid for her personnel perdiems. Similarly, World Vision Tanzania through Ki-kulunge NGOs which is base at Kikatiti along Arusha – Moshi highway was responsible for providing financial and material support for the project implementation.

The CED student is the one who was involved from the very beginning and continue as a facilitator in the whole project. She was also responsible for supervising, coordinating, capacity building of the participants in the project as well as monitoring and evaluation of the project. From this coordinated effort of various stakeholders who participated in this project, it is suffice to say that when developing countries like Tanzania who always face budget constraints, if little fund is set aside

for certain development project; communities and other development agencies like NGOs can be involved to supplement the little budget set by the government to accomplish those projects.

2.3.3 Project Goal in CED Terms

The main goal of established project was to enhance the accessibility of safe and clean water at Maroroni ward by 2014. Maroroni ward is characterized with water table but currently, communities walk long distances to fetch water due to lack of initiatives to mobilize resources and opportunities that will help solve this impending problem. Therefore, this project was designed to drill five well in the three villages namely Vareska, majengo and Migandini at Maroroni ward.

2.3.4 Specific Objectives

i. To drill five wells in three villages of Maroroni ward, namely Vareska, Majengo and Migandini.
ii. To create awareness on use of clean and safe water among communities in Maroroni ward by the end of the year 2014.

2.4 Community Profile

Maroroni ward is among the 37 wards of Arumeru district in Arusha region. It is located in the direction of Arusha-Moshi road, 45 km from the Arusha town. According to the national census of 2012, it was estimated consist of 16,165 population size. The main economic activities undertaken by the community members include agriculture, petty cash business, pastoralism, small scale industries such as carpentry and shoes making (Maroroni ward profile, 2013). The main sectors

that have employed more than 80% of people are pastoralist and agriculture (Ibid).

Due to lack of accessibility of water resources, the people of Maroroni use donkey to travel around 7 to 9 kilometers fetching water. Lack knowledge and skills on collecting water from rain seem to culminate the problem as communities fail to make reserve water for the future uses during rainy season. Whether this is due to lack of financial base-power to buy or construct reserve tanks, or lack of the stipulated knowledge, it remained to be unclear. The area is characterized with unreliable rainfall for several times a year.

It is obviously for these people to use water from river for cooking, washing clothes and for drinking. Also animals use the same river for drinking water. The most affected group is women and children who are responsible for fetching water from river. This situation leads to poor performance of children in schools because they spend a lot of time in fetching water than attending in schools. Similarly it causes the problem of truancy in many schools.

The community was involved from the first stage of formulation of this project to the last stage of evaluation. This enabled the community to feel sense of ownership of the project. During implementation stage of the project, the people were able to contribute both financially and physically. They were also responsible for protecting the wells and the sources of water during and after the implementation of the project. The role of CED student was to conduct implementation and evaluation of the project. In these stages she was able to provide technical advice for the community to make sure the intended goal is met by the community.

2.5 Conclusion

From the community needs assessment made it is suffice to say that the project conducted was initiatives of the communities (Maroroni citizens) and the CED student. Since the project has been proposed by the community themselves it would be sustainable as the community involved in the whole process of project identification which provides a sense of ownership. Therefore, the role of a CED student in this project is to facilitate the community to start running the project, monitoring and evaluation and it was the responsibility of the CED student to disseminate the findings attributable to success of the project to other areas.

CHAPTER THREE

3.0 LITERATURE REVIEW

3.1 Introduction

This chapter provides the literature review in three aspects which include theoretical review, empirical and policy review. On other hand, the empirical literature shall try to gauge on previous research/projects which have been conducted in our country and elsewhere around the world and the last section were the policy issues related to accessibility and utilization of resources among the community for poverty reduction.

3.2 Theoretical Literature

3.2.1 The Situation of Accessibility of Safe and Clean Water

Accessibility of water can be measured by the amount of time an individual must spend in round-trip travel to reach safe water. Water is considered inaccessible if it requires travel of more than one kilometer or thirty minutes round-trip (URT, 2002). The supply of safe drinking water and the provision of sanitation are management issues that raise concerns about inequitable service provision, particularly in developing countries (Gleick, 1995). Although several successful initiatives have been launched to supply safe drinking water to urban populations, efforts still fall short of the required targets for sustainable development. In developing countries water delivery systems are plagued by leakages, illegal connections and vandalism, while precious water resources are squandered through greed and mismanagement. The World Bank recently estimated that US$600 billion is required to repair and improve the world's water delivery systems (UNCSD, 1999).

During the 1990s, the greatest reduction in per capita water supply was in Africa (by 2.8 times), Asia (by 2 times), and Latin America and the Caribbean (by 1.7 times), while water supplies available to European populations for that period decreased by 16% (WHO/UNICEF, 2000). The lack of access to safe drinking water and sanitation is directly related to poverty, and in many cases, the inability of governments to finance satisfactory water and sanitation systems. The direct and indirect human costs of these failings are enormous, including widespread health problems, excessive use of labor (particularly for women, who are forced to travel long distances to obtain water for their families), and severe limitations for economic development (Gleick, 1995). Improved water and sanitation facilities, on the other hand, bring valuable benefits for both social and economic development and poverty alleviation (WHO, 2011).

Significantly, the percentage of people served with some form of improved water supply rose from 79% (4.1 billion people) in 1990 to 82% (4.9 billion) in 2000. Between 1990 and 2000, approximately 816 million additional people gained access to water supplies - an improvement of 3% but two out of every five Africans lack access to an improved water supply. Throughout Africa, rural water services lag far behind urban services, (UNCSD, 1999). Also, in Africa, Asia, Latin America and the Caribbean, nearly 1 billion people in rural areas have no access to improved water supplies.

The proportion of people with access to excreta disposal facilities increased from 55% (2.9 billion people) in 1990 to 60% (3.6 billion) in 2000. Between 1990 and 2000, approximately 747 million additional people gained access to sanitation

facilities - although the number of people who lack access to sanitation services remained roughly the same, (UNCSD, 1999). The same study provide that polluted water is estimated to affect the health of more than 1.2 billion people, and to contribute to the death of an average 15 million children every year. In 1994, WHO estimated the number of people without access to clean drinking water at 1.3 billion. By 2000, nearly 1.2 billion people lack access to clean water, while 2.4 billion lack access to adequate sanitation services, (UNCSD, 2001).

