

**GENDER MAINSTREAMING IN WATER RESOURCE MANAGEMENT: A CASE
OF WATER RESOURCES INTEGRATION DEVELOPMENT INITIATIVES
(WARIDI) PROJECT IN GAIRO DISTRICT, TANZANIA.**

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**A DISSERTATION SUBMITTED IN PARTIAL FULFILLMENT OF THE
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ABSTRACT

Understanding the gender mainstreaming in water resources management from the insider's perspective is central to determining gender roles of women and men at the community level. Literature indicates that gender mainstreaming is viewed as donor demand rather than management tool of water resources hence lacking the deeper understanding from the insider's perspective. The overall objective of this study was therefore to examine the extent of gender mainstreaming in water resources management project in Gairo District. Specifically, the study analysed strategies used by WARIDI project in gender mainstreaming in water resources management project, evaluated the effect of institutional arrangement on gender relations in water resources management, assessed existing gender dynamics in water resource governance, and explored the constraints of integrating gender in water resource management at the project and community level. The study was conducted in Gairo District, Morogoro Region, a cross-sectional design was adopted during data collection where both qualitative and quantitative data were collected. Content and descriptive analyses were used to analyse data collected, through interviews and focus group discussions. The findings indicate that the position of women and men were recognized by community in project area and some of high leadership positions were held by women in formal water resource management institutions. It was also revealed there are gender inequalities in water resource management particularly in informal institutions. Also the study found that formal and informal institutions were very powerful depending on the sources of water available within the community. It is concluded that WARIDI's efforts to mainstream gender was partially achieved due to existing gender inequalities. The study recommends WARIDI project to extent efforts to address gender inequalities in natural sources of water at Gairo district.

DECLARATION

I, Ambonisye Haule, do hereby declare to the Senate of Sokoine University of Agriculture, that this dissertation is my own original work done within the period of registration and that it has neither been submitted nor being concurrently submitted in any other institution for degree award.

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DEDICATION

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LIST OF ABBREVIATIONS

COWSO	Community Owned Water Supply Organization
EMAC	Empowerment for Marginalized Communities
FGD	Focused Group Discussion
GAD	Gender and Development
GFP	Gender Focal Person
IWRM	Integrated Water Resource Management
KI	Key Informant
LGA	Local Government Authority
MDG	Millennium Development Goals
MUS	Multiple-User Water Services
NAWAPO	National Water Policy
NGO	Non-Governmental Organization
NSGRP	National Strategies for Growth and Reduction of Poverty
SDGs	Sustainable Development Goals
SNAP	Social Norms Analysis Plot
UNDP	United Nations Development Programme
UNICEF	United Nations International Children Emergency Fund
URT	United Republic Tanzania
USAID	United State Agency for International Development
VWC	Village Water Committee
WARIDI	Water Resources Integration Development Initiatives
WASH	Water, Sanitation and Hygiene
WHO	World Health Organization

WUA	Water User Association
WWAP	World Water Programme

CHAPTER ONE

1.0 INTRODUCTION

1.1 Background Information

Gender mainstreaming is a strategy for making women's as well as men's concerns and experiences an integral dimension during design, implementation, monitoring and evaluation of policies and programmes or projects in all political, economic, and social spheres. The aim is to ensure that any implemented intervention benefits all gender groups equally and does not perpetuate inequality. In most cases, due to culturally imposed roles in the household and in society at large, men and women access and use water differently. This is because the importance of integrating gender in water project performance is well known. It is from this ground that Mhache (2012) upholds that gender should not only be integrated in water project but also in the management of water resources. Similarly, Emelder *et al.* (2017) recognize the importance of gender relations with a focus of involving women and men in the management of water resources and development of interventions as an important tool for understanding gender power dynamics.

Water is one of the natural resources that are necessary for sustenance of life, ecological systems and a key resource to social and economic development. Governments, non-governmental organizations, local and international organizations from all over the world have implemented water projects to promote safe rural water supply and sanitation over the years (Gatari *et al.*, 2016). According to the Sustainable Development Goal number 6, gender equality in the accessibility of clean water and sanitation, ecosystems and reduced inequalities is very critical to the world people live in. This is because water is an essential resource in eradication of extreme poverty and hunger, promotion of good health and well-being, and strengthens gender equality and women empowerment (Teresia *et al.*, 2014).

Nevertheless, despite this undisputed importance of water, securing clean and safe drinking water has only fairly recently become one of the key agenda in the development arena. Due to the importance of water resource and its implication to sustainable development, it is imperative that water should be managed sustainably (Mandara *et al.*, 2017).

The first significant recognition of gender issues in the water sector was at the United Nations Water Conference in Mar del Plata country in 1977. At the conference, it was noted that gender issues need to be taken into account in the water resources management. It was also highlighted that there was a need to make equitable access to safe and adequate water for domestic needs, sanitation, food security and environmental sustainability which are the basic rights for both men and women and other vulnerable groups especially the poor (Hamdy, 2005). It was realised that poverty eradication could not be achieved without addressing gender issues (Mandara, 2013). It has also been observed that the needs for water between men and women are different (Cleaver and Hamada, 2010); hence systematic consideration of their needs is required in planning and implementation for successful water projects performance and sustainability.

Generally, it is agreed that women and men's participation in water projects improves the likelihood of effective performance and sustainability of the projects. In other words, a project is more likely to achieve what planners hope it will achieve if women and men are active participants and decision makers (UNDP, 2006). Water policies, programmes and projects are often based on generalized perspectives that lack gender perspectives and local knowledge (WWAP, 2015). Failure to mainstream gender in water resources management projects and in sectors such as agriculture, urban water supply, energy and

industries, promote gender inequities and prevent the adoption of innovative solutions that may be put forth by women (WWAP, 2014).

In many instances, gender relation and project procedures account for women having fewer opportunities than men to participate in discussions and decisions, in spite of their roles and experiences (Wambu and Moses, 2015). In most cases, gender integration in projects or programmes has not been taken as specific goal rather it is made as an added component just to look on needs of various gender categories (Masanyiwa *et al.*, 2013). This gender initiative in the sectors emanated from the notion that men and women have different needs and roles regarding water within a project or programme cycle. However, gender awareness varies widely across the different water sectors, and no concerned attempts have been made in the past to consider the gender perspectives in an integrated way of water resources management. Therefore, this study assessed the extent to which gender integration influences success of water resource management projects.

Taking into consideration that Water scarcity, poor water quality and inadequate sanitation negatively impact food security, livelihood choices and educational opportunities for poor families across the world. Water Resource Integration Development Initiatives (WARIDI) was established in Gairo with the purpose of improving water resource management through equal gender participation. This study was conducted in Gairo District where the project is being implemented in order to examine to what extent the project has managed to mainstream gender in water resources management at the community level. WARIDI is a five year (2016 - 2020) project funded by USAID with objective of improving management of water resources and water related services with gender integration and youth inclusion. The aim of WARIDI project is to increase the use of sustainable multiple-

use of water and sanitation services; strengthen governance for sustainable management of water resources and services; and increase livelihood opportunities related to Water, Sanitation and Hygiene (WASH). To achieve its objectives this project was subcontracted to local NGOs to ensure project performance and sustainability. The organisation subcontracted in the study area is Empowerment for Marginalized Communities (EMAC) Tanzania which is implementing Community Owned Water Supply Organisation (COWSO) project. The aim of the project was to establish and build the capacity of Community Owned Water Supply Organisation (COWSO) in the following aspect; administrative, financial management and general management skills, maintenance, operation, technical skills and mainstreaming gender aspects in the project. COWSO is being implemented in 20 villages (Communities) located in Gairo district. However, to what extent WARIDI through the subcontracted local organization has achieved its objectives of gender integration in the water resource management is not known. This study therefore stands to establish an empirical evidence in the study area by: first, analysing the strategies used by WARIDI in mainstreaming gender in water project, evaluate the effect of institutional arrangement on gender relations in water resources management, assess gender dynamics in water resources management governance and lastly, explore different constraints faced by the project in integrating gender in water resources management at the project level as well as community level.

1.2 Problem Statement

Despite the efforts taken by both government and Non-Governmental Organizations (NGOs) to ensure that all groups in the communities can equally benefit from water resource, inequality still exist. Inadequate involvement of both women and men continues to impede programmes and projects that aim at addressing sustainability in water

resources management. Kakumba (2010) observes that gender integration in the management of water resources is an important aspect for sustainable delivery of water resources to both rural and urban populations in Tanzania.