3.3 Empirical Literature

For many years there a lot of measures taken nationally and internationally to reduce the problem of inaccessibility of safe and clean water over the world. Most of research shows that, rural areas are the most affected areas, (Marilyn and Sandhu, 1987). In rural Africa, according to the World Bank, 40 million hours are spent each year in collecting water for domestic use and half of Africa's population is without access to safe water (Black, 1998). Also it was found that, the most common sources of water are natural streams, springs and rivers, (Calvo, 1994).

Inaccessibility of water in rural areas seems to affect more women and adult female and children. The study conducted by Calvo (1994) found that, adult females, assisted by children, are largely responsible for water collection. This pattern was found to be common to all four survey areas; i.e. women transported 67-90 percent of all water for domestic consumption. The participation rate of children is higher in Ghana, 28 percent, than in the other surveys, 816 percent. This argument is strongly supported by Benoit el al (1990) by providing that men were rarely involved in water collection for domestic purposes.

Evans (2001) mentioned that, the number of hours that rural women dedicate to water collection is increasing in many areas of Sub Saharan Africa due to low and erratic precipitation and falling water tables. Also lack of water, or water of poor quality, affects family health, imposing additional burdens of child health care on women. Inadequate personal hygiene can also be related to the chronic shortage of water. Moreover, poor access to water reduces opportunities for women to raise cash and supplement diets through such activities as gardening and keeping small livestock and poultry.

It is estimated that women in many developing countries walk for an average of about 6 kilometers each day to collect water (UNFPA 2002). Water collection for domestic purposes is generally the responsibility of women and girls in almost all developing countries. Thus, if water supplies become scarce or contaminated, women and girls are the ones who must look for alternative sources of water. In addition, they must also provide care if family members suffer from waterborne diseases. The availability of clean water close to home reduces women's workloads, and the time saved in fetching water may be spent on other activities to strengthen livelihood resilience, including productive activities such as crop production.

Similarly, inaccessibility of water seems to be not only time consumedly to the women, but also it has health impact to them. Due to the fact that they commonly carried on the head in containers and they carry heavy loads over large distances can result in damage to the vertebral column, (Heidemann et al, 2002). Significantly, most of researches indicated that, the consumption water should go perpendicular with the distance of water collection. The On the other hand, survey work in the

Singida region of Tanzania by Anderson et al (1984) suggests that the most crucial factor keeping women from using an improved water source was its relative inaccessibility. Improved sources were on average more than 700 meters from the homes, which was further than the average distance of traditional sources.

On the other hand, the finding form a project in Tunisia indicate that, water consumption and user patterns had not changed with the provision and/or improvement of wells because the distance to the water source was not substantially reduced. In some cases, women had to walk up to 6 km to reach the source. Thus, if women cannot access an improved water point more easily than traditional water sources, they are less inclined to use them, (Nieves, 1985).

There is study which shows that there are large discrepancies between potential capacity and the actual service of improved schemes. For instance, in 1983, the Tanzanian government estimated that 39 percent of the population had access to improved water supplies. However, surveys in Tanzania indicate that out of 30 villages with improved water sources, 26 villages still mainly relied upon traditional sources. The proportion of the population which actually benefited from the improved water supply could have been as low as 5 percent, (Anderson, 1985).

Although there are many water projects initiated at rural areas, few water supply projects have been able to achieve their objectives of supplying rural communities with reliable, clean water close to the home all throughout the year. Calvo (1999) found that, one of the main reasons is lack of community participation. Communities have often been told what they are expected to contribute rather than asked what

they are willing and able to contribute.

This argument is supported by Anderson and Carolyn (1985) by providing that, participation has frequently been limited to the supply of labor for digging trenches and wells, and symbolic involvement at the decision-making level with regard to the location of supply points, or organization for maintenance. As a result of this lack of meaningful participation, there is often a feeling among communities that it is not themselves, but the government, who are responsible for the functioning of the water supply system. This is partially a consequence of the programs being "high-tech" and installed by a team of experts with limited or no local involvement. The main emphasis in planning and execution has been placed on technical and economic aspects to the detriment of social and cultural factors.

The ILO report (2002) mentioned that, the ignorance of involving women in water projects also caused these projects to achieve its objectives. It provide that, the planning of water supply programs has often taken place in complete ignorance of the real needs of the women who are responsible for collecting water. Project staffs mainly meet with village authorities, who in most cases are predominantly male. Ensuring reliable of water supply in rural areas is still a long standing challenge in many developing countries. According to Household surveys report that 46% of households in rural areas had access to clean and safe water in 2000, a figure which dropped to 40% by 2007, (HBS, 2000; NBS, 2008). At the same time, rural citizens have consistently identified water supply as their top priority for government to address. The high prioritization of water supply by rural citizens, combined with slow progress in the sector raises questions about government responsiveness.

Government has, in the past, either failed to recognize the high priority given to water supply by rural citizens or has failed to respond to it.

According to the 2011/2012 HBS, about 53 percent of the population use unprotected water sources. These people are more likely to be poorer (with poverty incidence of 52.5 percent) than those who use pipe water in their homes (17.5 percent), and those who use private pipes located outside their houses (24.8 percent). In addition, only a limited number of the existing waste waters treatment facilities work. Outbreaks of cholera and waterborne diseases affect mostly low-income neighborhoods, with households that have no access to piped water. Moreover, many poor families rely on water vendors who charge rather heavily for their service, or spend a substantial amount of their time fetching water.

3.3 Policy Review

This project is in line with the vision of Tanzania Development Vision 2025, Millennium Development goal 2015 and National Strategy for Economic Growth and Poverty Reduction (MKUKUTA).

3.3.1 The Water Policy

Tanzania has sufficient surface and ground water to meet its present needs. The policy of the government at independence was “free, clean and safe water for all,” the objective being to provide clean and safe water to all villages in rural Tanzania by the year 2000 (MoW, 1997). As indicated above this policy has now been abandoned in favor of a demand driven water development program. The new water policy enacted in 1997 (MoW, 1997), promotes the provision of efficient, affordable

and sustainable water supplies and sanitation. The emphasis is on community planning and management, private provision of goods, works and services related to water supply, and public sector regulation, facilitation and environmental management.

The new water policy underscores the importance of community participation and management in ongoing and new projects. In order to improve water supply services at the village level, the roles of MoW and other stakeholders can be summarized as follows (MoW, 1997). At the Village level, Small-scale water supply projects are to be operated and managed at the village level. Operation and management costs are to be met with funds raised within communities. The emphasis is on management by participation through formulation of village water committees that oversee and manage the utilities on behalf of community members. The communities agree upon the operational modes with specific emphasis being paid to women participation at all stages of water project development and management.

District level, the water department at the district level is required to facilitate training of water managers and attendants/mechanics at the village level. The department is expected to maintain a pool of experienced technicians who will collaborate with village level mechanics in servicing and repairing established utilities. Another role of the water department at the district level is to make sure that necessary spare parts are available when needed. Regional level, the water department at the regional level has jurisdiction in providing guidance and making sure that government water policy and rules are adhered to. Apart from managing water supplies at the regional headquarter level; the department has to provide

consulting services to districts and villages in terms of training, and facilitating availability and distribution of spare parts.

National level, at the national level, the MoW has responsibility for financing and managing large-scale water supply programs (i.e., especially in large cities), to train water professionals, and to finance maintenance units at the district and regional levels. Other responsibilities are to standardize capital equipment and tools used in water development to help facilitate availability of spare parts, and to coordinate donor and NGOs activities to make sure they follow Tanzanian water policies and local government rules and regulations.

The general objective of the water policy is to propagate the new vision of community participation and management based on the DRA. Communities are expected to appreciate that water supply is no longer a free service provided by government, but rather government or other development agencies are available to facilitate and complement community efforts at meeting their own water supply needs.

3.4 Literature Review Summary

It is adamant that, inaccessibility of safe and clean water among the rural community contributing in increasing of poverty and hard condition life in most developing countries as seen in the literature survey. Despite the innovation of water projects, but still the innovation cannot fulfill the needs of the whole community, due to inadequate facilities, funding capacity, social exclusion for community members, lack of clear policy and procedures to guide them, low community membership and

inadequate education provided to members so that they understand not only their rights but also their obligations. Inadequate women roles present in Maroroni ward need to be holistically addressed if the community needs socio-economic development. Therefore, the community problems can be solved by the members themselves in collaboration with other development partners; however this must looked as complementary support to their own resources.

CHAPTER FOUR

4.0 PROJECT IMPLEMENTATION

4.1 Introduction

After community needs assessment and project problem identification it was agreed between the CED student and the citizens of three villages of Vareska, Majengo and Migandini at Maroroni ward to start implementing the project. In order to provide what was implemented it is important to get the overview of the original plan and then gauge on the actual implementation and what was accomplished in terms of activities. Therefore, this chapter is organized into the following segments; products and outputs, planning and implementation of the project.

The project implementation was participatory focusing on increasing the accessibility of safe and clean water to the target community, project which was coordinated by the CED student. The project implementation started in March, 2013 and is expected to end in the 2014. For the purpose of ensuring the project moves forward, various activities were strategically planned and implemented in order to meet established project objectives according to time frame and plan.

4.2 Project Products and Outputs

During the life time of the project, it is expected to have accomplished the followings;

i. Drilled and functioning 5 wells which includes; 2 wells at Valeska village, 2 wells at Majengo village and 1 well at Migandini village.
ii. Three seminars on the use of clean and safe water and communicable diseases transmitted via contaminated water.

iii. Two hundred brochures elaborating on the effects of using un-safe water and importance of using clean safe water

The project output is expected to improve the accessibility of safe and clean water among the citizen of Maroroni ward. It is also expect to improve the livelihood of people of Maroroni ward as women will engage in other socio-economic activities. However, decreased rate of truancy as a result of students spending a lot of time in fetching water is another expected outcome of this project whereas diseases which were erupting as a result of using un-safe and clean water is expected to be reduced or diminish. This is expected to be realized after the community have absorbed and utilized the output the project will provide. It is also expected that, the villages which belongs to this project will spill over the effects of the project to the other villages of Maroroni ward and hence the whole neighboring community were to benefit from the project as a result.

4.3 Project Planning

In order to start the project the CED student conducted a participatory project planning action by involving the target community in order to arrange the activities which were involved in the project. The process involved activities identification, sequencing, timeline, resource needed and the budget required to fulfill those activities. The activities identified were geared towards achieving project objectives, the summary of the activities with respect to the timeline and resource needed is given in the following sub section.

Table 4.1: Implementation Schedule

Activities	Project Month																				Resource needed	Responsible person
	2013												2014									
	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A		
1. Conducting community needs assessment	■	■	■	■																	Stationeries, transport & Laptop	CED student & target community
2. Meeting the target community for project action plan					■																Stationeries & transport	CED student & participants
3. Nomination of Project sub-committee in respective village					■	■															Transport	CED student and target community
4. Drilling of 5 wells; 2 in each of the two villages, Valeska and Majengo; 1 at Migandini village							■	■	■	■	■	■	■	■	■	■	■	■			Manpower and money (2,400,000)	CED student, Local government, NGO, Project sub-committee & Meru district council
5. Preparation of training materials					■	■	■	■													Stationeries	CED student
6. Conducting seminars in respective villages									■	■	■	■	■	■	■	■					Transport, stationeries & training facilities	CED student
7. Dissemination of brochures									■	■	■	■	■	■	■	■					Transport	CED student & Project sub-committee
8. Periodic monitoring and evaluation of project activities	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■			CED student, Project sub-committee, Local government and NGO

Source: Research finding 2014

Table 4.2: Project Budget

No.	Activity/Item	Rate	Total cost (Tsh)
1.	**Community Needs Assessment (CAN)** a) Reconnaissance survey " Transport 4 trips " Meal allowance **Subtotal**	 40,000 20,000	160,000 80,000 **240,000**
	b) Research Instrument Development " Stationery c) Field Data Collection " Transport 10 days " Meal allowance " Focus group discussion (20 people) " meal allowance **Subtotal** d) Computer data entry and Analysis " Data entry (one person 2 day assistant) e) Report production summary of the findings " Printing report 3 copies f) Communication " Telephone, posting and e - mail	 40,000 20,000 5,000 20,000 20,000	120,000 400,000 200,000 100,000 **700,000** 40,000 **60,000** **180,000**
Total Costs for CAN			**1,340,000**

2.	**Project cost** a) Community capacity building " Transport 4 trips Facilitator accommodation 14 days " Training allowance for facilitator 14 days **Subtotal**	50,000 30, 000 80,000	200, 000 420, 000 1, 120,000 1, 740,000

Source: Research finding 2014

Hence, the total direct project costs is 19, 110, 000 Tanzanian shillings only, the other costs were regarded as passive incurred due to contribution from the CED student and the community.