Studies on gender mainstreaming in water resources management projects demonstrate high level of women exclusion and avoidance in the projects. For example, Lundqvist (2014) found that little attention is paid to the effect on women's abilities to use and manage resources for subsistence and for their economic development. Similarly, Aziz and Moussa (2015) observed that women are subordinates to men and, hence, are socially marginalized to the domestic chores, water resource management and in decision making on how to utilize this resource. Masanyiwa *et al.* (2013) on the other hand revealed that in many organisations gender mainstreaming is seen as donor requirement rather than a management tool despite its importance in projects development. This is also echoed in Haider *et al.* (2013) who accentuate that few organisations have faith in gender mainstreaming partly because its influence on project performance is not well understood.

Studies have further demonstrated that poor performance in a number of rural water supply projects is the result of gender inequality (Water Aid report, 2014). This is also applauded in Twaweza (2017) where about 55% of all rural water projects in Tanzania were not functioning. The widespread failures in water project have been attributed to various factors; including poor consideration of gender relations, cultural dynamics, and failure to integrate local perceptions, lack of ownership and inequitable participation of all gender groups (Carter, Tyrrel and Howsam, 2011). Wambu and Moses (2015) suggested that to achieve effective and sustainable water projects gender mainstreaming should be a priority. A study by Johansson (2016) highlighted that it is important to investigate how

gender mainstreaming impacts access, uses and management of water resources. However, all these studies do not show clearly the importance of gender mainstreaming in water resources management basing on the project as a case study. No specific study which has attempted to study the extent of project implementation on gender mainstreaming in water resource management. Thus, the extent to which WARIDI project has integrated gender in the water resources management through gender mainstreaming is not known. Also to what extent guideline, gender focus desk, improved management of water-resources and water related services, and youth inclusion is implemented remained questionable. Therefore, this study stands to reveal new information on the importance of gender mainstreaming in the water projects using a specific case of WARIDI project to analyse to what extent the project has integrated gender aspect in its various projects and how the integration influence performance of the project in terms of equitable water resources management.

1.3 Research Justification

Integration of gender in projects has been traditionally tracked along three dimensions: in the underlying analysis, in the actions proposed, or in monitoring and evaluation arrangements (World Bank Group, 2015). This study is in line with the National Strategy for Growth and Reduction Poverty II (NSGRP) which argue that as Decentralization by Devolution 20 (D-by-D) continues to be implemented, more development interventions need to be under the oversight of the LGA councillors. As such, women empowerment has to be extended beyond political positions, to include other spheres in the society. The generated findings inform Sustainable Development Goals (SDGs); goal 5 which focuses on achieving gender equality and empower all women and girls and goal 6 whose focus is on ensuring access to water and sanitation for all. With respect to Tanzania, the study

supports the vision 2025 that promote gender equality in all socio-economic and political relations and cultures.

Moreover, the current study is important because the established rural water supply and sanitation projects including WARIDI are still in progress, and more water supply projects are expected to be established in future. Thus, if the establishment of the current and future water projects is done without considering gender mainstreaming which influence sustainability of such projects, the government and other stakeholders will continue to spend more money without achieving the expected outcomes of improving the quality of life and social well-being of the people. The study contributes toward the understanding on why and how mainstreaming gender in the project or programme is useful rather than considering it as an added component in the project. Ultimately, the study is useful to WARIDI project in deriving more relevant procedures regarding the integration of gender in the programmes and the results act as the midterm evaluation of project in perspective of gender integration in project design, implementation, monitoring and evaluation.

1.4 Objectives

1.4.1 General objective

The general objective of this study is to examine the extent of gender mainstreaming on water resources management projects in Gairo District.

1.4.2 Specific objectives

1. To analyse strategies used by WARIDI project in mainstreaming gender in water resource management project.
2. To evaluate institutions arrangement in water resources management project.

3. To assess existing gender dynamics in water resource governance in Gairo District.
4. To explore the constraints of integrating gender in water resources management at project and community level.

1.4.3 Research Questions

1. What are strategies used by WARIDI project to mainstream gender water resources management?
2. How do institutional arrangements affect power dynamics in water resources management project?
3. How is gender dynamics portrayed in water resource management institutions?
4. What constraints affect gender integration in water resources management projects?

CHAPTER TWO

2.0 LITURATURE REVIEW

2.1 Conceptualization of Key Terms

2.1.1 Gender

Gender is a social construct that refers to relations between and among sexes, based on their relative roles. It encompasses economic, political, and socio-cultural attributes, constraints, and opportunities associated with being male or female. As a social construct, gender varies across cultures, is dynamic and open to change over time. Because of the variation in gender across cultures and over time, gender roles should not be assumed but investigated. Note that “gender” is not interchangeable with “women” or "sex" (USAID, 2010; Lyimo-Macha *et al.*, 2003; Aguilar and Gurung, 2009).

2.1.2 Gender mainstreaming

Mainstreaming entails a critical review of underlying assumptions about development, institutions and the process of allocation of resources and opportunities (UNDP, 2006, USAID, 2010). Process of assessing the implications for women and men of any planned actions, including legislation, policies or programs, in any area and at all levels.

2.1.3 Water resources management

Water resources management is regarded as an integrated procedure which promotes coordinated development and management of water, land and related resources, in order to maximize the resultant economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems (Vasiliades *et al.*, 2007; Mollinga, 2008). According to Were *et al.* (2008), water resources management refers to a whole

range of different activities: monitoring, modelling, exploration, assessment, design of measures and strategies, implementation of policy, operation and maintenance, and evaluation. It also covers supportive activities such as institutional reforms. Water resources management includes local, national and international activities, directed at either the short or the long term perspectives. As such, water resources management is rather a diffuse field. It includes the whole set of scientific, technical, institutional, managerial, legal, and operational activities required to plan, develop, operate, and manage water resources.

Water management is the control and movement of water resources to minimize damage to life and property and to maximize efficient beneficial use. Good water management of dams and levees reduces the risk of harm due to flooding. Irrigation water management systems make the most efficient use of limited water supplies for agriculture. Water management is the activity of planning, developing, distributing and optimum use of water resources under defined water policy and regulations (Water Aid, 2014).

2.2 Global Trend in Gender Integration on Water Resources Management

Water is a natural resource that is necessary for sustenance of life, ecological systems and a key resource to social and economic development (Gatari *et al.*, 2016). Governments, Non-governmental organizations, local and international organizations from all over the world have implemented water projects to promote safe rural water supply and sanitation over the years. The quest for development has led to consensus that participation by both men and women, not as objects of development but as equal partners, is essential for sustained interventions. This has encouraged the promotion and use of gender sensitive approaches in water and sanitation programs and projects (Johansson, 2015).

At present, globally, there is a better understanding and more awareness of the gender issues involved in water management and a range of initiatives have been introduced to improve the situation. Many countries have recognized the benefits of involving women in all aspects of water use and thus most government guidelines, project designs, programmes and policies now address gender concerns. However, many projects and programmes focus on the practical rather than the strategic needs of women. Hamdy (2005) argues that there needs a change that challenges longstanding traditions and practices and instead the focus should be given to the water rights; those would provide women with permanent means of production – the basis to greater wealth creation, long-term prosperity and financial security.

Until early 1970s, development policies addressed the needs of poor women entirely in the context of their role as wives and mothers. Known now as the ‘welfare’ approach, the focus was on mother and child health, childcare, and nutrition. It was assumed that the benefits of macro-economic strategies oriented towards modernization and growth would trickle down to the poor, and that poor women would benefit as the economic position of their husbands improved. Women were passive recipients of benefits. Water and sanitation services were defined in the context of health care and hygiene, which were seen as women’s responsibilities (Mhache, 2012). Despite governments, development agencies and civil society organizations increasingly incorporating gender perspective in their policies, programmes and projects aimed at sustainable use and management of natural resources, the road to achieve this goal is still a long and arduous one. The commitments made at international conferences and conventions need to be translated into practice, with the full and equal participation of women and men at local, national and international levels (Hamady, 2010). In spite of the variation in approaches, decision-makers are now showing similar thinking on how to manage the available water resources efficiently,

being fundamentally based on a participatory approach where both men and women should be involved and have an equal voice in managing the sustainable use of water resources and sharing benefits.

2.3 Understanding Gender Integration in Water Resources Management Project in Tanzania

It is demonstrated that, because of the rapidity by which notions of integrated water resources management and development have been swept onto international policy-making agenda, water resources management has an urgent need of gender specific analysis (UNICEF/WHO, 2000; 2nd World Water Forum, 2000; The Bonn Conference, 2001; MDGs, 2001 and WSSD, 2002). Scholars further point out that contrary to expectations most planning committees are overwhelmingly dominated by the male members of the community (Katomero *et al.*, 2017).

In Tanzania, most villages have established what is generally known as Village Water Committees. Although the committees are charged with the responsibility for all matters related to water supply issues, women are also greatly underrepresented on these committees. The main factors for poor representation are the women's lack of self-confidence, which again is mainly influenced by cultural limitations, and low level of literacy relative to the men. Another factor is women's commitment to other domestic roles, which are paramount to their social welfare, and that of their family members' e.g. cooking, childcare and general sanitation (Mhache, 2012).

Addressing gender and water together acknowledges these imbalances and seeks to ensure that the contributions of both men and women are recognised. Teresia *et al.* (2014) argue that to manage water effectively and sustainably, it is important to understand the different roles of men and women and to target action appropriately.

The National Water Policy (NAWAPO) in Tanzania acknowledges the key roles and practical interest of women in rural water provision (URT, 2002: 32). A quota system was adopted to ensure women's representation in the formal water management structures at village level, particularly in the Village Council and Water Committees. The Village Water Committee (VWC) is responsible for managing village water projects on behalf of the village and reports to the Village Council.

2.4 Coexistence of Formal and Informal Institutions of Water Resources

Management

Institutions are set of rules, conventions and norms to regulate actions of individuals or groups (Hagedorn, 2005; Hodgson, 2006). Institutions can liberate and constrain individual or group actions (Bromley, 2006). Water governance in Tanzania is a mix of formal and informal institutions. Informal institutions evolve through continuous interactions and practices normally in response to prevailing situations. These are interlocked in the existing customs, traditions, norms and beliefs which sometimes gender roles of men and women in water institutions are treated differently. Normally, informal institutions dominate at a grassroots level, but at times they are interdependent with formal institutions that dominate at the basin level. Sokile *et al.* (2005) assert that formal and informal institutions are essential for water governance and they are strictly inseparable. However, the two are uncoordinated resulting into duplication of interventions and possibly unable to govern water resources effectively (Boateng *et al.*, 2013).

2.5 Theoretical Framework

2.5.1 Gender and Development Theory (GAD)

This is a theory that discards the idea that women are homogeneous. It maintains that women's situation should be seen in the context of the socio-economic, racial and other factors that shape a particular society. It points to the importance of understanding the

relationship between women and men and how society influences their respective roles. From the late 1980s on, Gender and Development (GAD) approach was developed with the objective of removing disparities in social, economic, and political balances between women and men as a pre-condition for achieving people-centred development and project performance.

Much of the work in the water sector today is informed by this approach. However, there are many perspectives in this approach and no blueprint for enabling equality and equity in water resources management (UNDP, 2006). The theory asserts that women improve their position relative to men in ways that are beneficial to the community and that the state's role is to provide social services that promote women's emancipation. In this theory, women are seen as agents of change, rather than passive recipients of development (Coates, 1999). It advocates for the local, equitable participation of men and women in processes of decision making that concern development. It is in the interest of this theory that women's legal rights be strengthened and that the existing power relations in society be unsettled. It exposes and challenges the gendered power relations that perpetuate inequities. Gender analysis in this regard moves beyond the household to include the community, market, and state institutions. It uncovers differences between women, divided by other aspects of social differentiation such as class, race and ethnicity. The aim is to understand the dynamics of gender relations in different institutional contexts and thereby to identify women's bargaining position and formulate strategies to improve this.

2.6 Conceptual Framework

The conceptual framework of this study draws from the GAD theory which asserts that achieving people-centred development and project performance and removing disparities

in social, economic, and political balances between women and men should be a pre-condition. Since societies are shaped by different factors such as norms, values, attitudes and gender relations which tend to perpetuate inequities, gender mainstreaming is inevitable as it advocates equal gendered power relations. The mentioned factors are important in the determination of how gender mainstreaming should be implemented in the community as they perpetuate gender based inequalities in the community. Therefore, the conceptual framework extends on the study of variables to elaborate research problem and summarizes findings and their indicators in relation to the study objectives and reviewed literature. As illustrated in (Fig. 1), in this study, gender mainstreaming in water resources management is influenced by two major factors: socio-cultural factors which include norms, values, attitude, relationships and institutional factors which include WARIDI guidelines, policies, COWSO Constitutions and COWSO by-laws existing in entire community.

The assumptions of this theory is that, if gender mainstreaming challenges all social and cultural practices and adhered to the institutional arrangements then gendered participation in water resource management improves. This in turn leads to improved water resource access, equal participation in training and leadership as well as equal power in decision making between women and men and lead to sustainable water resource management in the study area where WARIDI projects is operating.

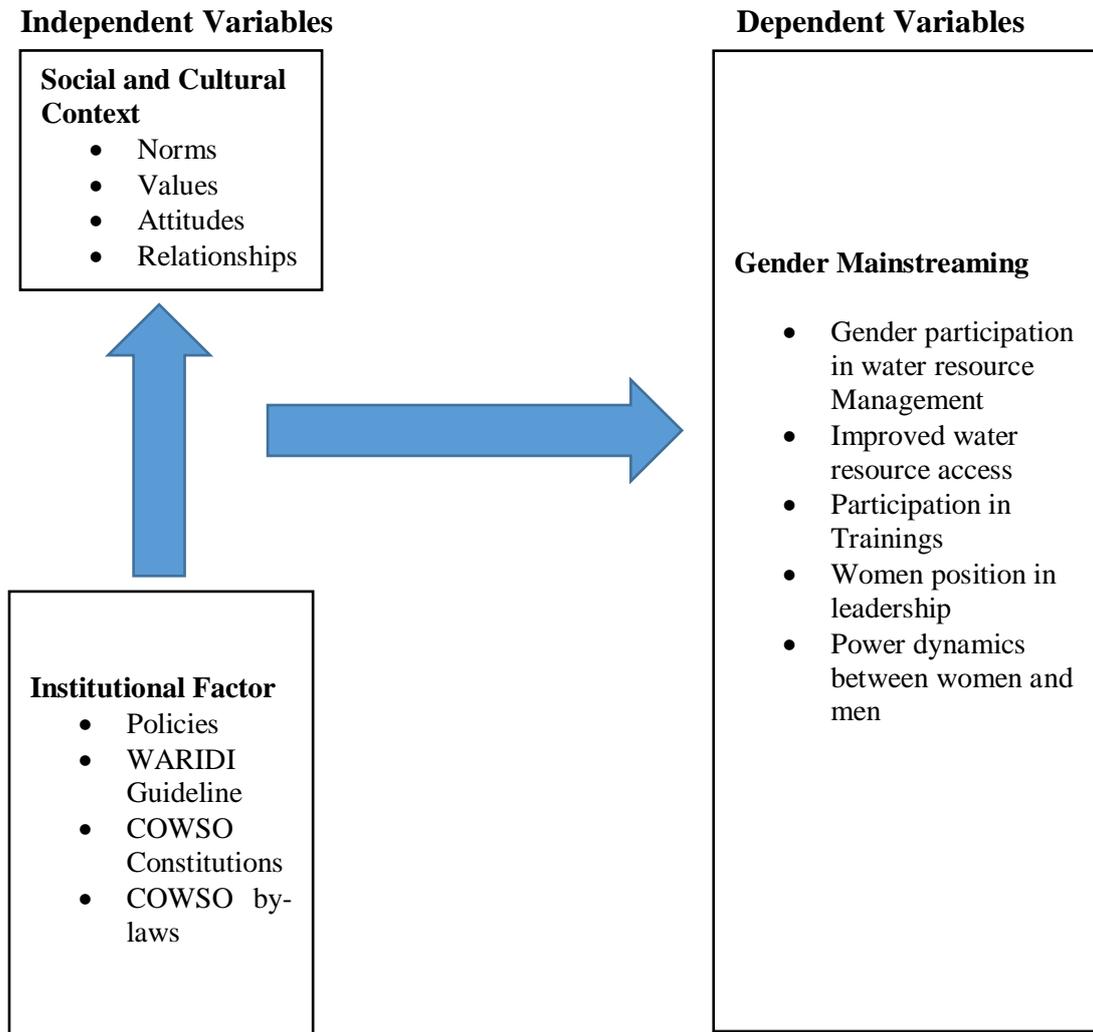


Figure 1: Conceptual framework for understanding gender mainstreaming in water resources management

CHAPTER THREE

3.0 METHODOLOGY

3.1 Study Site

This study was conducted in Gairo District in Morogoro Region. The region is located in the Eastern part of Tanzania Mainland. Gairo District is situated in the west of the region. Administratively, the district consists of 18 wards. The district altitude is between 1 076 to 1 631 metres above sea level. In 2012 national population census, Gairo District had a population of 193,011 where by 93,206 and 99,805 being male and females respectively (URT, 2012). The study was conducted in villages where by WARIDI Project is working and have long history of its existence in the district.