4.4 The Project Implementation

The project were implemented by the following key stakeholders

i. Members of Majengo, Migandini and Vareska Villages, who are the directly beneficiaries of the project.

ii. The CED student participated as a facilitator to guide the process of bringing efficiency, effectiveness and sustainability of community.

iii. Ward Development committee which were responsible for mobilizing the community to participate in project implementation.

iv. The Meru council which will provides the technical and financial assistances for the implementation of the project.

v. NGOs, World Vision and Kikulunge who supported the project by providing material and some financial assistance.

4.4.1 Logical Framework

Logical framework sometimes known as planning matrix was used as it sets out key features: integrated indicators, providing quantitative and qualitative details on objectives. The description of the logical frame work has been indicated in the Table 4.3.

Table 4.3: Logical Framework Approach (LFA) for Water Project at Maroroni Ward

Narrative Summary	Objective Verifiable Indicator(s)	Means of Verification	Assumption
Broad Objective ➢ To enhance the accessibility of safe and clean water at Maroroni ward by 2014.	-Availability of safe and clean water along the Maroroni ward	-Baseline report -Project evaluation report	-The community and stakeholders participating in project implementation
Specific Objectives ➢ To prevent eruption diseases which caused by using unsafe and clean water at Maroroni ward by 2014. ➢ Increased quantity and improved quality of water available and consumed at Maroroni ward by the end of the year 2014. ➢ Reduced burden of time and energy to the community of Maroroni by 2014.	-Low number of people affected with diarrhea at Maroroni ward -Low rate of people using contaminated water. -Increase amount of liters accessing by the people -Number of dams controlled and protected -Short age of time spending by people in fetching water.	-Health baseline report -Health committee report -End of project report -Report from other organizations -Project survey report -Village government report -Baseline report -Pilot survey	-The community accessing safe and clean water -Health education provided to the whole community. -People accessing safe and clean water within their areas -There is clear participation of local citizens in project implementation. -Water accessible not more than 500m from the people's settlements.

Outputs/Results ➢ Decrease the eruption diseases which resulted in accessibility of safe and clean water. ➢ The rate of truancy caused by students spends a lot of time for searching water it's eradicated. ➢ Both primary and secondary schools students will get a time for resting after comeback from the school. ➢ Women will engaged in other social economic activities ➢ Reduced walking distance to people searching water.	-Fewer number of people suffering with diarrhea. -Increase of school attendance in primary and secondary schools -Participating of children in sports and games after school hours. -Involvement of women in agriculture and business. -Availability of water tap near the people's houses	-Health committee report -Doctor's report -Baseline report -School attendance -Baseline report -Project report -Pilot survey -Baseline study report -Project evaluation report -Report from other organization -Baseline report -Project report -Survey report	-Safe and clean water accessible by the community of Maroroni. -People understanding the importance of using safe and clean water -Students and their parents accessing water near their houses -Students they are no longer walk very far for searching water. -Water available in few distance therefore, they use little time in fetching water. -Water infrastructures available to the people of Maroroni.

Source: Research finding 2014

4.4.2 Implementation Strategy

The direct beneficiaries of this project are the people of Maroroni and neighboring villages which have the same problem like the people of Maroroni.

4.4.3 Inputs

The implementation of this project required financial resources, human resources like water experts and constructors as well as physical resources like teaching materials, cements, water pipes, accommodation and transportation.

4.4.4 Staffing Pattern

The good partnership between the citizens of Maroroni ward and the CED student is the key to success of the project. The citizens have provided a clear determination in fulfilling various responsibilities which have lead to smooth running of the project implementation.

4.4.4.1 Responsibilities of Maroroni Citizens

In implementation of this project, each member was responsible to contribute physically or financially in order to achieve that goal. Also they suppose to protect all infrastructure of the project to avoid thieves.

4.4.4.2 CED Student

The participation of the CED student in the project is to facilitate the project through conduction of capacity building in accessibility and utilization resources for poverty reduction. The CED student is also responsible for monitoring and evaluation of the project.

4.4.4.3 The Construction Committee

This is the committee established within the Maroroni ward to foster the implementation of the decisions decided by the community. The role of this committee in this project is to make followed of what has been appraised to be fulfilled by the community and also encouraging other partners to attained projected goals. The construction committee is also responsible for immediate monitoring and evaluation activities.

4.5 Project Implementation

The project implementation started from July, 2013 and due to time limitation and continuation of the activities, it is expected that technical support will continue to be provided to the citizens i.e. beyond completion of CED course.

CHAPTER FIVE

5.0 PARTICIPATORY MONITORING, EVALUATION AND SUSTAINABILITY

5.1 Introduction

Participatory monitoring and evaluation are complementary, without monitoring; evaluation cannot be done well. It is important to both track the progress and make an assessment about the value of the project so that good decision can be made at all levels. It also provides ways to engage people in active learning and reflection about their work, and can be confidence-building and affirming for all involved. This means that monitoring and evaluation processes should be participatory and this can create a sense of ownership of the project by the project beneficiaries. On other hand, the project designer has to make sure that the project has gained the capacity to sustain itself when the external support is removed in terms of human resource, material and financial resources.

5.2 Participatory Monitoring

The citizens of Maroroni ward were the owners of the project. They will have the projection of what they want to be achieved in undertaking the project. The major objective of the project is to enhance the accessibility of safe and clean water at Maroroni ward by 2014. In order to get out of the problem of inaccessibility of safe and clean water, the project which has been undertaken was their immediate choice. The role of the CED student in the project is to facilitate them to achieve the objective from the project. Therefore, the CED student and the community members sat together to identify various indicators that will provide a reflection that they are

achieving their targets and that the planned activities are implemented as it was arranged with respect to the time frame. It was also agreed on who were responsible for collection of the information and at what frequency should the information be shared with others and how individual members will present success or problem encountered.

5.2.1 Monitoring Progress

Three stakeholders were involved in the monitoring of the project; the first one involved the CED student who was responsible in supporting the community in analyzing the problems encountered during implementation. The second category is the group committee which was responsible for followed up and encouraging group members to implement the agreed tasks which will lead to the fulfillment of the project objectives and the goal. The third category is the individual group members who are responsible for monitoring the day to day activities of the project and providing feedback to the other two stakeholders.

5.2.2 Monitoring Information System

In order to enable the project stakeholders to plan, monitor and evaluate the operations and performance of the project; it was important to design project management information system to collect and provide feedback to community and technical personnel as well as host organization on the project activities. Table 5.1 provides the summary of the project monitoring information.

Table 5.1: Monitoring Information

Category Of Information	What To Monitor	What Record To Keep	Who Collect Data	Who Uses Data	How To Use Information	What Decision Can Be Made
Work plan activities	Timing of activities Availability of resources and personnel	Work plan Weekly report	Community committee and CED student	Stakeholders (community members, CED student)	To ensure that planned activities are done accordingly	Reschedule and amend where does not work properly
Village meetings	Attendance of members Community needs views and suggestion during implementations. Problems faced by the community towards achieving project goal	Meeting minutes	Village committee, community members committee CED student	Stakeholders (government and CED student	To implement what has been proposed	Support their request or re-discuss to find alternative solution
Evaluation of dams' construction.	The evaluation for the project was done.	Evaluation report	Water expert and CED student	Stakeholders (Maroroni community, CED student)	Implement project goal, objectives and activities planned Use of result to run the project	To redefine the activities of the project.
Community assessment	Knowledge, attitude and skill before and after inception of the project Benefit of the project and problems encountered during the implementation	Social economic activities before and after the project inception	Community committee and CED student	Stakeholders (Maroroni community and CED student)	To identify the impact of the project and people perception of the project	Facilitate the communities to benefit more from the project or change intervention techniques in order to facilitate more project effects
Reviewing the	The actual cost of the	Quotation	Community	Maroroni	To ensure the budget	Redefine the project

cost of the project	project implementation	lists	committee	community and CED	reflect actual price	costs
Starting of project implementation	The involvement of community members and other stakeholders in project implementation	Procurement documents	Community committee and CED student	Stakeholders, Maroroni community and CED student	To identify the involvement of community and other stakeholders in attaining the project goal	To redefine the time framework for starting implementing this project.
Level of Project implementation	To what extent the project activities lead to reach the project activities	The progressive report of the project implementation.	Community committee and CED student	Maroroni community, stakeholders and CED student.	To review the project activities to reach the project objectives.	To change the project activities in order to reach the final goal of the project.

Source: Research finding 2014

5.2.3 Participatory Monitoring Method

In order to monitor the progress of the project it was necessary to select a monitoring tool which was responsible for overseeing the progress of the project. The method was designed by taking into account the local peoples‟ perspective and providing them greater say in the planning and management of the monitoring and evaluation process. In this way a participatory community action plan was considered. This involved the formation of the group committee which was responsible for making followed of what has been planned in the participatory manner by the group members. This involved planning and implementing the changes by identifying and specifying what were done, who will do it and how will it be done. To make this effective the group agreed to meet once every week they discuss

problems, needs and provide a way forward. If there is a technical problem they have to communicate with the CED student. It was agreed that the CED student should be visiting them once every month.

Table 5.2: Participatory Monitoring Plan

Objectives	**Activities**	**Indicator (s)**	**Data Source**	**Methods/tools**	**Responsible person**	**Time frame**
To prevent eruption diseases which caused by using unsafe and clean water at Maroroni ward by 2014.	To conduct awareness to the Maroroni community.	Capacity building seminar is prepared at Maroroni	Project facilitator (CED student)	Records, Observation	Community committee and CED student	Between February and early March 2014
	Preparation of construction of water dams	Availability of proper information and materials				
Increased quantity and improved quality of water available and consumed at Maroroni ward by the end of the year 2014.	Construction of water infrastructures and providing more education to the people in protecting water sources.	Funds available and capacity building schedule prepared.	Project facilitator (CED student), stakeholders and Maroroni community members.	Records, project planning	Community committee, community members, stakeholders and CED student	Between February and early July 2014
Reduced burden of time and energy to the community of Maroroni by 2014.	Supply water pipes along the community	Water pipes and taps are available in project area	Community committee, Project facilitator (CED student),	Committee records and report, project planning.	Community members, stakeholders and CED student	Between July and September 2014

Source: Research finding 2014

5.3 Participatory Evaluation

The scope of evaluation is to make assessment of the project activities and gauge on the performance to provide information to monitor and improve the project. In the project undertaken, the evaluation process was planned to be done after every three month to assess whether the implementation is conducted as planned. For the sake of gauging the performance of the activities so arranged the following performance indicators were considered to be used as indicated in the following table 5.3.

Table 5.3: Performance Indicators

No.	Objectives	Indicator (s)
1	To ensure between March and April 2014 the village meeting is conducted to enhance the implementation of the project	-Number of meeting conducted -Number of community members participating in village meetings
2	To ensure between May and June 2014 30% of Maroroni community members accessing safe and clean water.	- constructed and protected Number of Dams -The use of water treatments -Low rate of eruption diseases caused by inaccessibility of safe and clean water.
3	Enhancing between July and August 2014 there is availability of safe and clean water over 2 villages of Maroroni ward.	-People do not walk very far for searching water. -People using little time for fetching water and using a lot of time in other economic activities.
4	Monitoring and evaluation of the project by the community.	Periodic reports

Source: Research finding 2014

5.3.1 Participatory Evaluation Methods

5.3.1.1 Formative Evaluation

There are many tools which have been used including observation, field survey, in-depth interview, report analysis, focus group discussion and dialogue of the participants. All these can be used in the formative evaluation. Depending on the goals of the project it has been devised to use one or more of these tools. Within the range of the formative approaches there are four main goals for formative evaluation each may be more or less emphasized depending on the program needs. Each of these approaches has been summarized below with focus n their applicability to the accessibility of safe and clean water.