3.2 Research Design

A cross-sectional research design was employed in the basis that it allows collection of data from different groups of respondents at one time (Kothari, 2004). The design allows for a descriptive analysis, interpretation, as well as determination of relationships between variables (Bailey, 1978). Cross sectional design is relatively cheap, quick and effective since it uses limited resources in terms of time, funds, labour, and transport. In a cross-sectional study, the investigator measures outcome and exposure of participants at the same time; this is one-time measurement of exposure and outcome (Setia, 2016). Also, the design is useful in the descriptive analysis as it is used to determine relationships between different variables under the study.

3.3 Population, Sampling Procedure and Sample Size

3.3.1 Study population

The population for the study was all WARIDI project target communities in Gairo District. Four wards were randomly selected from the list provided by WARIDI project

and Emac-Tanzania Management in the district namely Rubeho, Chigela, Kibedya and Chakwale.

3.3.2 Sample size

The sample size for the research was 120 respondents whereby 55 females and 65 males were randomly selected from the list of beneficiaries provided by Village Executive Officer from each village. Random sampling was used to select four wards out of eighteen wards, and four villages were randomly selected from the four wards which benefit from the WARIDI project. The Four wards were Rubeho, Chigela, Kibedya and Chakwale and the villages selected were Kwipipa, Ihenje, Kibedya and Chakwale respectively. The researcher obtained lists of names of water users Associations (WUAs) which are standing as WARIDI project beneficiaries as a sub-sampling frame from the COWSO leaders. The population is detailed in Table 1.

Table 1: Study Villages and Respondents

S/N	Name of Village	Number of Female	Number of male	Total number of respondent
1	Kwipipa	9	21	30
2	Ihenje	17	13	30
3	Kibedya	11	19	30
4	Chakwale	18	12	30
Total		55	65	120

3.3.3 Sampling techniques

In determining sample size, the study used the recommended sample size determination as proposed by Bailey (1998) and Yurdugul (2008) which states that a sample size of 30 respondents is the minimum sample for data collection for research in which statistical data analysis is to be done. Similarly, Maas and Joop (2005) insist a sample of at least 30 respondents is reasonably sufficient in social science research studies to ensure normal

distribution of the sample mean. A purposive technique was used to obtain Ten (10) key informants (KIs). The list of KIs included representative from Emac-Tanzania and WARIDI project management team, 4 village leaders and 4 COWSO leaders, one from each of the four villages where data were collected. A total of five (5) Focus Group Discussions were conducted in each village (FGD). The criteria for selecting FGD participants were personal experience on WARIDI project, permanent resident of the village and being one of the project beneficiaries.

3.4 Data Collection Methods

The study was mainly qualitative in nature though some quantitative data were collected. The qualitative method was found to be appropriate given that the aim of this study was to discover how socially attributed meanings by community members influence gender dynamics in water resources management. Prowse (2010) borrowing from Woodhouse (1998) and Murray (2002) uphold that qualitative methods are good at addressing the *how* and *why* research questions, and therefore are good at capturing ways of life, which in part was the focus of this study. Both primary and secondary data were collected in this study whereby FGD, KI interviews as well as documentary review were the key methods used to collect qualitative data and pre-structured questionnaire administration were the major tool used to collect quantitative data.

a) Focus Group Discussion

FGD is method of data collection involving discussions on a given topic, of five to ten individuals moderated by the facilitator (researcher) who works to ensure the discussion is kept focused, non-threatening and with a 'natural-feeling' (Jakobsen, 2012). It is one of the best qualitative research method researchers use to understand processes as opposed to

result of a phenomenon under study (Barbour, 2007). It has been observed that for communities whose members have a tendency of 'reservation to non-community members' feel more secure when they share what is considered community sensitive issues and experience in a group rather than on face-to-face interview, since the ultimate blame, if there has to be any, will rest upon the group (and thus a group responsibility) rather than an individual person.

Five FGDs were conducted, the first four as originally planned, to collect qualitative data whereas the last one was meant to collect data that could not be collected through a resource inventory activity. Of the five FGDs, one was done with the village council (VC) (6 participants), another with village water committee (five participants) and the rest combined Water Users Association leaders (WUAs) 12 participants. The discussions were centred on various formal and traditional practices in-use by the communities for accessing, use and managing of water resources. The discussions also revolved around formal institutional arrangements in the villages for managing water resources.. Finally, FGDs provided some insights on who should be consulted for in-depth interviews, the elderly persons who are known to take care of traditional rituals and those who are clan leaders.

b) Key Informants' Interviews (KI)

In the context of this study, key informants were individuals within the Project area who were perceived by the community to be more knowledgeable (than the rest of community members) on specific issues of research interest. Key informants were envisaged to provide information related to gender roles, traditional institutions with regards to water resources management. These cultural attributes required adept individuals on history and

traditions of the community. Thus, KIs were selected through non-probability method in order to ensure persons with required know-how are involved in the study. They were suggested by participants from the earlier conducted FGDs. Specifically, KI included village leaders, WUAs leaders, persons identified as water beneficiaries, persons central to traditions of the water resources and project management.

c) Documentary review

Documentary review was used to collect information on strategies used by WARIDI project to mainstream gender in various activities, by-laws used by COWSO to manage water resources, as well as understanding leadership positions distributions among gender groups in the project. This information was gathered from project documents, COWSO constitutions, and by-laws.

d) Questionnaire

A questionnaire is an appropriate tool for collecting quantitative data in social science research (Kombo and Tromp, 2006). A semi-structured questionnaire were administered a total of 120 respondents in four villages including Chakwale, Kibedya, Ihenje and Kwipipa.

3.5 Data Processing and Analysis

Qualitative data from the key informant interviews and focus group discussions were transcribed verbatim and coded for analysis. Four levels of analysis were devised. Level one analysis was done when recording data. At this level, data from interview sessions were sorted and recorded on the basis of their themes or following research questions. Level two of analysis was done during writing, aiming at bigger picture. Qualitative data

were analysed using content analysis, paraphrasing of accounts and by making use of narratives and quotations (Kohlbacher, 2005).

Content analysis was conducted in a view to preserve meanings of phenomena as envisioned by the local community. Primarily, data that were subjected to content analysis came from the FGDs and KI interviews. The content analysis involved four stages. Stage one was done at note taking soon after conversation with an interviewee. The researcher tried to recall the entire conversation by figuring out the major themes. At second stage, a comparison was made to different interviewees' information to identify whether similar themes have been captured. For those that were similar, contents under the same themes were compared. At third stage, themes were slightly modified to merge those that appeared more or less similar and hence picking related sub themes and sub-sub themes together to the main themes as seen to fit better. And the last stage, patterns and concepts were identified and reorganized based on themes. At this stage the Harvard gender framework was used to analyse information concerning gender dynamics in water resources management institutions as detailed in Amoah (2016).

Quantitative data were analysed using descriptive statistics to show frequency distributions, maximum and minimum values, percentages and averages of social economic factors like sex, age and education to measure the level of gender main streaming in WARIDI project. As Cooper and Schiudler (2006) argue, descriptive statistics is more rigorous than exploratory research and seek to find out who, what, when and how aspects of research.

CHAPTER FOUR

4.0 RESULTS AND DISCUSSION

4.1 Social Economic and Demographic Characteristics of Respondents

These variables are very important in social science studies because they provide background information to other variables. They have important attributes to any society as they reflect societies' behaviour and capacity in decision making and its probable expected responses to questions exposed to them. A successful and sustainable water resources management relies on many factors. According to Putnam (1993) cited by Pradhan (2006) performance of any initiative is always determined by socio-economic factors. In the current study these socio-economic factors are presented (Table 2).

Age of respondents plays an important role in water resource management due to the fact that different age groups perform different sets of activities in water resources management. Overholt *et al.* (1991) hold that age can be seen as a function of knowledge and experience as well as the measure of maturity of an individual. As detailed in Table 2, majority of the respondents (90.8%) in this study were aged between 16 and 55 years. This implies that, most of water resource management activity is done by youth. Such data is consistent with the fact that older people are less active in production activities as compared to more active young people (Nanai, 1993). Discussions with FGD revealed that before the project, there was a tendency of neglecting the youth in water resources management who were considered as knowing nothing on water resources management despite their experiences in water collection for domestic purposes. Later on, the project training on gender mainstreaming indicated the importance of involving youth in water resource management for the future benefit.