5.3.1.2 Implementation Evaluation

This focuses on the extent to which the program is proceeding according the plan. Information about ways in which the program is not proceeding according to the plan can be either used to revise programming. In the project the implementation evaluation was used as a component to feed into the planning focused evaluation. Implementation evaluation can also be part of the summative evaluation. In case, an activity was not going according to the plan, the participants and facilitator used an implementation evaluation with a planning focus to ask why things were not going as planned and adjust the plan accordingly.

5.3.1.3 Monitoring Evaluation

An outside evaluator usually conducts a monitoring evaluation during the course of a program. Since the project is facilitated by the CED student and it has limited funds this aspect has not yet to be taken into consideration but efforts are made to arrange

if possible one of the field officer from Maroroni community should visit the group and see the project progress.

5.3.1.4 Progress Evaluation

A progress evaluation assesses a program's progress. The project's unique goals should serve as a benchmark for measuring progress. Information from progress evaluation can later be used in a summative evaluation. In this project, a progress evaluation assess attitude change partway through a multi-year program, providing both feedback on what's working, and evidence of impact early on in a program. Participatory self-review and planning methods developed by Peace Corps Volunteers were used in progress evaluation. It was done annually and data from monitoring and implementation evaluation were used in the evaluation. The method gives room for participants to assess also what went wrong, weaknesses, opportunities, responsible people and requirements. It gives them direction as to what they should do to improve the project.

Alternatives may include dissemination to other sites or agencies, continue funding, increase funding, continue on probationary status, modify and try again and discontinue. It addresses questions like; to what extent has the project met the stated goals for change or impact, can the program be sustained, is the project replicable and be disseminated, which components are the most effective and which components are in need of improvement.

5.3.1.5 Summative Evaluation

The project has planned to conduct summative evaluation after one year of the

project. Indicators for assessment are availability of safe and clean water, reducing the time burden for searching water, there is no eruption disease like diarrhea which cause by using of unsafe and clean water and reduction of truancy among the secondary and primary pupils who spent their time for searching water instead of going to school. The data were gathered through semi-structured questionnaire, focus group discussion and on site observation. This evaluation is not meant to be presented to external donors, it was participatory which intended to be presented to the group members for discussion and comments and way forward. Analysis was done qualitative and presented in a simple way using tables, charts and narrative for all the participants to understand.

5.3.2 Project Evaluation Summary

This section will provide the project evaluation summary in the tabular form: Project goal: To enhance the accessibility of safe and clean water at Maroroni ward by 2014.

5.4 Project Sustainability

The project is considered to be sustainable since the local citizens were involved in the implementation the project. Findings from the community need assessment and the case study undertaken from some of the Maroroni community is stimulating facts which triggered the Maroroni community members to develop this project. Maroroni community have realized their situation and want to move out of inaccessibility of safe and clean water for this reason is the great strength for sustainability of the project. One of their strength is participation planning whereby the entire community is equally involved in the designing, implementation, monitoring and decision making of the project. This is an important input to the project sustainability. Since

the community members are involved in monitoring and evaluation of the project activities, they were involved in examining what goes wrong and how to improve for progress of their project.

CHAPTER SIX

6.0 CONCLUSION AND RECOMMENDATION

6.1 Introduction

This chapter present the major conclusion made from data analysis and discussion of the findings. It also including the recommendation related to the problem and furthermore, identified the areas which require a further research

6.2 Conclusion

Accessibility and clean water is very important especially in rural areas which suffer for a long time with lack of this potential needs. It will reduce the burden of time for travelling very far searching for water which is not safe and clean. Availability of underground water is not very far, therefore, the government, community and other stakeholders can collaborate together drilling underground water for domestic uses. Similarly, availability of safe water within their areas, will serve most of women and children who spend a lot of time fetching water from nearest villages. This will allow them to participate fully in other economic activities such as agriculture. Also it will increase the school attendances by making those students who use their school time helping their parents searching for water are able to attend school all the time.

6.3 Recommendations

The project has been made potential because it was initiated through participatory manner which provided a common learning between the communities and the project facilitator. For this reason, it is very essential before taking any project; enough time should be taken to learn from the community about the project that is anticipated to be established in the locality as the communities have some indigenous knowledge

which if taken into consideration and manipulated accordingly can be a cost effective way in running the project.

A grateful inquiry was kind of the research designed used in the participatory assessment whereby both field study and survey research methods were used. The data were collected through observation, interviews, structured questionnaires and focus group discussion which were found to be more useful in collecting as much information as well as providing an opportunity for the researcher to learn from the community, therefore where opportunity occurs is better to combine all of the above mentioned data collection methods so as to know the inside-out of the community about the matter being investigated.

The author would like to recommend that there should be a project that will address the harvest of rainfall water with appropriate model that will help the community to access more water for domestic uses than they access today. Throughout participatory needs assessment, it was found that some community members are real committed in volunteering in protecting the water infrastructure for the benefit of the whole community of Maroroni. This is due to the fact that, some people will still those infrastructures. This situation should be resolved through participating through formulating their own security guard for protecting those infrastructures.

Significantly, inaccessibility of safe and clean water is seen to be a major problem not only to the people of Maroroni but over the whole part of rural areas of Tanzania. Due to that, it’s a time for the government to allocate more resources especially financial resources to implement more water projects in rural areas.

REFERENCES

Abernerty, C.L. (2001) Inter-sectoral management of river basins: Strategies for poverty alleviation and Agricultural Growth." Proceeding of International Workshop on integrated Water Management in Water-stressed River Basins in Developing cohjfuntries: Loskop Dam,South Africa, 16-21 October 2000.

Annual report (2010) King'ori Area Development Program, Published 2010 October by world Vision Tanzania.