Table 2: Social economic and demographic characteristics

Age of the respondent	Frequency	Percent
18 – 36	20	16.7
36 – 45	61	50.8
46 – 55	28	23.3
Above 55	11	9.2
Total	120	100.0
Education Level of the respondents		
Some primary education	13	10.8
Primary completed	81	67.5
Some Secondary	7	5.8
Secondary Completed	15	12.5
Certificate/Diploma	4	3.4
Total	120	100
Sex of Respondents		
Female	67	55.8
Male	53	44.2
Total	120	100.0

Contrary to Nanai (1993) arguments, Kajembe and Mwihomeke (2001) and Sumbi (2004) argue that old people are considered to be active and productive groups involved in many development activities including water resources management. During the discussions with traditional leaders, it was insisted that old people have more indigenous knowledge; hence they contribute effectively on water resources conservation through tree retention in their sources of water. On the other hand, they commented that younger people considered involving themselves in water resources management as losing time for engaging in other income generating activities. Again discussions with village leaders showed involvement of youth in water resource management would lead to economic benefit.

Understanding educational levels of the participants of targeted communities was an important factor in assessing their skills and knowledge about water management projects. Results (Table 2) illustrate that majority of the respondents (89.2%) had post primary education and only a few (10.8%) had some primary education. As observed by Handley

et al. (2009), education is an important parameter of the human capital that help to reduce inequality, poverty and to lay foundations for sustained economic growth, effective institutions and management of human welfare. Along the same line, Mbwambo (2000) argues that, education has direct influence on people's participation in natural resources management and promotes sustainable utilization of natural resources. The education level of respondents shows a good sign as majority of them have that basic education which is required for water resource management. During documentary review it was noted that education is an important factor in water resource management activities as pointed out in the constitution of all COWSO established in the study area. One of the requirements to be a COWSO committee member was an ability of the member to read, write, and count.

Water resources management affect both men and women in the community. As presented in Table 2, the study was composed of both men and women where women were the majority (55.8%). It was discovered that the low number of men was due to the fact that most household heads delegated the responsibility to their wives to provide water related information as issues related to water are responsibility of their wives who have to ensure water is available at their households.

During FGD discussions, participants argued that in water resources management, males play a great role in the control, allocation and distribution of water. It was also revealed that females are responsible for domestic water use. Assessing gendered participation in water resource management is relevant. This is because it is an important aspect in water resources management and it determines gender roles, relations and power balance. According to Michael (2010), water resources management is highly linked with gender where women or men conferred with certain gender roles that influence their participation

in water resource management. Gender relations and power balance influence that makes decisions and level of participation in decision making on water resource management. The study findings show that gender equality in water management aiming at improving access to water, can only be possible if both women and men are in position of decision making process. This was reinforced by two FGDs participants and one key informant, that special emphasis should be put upon active involvement of both men and women by giving priority to their needs and ideas in planning, implementation and management of the water projects in these communities. The findings concur with those of Kessy (1998) who argues that gender dimension reflects clear division of labour at the household level. The discussions with village leaders indicated that all COWSO committees in the study area comprise of 50% female representative. One of the key informants was quoted that:

“...Decision-making is mostly the role of men but if you are a women and you are mature, married and respected in the community, they listen to you, but not always.” (KI from WARIDI project)

4.2 Strategies Used by WARIDI Project to Mainstream Gender in Water Resources

Management

WARIDI project recognizes the active roles of women and men as leaders and agents of change in water resource management development and peace-building processes in organization as well as in community. WARIDI is working across three components of advancing gender equality, engaging youth and women in the governance and management of multiple-use water services (MUS), and supporting their ability to participate in and benefit from associated livelihoods. During the discussions with KIs, it was found that to ensure gender mainstreaming in water resource management WARIDI project adopted three strategies in addressing gender norms namely: Capacity building, Advocacy and action planning, and community dialogues.

4.2.1 Capacity building

During KI interview, it was revealed that Gairo's traditional norms do not allow women to speak in the public especially before men (their husbands). Therefore, the project started advocating on the importance of involving women as change agents in the water resources management because women are the ones responsible for collecting water at the household level. Additionally, during FGD at Rubeho village, it was revealed that women who speak in public can be viewed as "big-headed women," not having a point and men whose wives speak up in public sometimes are seen as not being in control of their households/families. However, one participant from the FGD said "If you see a woman speaking in public, it is the sign of the good relationship between the two couples and vice versa".

After realisation that majority of women do not have public speaking confidence even in matters that affect their life, the project carried out different trainings and workshops for the purpose of capacity building with women's groups to develop their confidence and equip them with public speaking skills and knowledge of Integrated Water Resources Management (IWRM) issues. These trainings attracted more women were trainings regardless being paid or not paid to attend as opposed to men who were likely to attend trainings effectively only if they were paid for. Therefore, to achieve this goal, the project identified social norms (household hierarchy and illiteracy) that inhibit women's participation in the implementation and management of Community Owned Water Supply Organization (COWSO) and brought them in the discussion with LGAs so that to strengthen gender integration capacity, as well as revise by-laws and administrative practices to ensure equal participation of women and men. These trainings were categorised in five sections namely administration and management, Maintenance and

Operation, Technical and financial management in COWSO. This implies that position of women and men in this section should be equal to all due to the gender roles and responsibility having in management of water resources. Awareness building helps to create a general and equal understanding of water issues, encourage good water management behaviour and create 'social norms' as well as promote local championship in water resources management.

Discussions with KI indicated that, capacity building mechanisms included the creation and/or strengthening of structures at various levels (village's structures). Exposure visits, awareness creation and training of trainers on different water resource management tools and techniques. This evidence was also confirmed during the FGD discussion as participants said:

“...WARIDI project has been mainstreaming gender in water resource management project through training and mentoring local government authorities on strategies to elevate participation of women and youth in local water governance, in line with the commitment to ensure that women and girls have a voice in decision-making”. (FGD Participants in Chakwale village)

It was further revealed that, there were positive outcomes as four constitutions and bylaws of COWSO from the study villages were reviewed and gender components were integrated. It was now clearly stated in the constitutions that there will be 50:50 distributions of all position, and that in the three high leadership position at least one should be a woman. These high leadership positions include Chairman, Treasurer and Secretary. In this context, the study findings imply that in all villages currently women are given power in one or two of the top leadership positions. For example, Kwipipa and

Kibedya villages COWSO chairperson and secretaries were women. This evidence was also confirmed during FGD discussions as one participant acknowledges being chairperson and shares how she has been transformed:

“.....I had no prior experience and knowledge of what entailed to be a COWSO chairperson.... However, through the skills and knowledge I acquired from WARIDI trainings and workshops, I am more assertive and can relate well with people” (FGD participant from Kibedya Village)

The study found out however that despite women being in these high positions, many tend to dropout from these positions due to the fact that they have to seek consent from their husbands.

4.2.2 Advocacy and action planning

It was reported by the KIs that at the project level advocacy and action planning involved community leaders and LGAs officers to catalyse and support changes in social norms. These leaders are supposed to ensure equitable resource allocation; periodic publications, social media, gender desegregation data and analysis in water resources management are done. They are also responsible in establishing gender sensitive indicators for measuring the impact of gender integration in water resources management and lastly ensuring all COWSO action plans are gender responsiveness. During FGD in Kibedya village, it was revealed that WARDI project disseminated best practice to show decision makers how things could have improved and organised. Also, sensitisation campaigns was done for both decision makers and communities emphasising on the importance and benefit of complying with gender mainstreaming in by-laws and rules governing water resources in village.

4.2.3 Community dialogue

During the KI interviews, it was found that community dialogues were meant to bring together different segments of the community to discuss and to transform social norms with a critical mass by providing posters, leaflets and training manual to the community members and COWSO leaders. It was also reported that, other purpose of the dialogues were to find out how leadership is engendered and then identify gendered roles and responsibilities existing between women and men. During the FGD in Ihenje village, participants revealed that dialogues in relation to gender created awareness among community members and COWSO leaders not only in water resources management but also in other segment of the social life. It was also revealed during the KI interviews that the WARIDI project has gender strategy and guideline that facilitate and support gender mainstreaming activities in the project activities. The project through gender mainstreaming strategy and guideline established gender unit which lead to appointment of Gender Focal Person. As a result of this strategy, the study found three departments in WARIDI project headed by female staff whereby one of them being head of gender department. This evidence was also echoed during FGD discussions as one of the participants said:

“....WARIDI project staff were very kin in implementing gender mainstreaming strategies to ensure gender equality by empowering women and youth as group which play key role in the progress of managing water resources” (FGD Participant from Ihenje Village)

4.3 Gender Relations in Institutional Arrangements for Water Resources

Management

In this study, both existing formal and informal institutions were identified (Table 3). During FGD in Ihenje village, it was pointed out that the existing formal and informal institutions have their roles which govern water resources management. For the purpose of

this study, institutions in water management are those organisations and stakeholders at the national and local levels that enable effective and efficient provision of water services in the study area. These may be in the form of district authority, village water committees, and community-based organizations (CBOs) or water user groups which are considered to be formal institutions while the informal institutions were norms that guide traditional leaders and rituals sites in making decisions.