Baland, J. and Platteau J. (1996) Halting degradation of natural resources: Is there a role for rural Communities? Oxford, UK: Food and Agriculture Organization of the United Nation and Clarendon press

Barbier, E.B. and Thompson, J.R. (1998) The value of water: Floodplain versus large-scale irrigation Benefits in Northern Nigeria, Ambio, 27 (6): 434-440.

Bauer, C.J. (1997) Bringing water market down to earth: The political economy of water right in Chile, 1976-95. World Development 25 (5): 639-56.

Braasch, M. (1999) Community Participation in Rural Water Management in Moshi: The Uroki-Bomang`ombe experience. A paper presented at the Zanzibar Water Sector Stakeholders Consultative Meeting. Ministry of Water Construction Energy, Land and Environment, Zanzibar.

Briscoe, J. (1996) Water as an economic good; the idea and what it means in practice.

Burra R. (1996) Community involvement in integrating improvement of indigenous irrigation with soil and Water resource management: the case of Traditional Irrigation Improvement (TIP) Tanzania, Available on-line at http;//srdis.ciesin.org/cases/Tanzania-020.html.viewed 15/02/2013.

Charwe, D., Koroso at el. (February 2004) A Review of the Tanzania National OVC Response under the National Multicultural Strategic Framework (2003-2007)

Chikozho, C (2002) Restructuring the commons: Water Reforms in Southern Africain the Context of Global Water Resources management paradigm Shifts. "Presented at" The Commons in an Age of Globalization," the Ninth Conference of International Association for the study of common Property Victoria falls, Zimbabwe, June 17-21, 2012. Presented at World Congress of ICID, Cairo, Egypt.

Department for International Development (DFID) (1991) Water law, water rights and water supply (Africa), Tanzania-study country report. Cranfield University, Silsoe.

Easter, K.W., Rosegrant, M.W., and Dinar A. (1998) Markets for water, Potential and performance, natural resource management and policy. KLUWER Academic Publishers, Boston.

Ellis, F., and Mdoe, N. (2002) Livelihoods and rural poverty reduction in Tanzania. LADDER Working Paper No. 18. ODG, Norwich, UK

European commission (EC) (1998) Guidelines for water resources development co-operation; toward sustainable water resources management, a strategic approach. European Commission, Brussels.

FAO, (1995) Tanzania.AQUASTAT Version:#October 95. Available on-line at http://www.fao.org/waicent/FaoInfo/Agricult/AGL/AGLw/aquastat/Tanzania.htm viewed 15/02/2012.

FAO, (2001) Global Water Supply and sanitation assessment, 2000 report. Available on-line at http;//www.fao.org/ viewed 15/02/2012

Hearne, R. and Easter, K.W. (1995) Water Allocation and water markets: An analysis of gains from-trade in Chile. Technical Paper NO. 315. Washington,D.C. World Bank.

Holden, P. and Thobani, M. (1997) Tradable water rights: A Property Rights Approch to resolving water shortages and promoting investment. World Bank Working Paper Series No. 1627. Washington, D.C, World Bank.

http://www.projectumoja.com (2012) Water Shortage in Rural Areas, Project Umoja Helping the People of Nyamuswa retrieved on 28/2/2014

Hulme, D. K. Moore, at el (July 2001), chronic poverty: meanings and analytical frameworks, CPRC working Paper 2, Chronic Poverty Research Centre, University of Birmingham, UK.

Kaswamila, A.l. and Tenge, A.J.M. (1997) The neglect of tradition agro forestry and its effects on soil erosion and crop yield in the West Usambara uplands in Tanzania. A research report submitted to REPOA, DSM.

Kothari C.R, (2004) Research methodology, 2rd Edition

Kulindwa, K. (1997) Income generating potential through rainwater harvesting in Dodoma region. A report submitted to UNDP, Division for Environmental Management and social Development, New York.

Kulindwa, K. (2000) Economics of water resources: Key issues and challenges Tanzania Journal of Population Studies and Development. Demographic Training Unit. University of Dar es salaam, 7 (1&2): 17-35.

Lankford, B. (2002) Irrigation, livelihood s and river basins. LADDER Working Paper No. 14. ODG. Norwich, UK.

Malty, E. (1986) Waterlogged wealth: Why waste the world`swet places.London:

Earthscan.Marcoutx,A.,1999.Population and environmental change:from linkages to policy issues. Sustainable Development Department(SD),FAO.

Masija,E.H.,1993;Irrigation of wetlands in Tanzania. In Kamukala,G.L. AND Crafter, S.A. Wetlands of Tanzania. Proceedings of a seminar on Wetland of Tanzania.Cambridge:IUCN,pp.73-83.

Mbonile, M.J., Mwamfupe,D.G.,and Kangalawe,R.,1997;Migration and its Impact on Land Management in the Usang Plains,Mbeya Region, Tanzania. Report submitted to ENRECA, University of Dar es salaam, Tanzania.

Meinzen-Dick,R.,1996;Tanzania.Groundwater markets in Pakistan:Participation and productivity. Research Institute. Washington, D.C.Mitchell,B.,(ed.).1990. Integrated Water Management: International Experiences and Perspective. London: Belhaven Press.

Mrema,G.C.,1984;Development of snallholder irrigation in Tanzania:Problems and prospects. In Blackie, M.J. (ed). African Regional symposium on smallholder irrigation. University of Zimbabwe. Harare,Zimbabwe.

North, D.C, 1990. Institutions, institutional change and economic performance. Cambridge University Press.

Oakerson, R.J.,1992;Analyzing the commons: A framework, in D. Bromley (ed.). Making the commons work: Theory, practice, and policy. San Francisco. ICS Press.

Oodit,D., and Simonis U.E.,1990;Water and development: Water scarcity and water pollution and the resulting economic, social and technological interactions. Report to the Wissenschaftszentrum Berlin fuer sozialforschung (science Center Berlin).Berlin, Germany.

Ostrom,E.,1990;Governing the commons: The evolution of institutions for collective action Perry,C.J., Seckler D., and Rock M., 1997. Water as an economic good: A solution, or a problem. IIMI Research Report 14. Colombo, Sri Lanka. International Irrigation Management Institute. Avaiilable on-line at http://www.cgiar.org/iwmi.Viewed 15/02/2002.

Ostrom,E.,1992;The rudiments of a theory of the origins, survival, and performance of common property instutions,in D. Bromley(ed.). Making the commons work: Theory, practice,and policy. San Francisco. ICS Press.

Ostrom,E.,1995;Constituting social capital and collective action. In R.O.Keohane and E. Ostrom (eds.). Local commons and global interdependence: Heterogeneity and cooperation in two domains.London.Sage Publications.

Tanzania National Census (2012) Arusha region, Meru district – Maroroni ward: Tanzania Population and Housing Census retrieved at http://www.nbs.go.tz/sensa/popu.php on 28/2/2014

Postel, S, 1992. The last Oasis; Facing water scarcity. London; Earth scan Publications

Reweta,W.S.J., and Sampath R.K.,1998;sustainability of water supply system: The case of Hai Water project in Tanzania. Water resources Development,14(2),249-270.

Rosegrant, M.W., and Binswanger H.P.,1994;Markets in tradable water rights: Potential for efficiency gains in developing-country water resource allocation. World Development, 22 (11),1613-25.

Sustainable Management of the Usangu Wetland and Its Catchment(SMUWC),2001;Main report-Annex 1:The Usangu Catchment-

Baseline 2001.Available on-line at http://www.usangu.org/.Viewed15.04.2002.

The Times (London), 1997. Nile water piped under Suez Canal to Sinai. October 27.

UNESCO National Commission of United Republic of Tanzania (2013) Water: Clean, Safe Drinking Water a Priority retrieved at http://www.natcomreport.com/Tanzania/pdf-new/water on 28/2/2014

Webb, P., and Iskandarani, M. (1998) Water insecurity and the poor: Issues and research needs. ZEF-Discussion Papers on Development Policy No.2, Center for Development Research, Bonn.

World Bank (2013) Tanzania Overview, retrieved at www.worldbank.org/en/country/tanzania on 28/2/2014

URT (2002) Realising Water's Potential to Support Growth in Tanzania. Research and Analysis Working Group of the MKUKUTA Monitoring System, Ministry of Planning, Economy and Empowerment (Retrieved at www.repoa.or.tz/documents/PHDR_2007 on 15th September 2014)

WHO (2011) Valuing water, valuing livelihood (retrieved online at whqlibdoc.who.int/publications/2011/9781843393108_eng.pd on 15th September 2014).

APPENDIX

DODOSO

CHAGUA HERUFI SAHIHI:-

1. Baada ya kikao cha wawakilishi wa kata ya Maroroni, Je? Katika matatizo yaliyotajwa lipi kwako linaonekana ni kubwa zaidi?
    a) Shule
    b) Barabara
    c) Vituo vya Afya
    d) Maji
2. Je? Sababu zipi mara kwa mara zinapelekea watoto wako kushindwa kwenda shule;-
    a) Ukosefu wa mahitaji muhimu mfano chakula, madaftari, kalamu.
    b) Kuugua
    c) Kusaidia wazazi kuchota maji.
3. Je unajua sera ya maji.
    a) Ndio
    b) Hapana

4. Katika matatizo yafuatayo, tatizo gani ni sugu katika kijiji chako?
    A) Yatima
    c) Maji
    d) Ukosefu wa mtaji.
5. Ukosekanaji wa maji safi na salama unadhiri shughuli zipi kati ya hizi?
    a) Kilimo
    b) Elimu
    c) Kuhudhuria mikutano
    d) Huduma za Afya.

Mwezeshaji akifundisha familia juu ya umuhimu wa maji safi na salama.

MAJI NI UHAI

Maji ni kati ya mahitaji muhimu kwa binadamu, takwimu zinaonyesha kuwa mwili wa binadamu umejengwa kwa asilimia kati ya 55 na 75 za maji. Ni ukweli wa kisayansi kwamba hatuwezi kuishi bila maji na miili yetu haiwezi kufanya kazi yake vyema bila kuwa na maji. Maji ndio kinywaji bora kuliko kinywaji kingine chochote kile duniani kwa sababu maji ni va asili wakati vinvwaii vingine vvote

CHUO KIKUU HURIA CHA TANZANIA

Kimefanikiwa kutoa wataalamu katika fani mbalimbali ikiwepo maendeleo ya jamii katika kuinua uchumi wa jamii husika.

Kipeperushi hiki kimeandaliwa na mwanafunzi wa chuo hiki kwa ajili ya utekelezaji wa mradi wa upatikanaji wa maji safi na salama katika kata ya Maroroni wilaya ya Meru mkoa wa

The Open University Of Tanzania
S.L.P…….
Dar es salaam

Arusha.

Maji ni muhimu ya chotwe kwenye vyomba safi vyenye mifuniko kuepusha uchafu usiingie. Mf. Majani, vumbi n.k.

MRADI WA MAJI KATA YA MARORONI

UMUHIMU WA MAJI SAFI NA SALAMA

UMUHIMU WA MAJI SAFI NA SALAMA

Maji husaidia kupunguza uwezekano wa kupata baadhi ya magonjwa kama vile mafua, mawe ya figo, matatizo ya ini n. k.

Maji husaidia kuboresha tishu za ngozi na kuongeza unyevu kwenye ngozi.

Pia husaidia mmengenyo wa chakula chakula au usagaji wa chakula.

Jinsi ya kupata maji safi na salama

Vyanzo vya maji mf. Visima lazima viwe safi na vizungushiwe uzio kuepusha watumiaji kuingia na kukunyaga maji.

Vyombo vinavyohifadhia maji vyapaswa kuwa safi na vifunikwe vizuri.

Maji ya kunywa yanapaswa kuchemshwa, kuchujwa na kuhifadhiwa katika chombo kisafi.

Maji yaliotuwama sio safi wala salama kwa matumizi ya binadamu

MADHARA YA KUTOKUTUMIA MAJI SAFI NA SALAMA.

Maji yasiyosafi yanaweza kusababisha magonjwa mbalimbali kama vile kichocho, homa ya matumbo, kipindupindu. N. k.

Pia yanaweza kupelekea matumizi yasiyorasmi ya fedha ndani ya familia kwa