During the KI interviews, it was found that informal and formal institutions only differed in implementing water resources management. The formal institutions were reported to be more powerful on all sources of water whereas informal institutions are only powerful on natural sources of water. Another difference was noted on the composition as formal institutions constitute both women and men while informal institutions are formed by only men. These differences in implementation are based on guideline and rules governing them.

Table 3: Formal and informal institutions' roles and interests in Gairo

SN.	Actor	Roles	Interests
1	COWSO Water Users Assembly	Collective decision making e.g., approving the amount of land to be established	Managing water resources sustainably for the future generation
2	Village Councils	Representing villagers in all matters pertaining to the villagers' wellbeing.	Making sure villagers' rights are protected
3	COWSO Committee (Authorised Association)	Managing, owning water resources on behalf of the villagers. Acts as a power broker between the villagers and the central government agencies and local government	Ensuring that water resources are owned by community and benefits are realised
4.	Traditional Leaders	Enhancing traditional rituals, norms and taboos, Responsible for organising rituals in the source of water where traditional forest obtained. Punish those who go against village traditional norms through warnings or fines	Making sure all traditional beliefs is maintained and working in context of water resources management.
5	District Council	Oversees the management of the Water resource Registering COWSO	Making sure water is conserved;
6	Non-Governmental Organisations	Facilitating establishment of COWSO	Conserving water resources and ensuring increase of protected landscape

Source: Emac-Tanzania, 2017

During FGD with village council members in Ihenje village, it was revealed that in local context the strongest formal institutions were COWSO committee. These committees are given power by central governments to manage water resources. It was also noted that the powerful informal institutions are traditional leaders. During KI interview, it was reported that there is divergence in interest and power is considered to be one of the major causes of struggle in management of water resources between formal and informal institutions. The study found that formal and informal institutions are very powerful depending on the nature of sources of water. For example, in study area, traditional leaders are very

powerful in the sources associated with natural water such rivers and natural springs while COWSO organisation are very powerful in community managed water project like piped water and community managed water kiosk.

Despite the fact that the chiefdoms in Tanzania were abolished in 1961, traditional leadership was found to be practiced and effective in the study area. These include elders who are very conversant with traditional rituals, norms, taboos and initiations that lead and direct various traditional activities in the society. It was also found that youths and members who belong to some religious groups and statutory village have a deviant behaviour towards these traditions institutions. This is due to the fact that traditional institutions are not officially recognized by the formal organizations, sometimes referred to as backward or primitive way of life. It was further found that, there is somewhat a mismatch between formal organizations and traditional institutions to the extent that the former was found to slowly weaken the latter. The major purpose of WARIDI gender mainstreaming strategy was to make sure that both formal and informal institutions work together on equal basis particularly on integrating gender groups in water resource management. It was however found that there is conflict of interest between the two, to the extent that in some areas informal institutions tend to dictate women's power in decision making. This implies that WARIDI project should put more efforts in gender integration especially in water resource management in the study area to remove some traditional beliefs which deny women's roles in leadership.

During FGD in Chakwale village, it was found that majority of participants were found to be aware on the qualifications to be COWSO beneficiaries whereby any of; small informal and formal Water User Groups, individual or groups of irrigators, pastoralists and representatives from other user of water. During KI interview it was found that, COWSO

leaders were responsible for promoting fair water sharing among their members; drafting and enforcing water use rules in accordance with their constitutions; and providing support in water resources management at the local level. This coincided with water policy and act which says COWSO are entities which manage and conserve water resources at the lowest level in community (URT, 2009).

4.4 Gender Dynamics in Water Resource Governance

4.4.1 Gender roles in collection and uses of water

The study sought to establish the position of both women and men in water resource management in terms of collection and use. The findings from FGD in all study villages indicate that women and girls were the major water collectors, users and managers at home. For instance, one of the participants was heard saying;

“.....Going to the water sources daily increases my knowledge and experience on where to find water and know how to store water in the house” (Female Participant from FGD in Kibedya village).

The quotation place woman at an appropriate position to be included in water resources management based on knowledge on key aspects of water management. Also, discussions with project team revealed that women are the major promoters of household and community hygiene and sanitation activities. This finding reflects Mdende's (2009) observation that women spend an average of 375 to 508 minutes while men spend about 25 to 150 minutes per day during dry season for fetching water.

It was further found that Chakwale village has been experiencing water use and management problems among different groups. For instance, in the dry season when there is water scarcity, high competition occurs between livestock keepers, domestic users and irrigators. During this period women face more difficulties in accessing water due to the

fact that men have power to control the resources for animals and irrigation activities as compared to women fetching water for domestic use. Both KI interviews and FGDs revealed that most of women both elderly and young ones mainly use water for domestic purposes. In one of the FGDs, one participant reported that:

“.....Women spending many hours in collecting water for domestic activities which give them good experience on water resources availability, needs and management, due to that there is need to integrate gender in water resources management so as women and men can share the experience and knowledge gained from water collection and uses” (FGD participant at Ihenje village).

Similarly, it was revealed that, traditionally, Tanzania societies perceive men as the one responsible for looking after the family, providing meals and other household needs hence render the role of fetching water to women. For example, one of the KI participants narrated;

“...Men here at Gairo are involved much in water collection for business purpose that fuelled by water scarcity problem in the area (KI participant from EMAC-Tanzania).

These findings concur with study done by Lusuva (2009) who observes traditionally men are responsible for productive uses of water, mainly for crop production while women also need water for production but their priority is domestic use of water.

4.4.2 Water source management

The study also thought to establish the sources of water in the area. Although there are different sources as presented in (Table 4), it was revealed that community managed water kiosks as the main source of water in the study area. The availability of community managed water kiosk was reported as the strategy that helped to reduce women’s burden of collecting water for domestic use. This was reported by participants from FGD in village of Kibedya and Kwipipa whose says.

“.....Water source is and remains highly stereotyped, although development projects on water management are supposed to change both behaviours and concepts in water uses and water users.” (FGD Participant in Kwipipa Village)

Table 4: Main household source of water

Source of water	Frequency	Percentage
Community managed water kiosk or points	84	69.7
Bore holes	28	23
Rain Water	6	5.3
River	2	2
Total	120	100

The study also noted that there are power dynamics between women and men in managing these sources of water resources. This happened because community consider some sources of water as open access and common pool resource. It was further discovered that, these power dynamics tend to vary according to type of sources of water and seasons (wet or dry). For example, it was reported that women have more access and control of community managed water sources like water kiosk or selling point than natural sources such as natural spring and rivers which are governed by traditional norms, normally traditional leaders. As one of the participants claimed;

“.....Gender relation in managing water sources tend to vary according to the nature of sources of water available within the entire community because women have limited control on natural sources due to traditional beliefs” (FGD Participant in Chakwale Village)

Thus based on the findings, it is obvious that differences in power dynamics in the study area creates gender inequalities between women and men in managing water resources source. We have seen that women are not allowed to control natural sources of water governed by traditional norms and taboos which normally favours men who are traditional leaders.

4.4.3 Payments for water services

The current government policy initiatives have emphasized cost-sharing arrangements as an important part of demand-based approaches (Water Aid, 2014). User payments towards the provision and maintenance of water facilities are thought to ensure commitment of users to proper use, to give the users a sense of “ownership” over the facilities and to overcome dependency attitudes generated by the provision of water supplies by State or development agencies. According to the World Bank Group (2015), women have expressed high levels of “willingness to pay” for improved water supplies which is an indicator for a greater commitment to sustainable use and management of water sources.

When the respondents were asked their willingness to pay for the water services from available source, majority (93 %) were willing to pay once the water is collected from community managed water point (Table 5). The study further found that depending on the availability of water which varies seasonally, there is price variation which ranges from TZS 50-100 per bucket of water. The study also is in agreement with the World Bank Group (2015), as it was noted that women are more responsible for payment of water bills because they are responsible for domestic works than men do.

It was revealed that when the women run short of money for water bills and men who are obliged to pay are not willing to pay, women opt to get water from other sources which are free though far from the homestead.

Table 5: Payment of water bills

Payment water bills	Frequency	Percent
Yes	112	93
No	8	7
Total	120	100

It was also found that some members of the community take advantage of paying for water services to maximize their profit by supplying unsafe water from natural sources at a minimal price. For example this KI had this to say;

“...The people supplied with water at a fee may be tempted to compromise the need to collect quality water by fetching in unsafe place and sell to people in order to maximize profit” (KI Female,)

As explained before, water policy emphasized cost-sharing arrangements as an important part of demand-based approaches by establishing Community Owned Water Supply Organisation (COWSO) in the villages implementing water projects. This happened so as to overcome dependency attitudes generated by the provision of water supplies by state or development agencies.

4.4.4 Membership of men and women in COWSO

Table 6, gives a summary of how the compositions of committee members were before and after WARIDI project. It was revealed that before the project there was no criteria which could make women and men's have equal chance to be registered as members in water institutions like COWSO. This happened due limitation roles, the patriarchal culture forbids and excludes women from attending water meetings, as well as stereotypical characters that tend to privilege men's representation. This evidence was also confirmed during FGD discussions as participants said:

“....Before the project men had has a lot of power here and women were not valued when decisions are being made. Traditionally, men are the heads and women only follow” (FGD participant from Kwipipa Village)

Table 6: Number of women and men representative before and after project in COWSO committee

Project Village	Before Project			After Project		
	No. Female	No. Male	Total	No. Female	No. Male	Total
Ihenje	3	7	10	6	6	12
Kibedya	1	10	11	6	6	12
Chakwale	4	8	12	6	6	12
Kwipipa	3	9	12	6	6	12

Source: WARIDI 2018

It was found that the WARIDI project made customary changes mainly in two areas, firstly was transforming the mindset of the community members to value the contribution of women, and there after reviewed constitutions and bylaws which categorically stated the criteria of who can be registered to be a member of COWSO in village.

Although, the changes did not come overnight as it was reported some men denied their wife rights to register as members in those committees. For example, in the household when men had already registered in the association women were restricted to registered.

“...Woman needs her spouse’s or a male guardian’s permission to participate and most of the time do not support the women participating in such positions and activities” (KI Participant from WARIDI Project)

It was also discovered that the central government intervened at some point insisting on the need for formulating constitutions and bylaws. As a result, in all the villages under study had equal gender representation in COWSO committees.

Although we have witnessed an equal representation, one is convinced to argue that this is a result of circumstantial necessity or coercion by the males as we noted that women are being biased and some of them drop out of the leadership positions. This argument manifest Mollinga (2015) observation that the existence of patriarchal societies in Tanzania and criteria of membership in water user association (COWSO) are male biased.

4.4.5 Distribution of leadership positions in COWSO committees

The COWSO leadership structure is comprised of chairman, vice chairman, secretary, vice secretary, treasurer and pump-caretakers (Table 7). Each position had some specific roles to be played towards the effective management of the water project (E-mac Tanzania, 2017 and COWSO Constitutions, 2018). According to the project baseline report, before

WARIDI project, women in COWSO committee in the study area were holding less powerful and supportive positions as opposed to men who held more powerful positions, such as chairman, vice chairman, and secretary. This was also confirmed by one-man participant from FGD as follows;

“...A man commented in a jovial manner; giving the treasury position to a male will mean giving him the opportunity and power to take more girlfriends. We cannot take such risks” (FGD Participant from Chakwale village)

It was discovered that, although women were allowed in high leadership position by COWSO constitutions it was contrary to the traditional leadership norms where women are not allowed to be leaders. The selection of women in those position was influenced by the COWSO constitutions and by-laws that emphasising involvement of all sex in management by half-half. However, it was discovered that even though women are largely represented in water resource management, they still face some challenges in access these position and sometime not allowed to make decision regarding some component of water resource management such technical aspect, maintenance and operation aspects. It was also found that, within communities, women who take up leadership positions are sometimes stigmatized and ostracized by powerful members of the community. The participation and leadership of women requires significant input from them in terms of time, labour, skills, and resources.

On the other hand, the study further found that treasurer position was mostly held by women because of the historical and tradition belief that women are faithful and trustworthy when keeping money as opposed to men. This is supported by many participants in FGD in a following quote;

“...When the women are given the role of keeping the money, they are good in proper use of funds such as the routine maintenance, and even if it breaks down there will be funds to do that. They are much more concerned, so when they are put in those positions its better.” (FGD Female participant, Ihenje).

Table 7: Distribution of leadership positions in COWSO committees

Village	COWSO Name	Position	Sex of the holder of the position
Chakwale	KIMACHANG’OSA	Chairman	Male
		Secretary	Male
		Treasure	Female
Kibedya	Kibedya water user association	Chairman	Female
		Secretary	Male
		Treasure	Female
Ihenje	Ihenje water user association	Chairman	Male
		Secretary	Female
		Treasure	Female
Kwipipa	Kwipipa water user association	Chairman	Female
		Secretary	Female
		Treasure	male

The study further noted some challenges associated with COWSO leaderships include unlimited term of service. It was observed that a person can be re-elected for more than two terms for the same position. Also, lack of bank account, not charging water users and having no receipt book were reported as some challenges along wrecked, or non-functional, water points. These challenges however were related to poor men leaderships as where they had a woman chairperson everything was in order.

The study observed that patriarchy system still orders relations between sexes and between generation and specific line. According to the study done by Tagutanazvo *et al.* (2014), patriarchy system divides water resource management into masculine and feminine sphere and into decision making circles, with men holding most power. This is also reflected in

Naiga *et al's* (2016) explanation that women are given a low level of verbal participation in decision-making, despite their responsibilities as water managers. Such a low level of participation, according to Asaba (2015); led to project failure as women on the committees may not be able to influence decisions.

4.4.6 Power dynamics in decision making within COWSO Committees

There are power struggles between women and men when making decision in management position, and often women voice is not listened regarding water resource management (E-mac Tanzania, 2017). This further considers ownership of resources and assets and how power relates to roles, responsibilities, and opportunities between men and women. The study reveals that, unequal power relations and the ability to access resources between women and men are influenced by historical, societal, economic, religious and cultural realities.

During the KI interview with COWSO and village leaders, it was revealed that when community handed over their responsibilities to the COWSO authorised association their expectation were to have control over the water resource. This has been associated with the institutional and strategic powers possessed by women and men as it was reported by one key informant.

“...Women have larger role in decision-making on water resource than it has historically been the norm” (KI, WARIDI project).

It was found out that although women are in high leadership position of water management associations; there are some circumstances where they cannot speak up in front of men. There are a few women who do raise their voices, however, in rare cases. It

was also reported that traditionally in Gairo District men are too talkative especially in the mixed groups of men and women in the existing power structures. Although there are some women who also have power to speak more than men do, they are restricted by taboos. Along the same line, the study found that community members generally believe that men have better leadership skills, because traditionally they are the head of the household and they are expected to be responsible. This perception however has been worked upon as it was learnt that the project strived had to increase women participation that lead to greater equity, enhance women's status and increase women's voice in decision-making in general through increased self-esteem and self-confidence.

4.5 Constraints Facing WARIDI Project in Integrating Gender in Water Resources

Management

The study also solicited the challenges that the project might be facing in the study area. It was found that traditional norms and practices constitute a major constraint for women to enter the public arena and specifically perform their decision-making roles effectively in the COWSO. These traditional norms and practices were found to originate in deeply rooted socially constructed roles that heavily favour men, thus creating a strongly male-dominated society. The traditional notions of participation are worked out through patronage systems and kinship structures which put women far down on the class hierarchy. Moreover, Grant, (2017) argued that traditional gender roles have vested water resource managerial and administrative roles to men while women and girls are burdened with the role of collecting, managing and maintaining communal water supply, regulating and controlling its social use and safe maintenance. It is within such unequal set-ups that women were found to be socially and culturally constrained from performing their decision-making role in water resource management. It was also found that women are

supposed to be submissive. This is because women roles are viewed with domestic lenses rather than in the light of community development and decision making in water resources management.

Another constraint is associated with entry and exit strategies used by WARIDI project. It was revealed that entry and exit strategies were directly attached to male and female who are elite, famous and commonly beneficiaries of every project coming in their villages. This situation makes the possibility of WARIDI project more questionable in the study area because no new entrants in the project leaderships than those usually used by each project in the village. Experience from Ihenje show that many of those elite women are political leaders or are members of Village Savings Loans Associations (VSLA) and hence they have economic power. At the same time if it happens that a poor woman has to be elected in the committee, she must seek permission from the husband.

CHAPTER FIVE

5.0 SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Summary of the Study

This study seek to ascertain strategies used by WARIDI project in mainstreaming gender in water resource management project. The study established that the project employed and adopted three strategies in addressing gender mainstreaming namely: Capacity building, Advocacy and action planning, and community dialogues.

Also the study evaluated institutions arrangement in water resources management project. It was found that both formal and informal institutions exist in the study area. However the two differed in how they operate and their composition where the informal was predominantly male.

Further, the study examined existing gender dynamics in water resource governance in Gairo District. First, the study sought to establish the position of both women and men in water resource management in terms of collection and use. It was found that women and girls were the major water collectors, users and managers at home. Also we solicited to establish sources of water in the study area, and it was found that there are different sources but community managed water kiosks were the main source of water.

On the payment for water services the study found out that women are more willing to pay for better water services as opposed to men. Furthermore, the objective looked at the membership and leadership roles in water committees, it was established that after the project both men and women stood an equal chance of both membership and leadership. However, it was noted that women leaders are sometimes stigmatized by the community.

Lastly, the study assessed constraints of integrating gender in water resources management at project and community level. Several challenges were identified which include; on the community level, the main challenge was traditional norms and practices which deny women some power in public such as decision-making roles. At the project level the challenge was associated with entry and exit strategies used by WARIDI project. It was revealed that entry and exit strategies were directly attached to male and female who are elite and famous leaving the rest non-beneficiaries of the project.

5.2 Conclusion

Given the findings, it can be concluded that efforts by WARIDI to mainstream gender has been partially successful. Availability of gender guideline, strategy and gender specialist who was specifically overseeing the gender integration and practices in water resources management project did not help the project to achieve good results. This is because despite the efforts to mainstream gender in water resource management yet, it was found that gender inequalities continue to persist due to the fact that there are social norms and taboos that restrict women's control over natural sources of water especially during rainy season where river and natural spring becomes more source of water.

Measuring gender mainstreaming strategy by gendered participation, the project used the number of men and women involved in water resource management positions. Thus it can thus be concluded that the project register a success. The successful gender mainstreaming in water resource management project were highly influenced by the training and mentorship strategies used by project to implement gender integration.

Although women's role in water resource management is recognized by the community and the project, yet implementation of methods and strategies to get beyond gender-based

obstacles for women's equal participation in water resource management related projects remain vague. Women are perceived as a natural reflection of their responsibilities for the household and the comfort and security of future generations rather than change agents for project sustainability.

Gender mainstreaming helped to enhance the knowledge and experience of women and men in water resources management project but did not challenge the traditional power structures in the study area. Therefore, with no doubt it can be concluded that performance of the project had achieved gender integration but not gender mainstreaming.

5.3 Recommendations

On the basis of the results, discussions and the conclusion, the following he study give recommendations in order to achieve gender mainstreaming in Gairo District for improved water resource management implemented by WARIDI project.

First and foremost, we recommend that since gender mainstreaming is about ensuring that in every component of the project gender issues are taken into consideration whereby all beneficiaries' needs are addressed by the project to avoid inequalities. WARIDI should conduct more training on what is gender mainstreaming, gender equity and equality in water resource management in the district.

Also, given the influence of traditional institutions on water resources management and gender dynamics within it, the study recommends the project stakeholders (project beneficiaries, WARIDI project and EMAC Tanzania Management and district councils) to formalise traditional institutions in water resources management as an important partner in the community development for project sustainability.

Further, given the on-going wake up call to recognizing participation of communities in managing natural resources that surrounds them, the role of traditional institutions in water project management cannot be taken as an over thought. Therefore, WARIDI project and the district authority need to give the traditional institutions special acceptance and collaborate with them in protecting water sources in rural areas.

Taking into consideration that women are important agents in water resource management but faced with a number of challenges such as patriarchal systems which renders them triple roles in the family including, fund management at project level and faithful in paying water bills than men do, the study recommends to government especially Ministry of water, NGOs dealing with water resource provision and management, policies makers to make sure sex stigmatization does not exist in water projects.

Lastly the study recommends to WARIDI project to build the capacity of women and men through gender awareness and sensitization programs and mentorship to enhance their ability and participation in water resource management without perpetuating gender inequalities. This will equip them with ability to make informed and right decisions in water resources management regardless of their sex orientation.

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5. Year of schooling.....

6. Main occupation of the household head

SN	Main Occupation	Tick applied
1	Crop production	
2	Livestock keeping	
3	Small scale business	
4	Salaried employment	
5	others (<i>Specify</i>)	

SECTION B: WATER SUPPLY BEFORE AND DURING THE PROJECT

7. What were the sources of water before that project?

SN	Sources of water	Tick applied
1	River/stream	
2	Piped	
3	Hand pump	
4	Un protected dug well	
5	Bore holes	
6	Community Managed water kiosk or Point	

8. Are you paying monthly bill for water services available? 1. Yes 0. No

9. Do people carryout economic activities around water sources? 1. Yes 0. No

10. What type of economic activities being carried out? 1. Farming activities [] 2. Keeping animals []

11. Are those mentioned sources of water still existing 1. Yes 0. No

12. What is the walking distance from homestead to water sources

13. What is the mode of transport most commonly used by the HH to reach destination

SN	Means of transport	Tick applied
1	Walking	
2	Bicycle	
3	Ox-cart	
4	Motorized Transport	
5	Other specify	

14. Who is mostly primary responsible for fetching water

1. Man 2. Women 3. Son 4. Daughter ()

15. What is the trend of the condition of the past 10 years in your village?

1. Increasing 2. Decreasing

16. What do you think might be the reason for such a trend?

1.....2.....3.....

SECTION C: VILLAGE GOVERNANCE STRUCTURE OF WATER PROJECT MANAGEMENT

17 Is there any informal institution in your village which governing water resources

1.Yes 2.No

18. If the answer is **YES** in question 15 above, list these informal water institutions in table below

S/N	Name of informal institution	No. of women	No. of men
1			
2			
3			

19. What are responsibilities of informal water institution in governing water resources

SN	Responsibilities	Tick applied
1	To operate and maintain water project	
2	To collect water bills	
3	To conduct meeting on water project	
4	To inform community on project progress	
5	To protect water sources and infrastructures	
6	Other specify	

20. Is there any formal institution in your village which governing water resources 1.Yes

2.No

21. If the answer is **YES** in question 18 above, list these formal water institutions in table below

S/N	Name of formal institution	No. of women	No. of men
1			
2			
3			

22. What are responsibilities of formal water institution in governing water resources

SN	Responsibilities	Tick applied	By whom 0. Male 1. Female 2. Both
1	To operate and maintain water project		
2	To collect water bills		
3	To conduct meeting on water project		
4	To inform community on project progress		
5	To protect water sources and infrastructures		
6	Other specify		

23. Does the village have by laws and regulations for water sources protection? 1. Yes 0. No

24. If yes can you explain anything you know about these laws and regulations?

.....

25. If yes can you explain how the bylaws and regulation stated issue gender roles in water project management 1.....2.....3.....

26. What is the level of performance of the water governance structure in your village?

1. Very good []

2. Good []

3. Bad []

27. Do all women and men get equal access to water service 1. Yes 0. No

28. Is there any member (s) of your household in water governance committee 1. Yes 0. No

29. If yes who in your HH is member of Water governance committee 1. Man 2. Women

30. Do you feel comfortable speaking up in public to help decide on community development work especially water services 1. Yes 0 No

31. Do women also speak up in public concerning water services available 1. Yes 0. No

SECTION D: GENDER AND WATER PROJECT PERFORMANCE

32. Do you think involvement of women and men in water project contributes to the performance of water management projects? 1. Yes 0. No

33. If yes/no, please explain _____

34. On a scale of 1-10 (10 being the highest), rate the influence of women and men on water project performance.

35. In the past six months, has your household accessed the information about performance of water project? 1. Yes 0, No

36. If yes who most access the information water project performance 1. Man 0. Women

37. Did you participate in any gender integration training for the water management project?

1. Yes 0. No

38. Do women and men take part in monitoring of activities they jointly carry out?

40. Do women and men take part in monitoring of activities they jointly carry out?

41. Are there still barriers related to how communities look the role of women and men in water management 1? Yes 2. No

42. If Yes in 38 list these barriers

1..... 2..... 3.....

43. To what extent participation of women and men add substantial value of improving water management

1= Not at all	2= Slightly	3= Somewhat	4= Moderately	5 =Very

44. To what extent do women and men perform the same activities in water resources management?

1= Not at all	2= Slightly	3= Somewhat	4= Moderately	5 =Very

45. To what extent water resources allocation process is equitable enough to women and men

1= Not at all	2= Slightly	3= Somewhat	4= Moderately	5 =Very

46. to what extent did custom and norms limits the involvement of women in water resources management

1= Not at all	2= Slightly	3= Somewhat	4= Moderately	5 =Very

SECTION E: INVOLVEMENTS ON WARIDI PROJECT

47. Do you know about WARIDI Project? 1. Yes 0. No

48. If yes describe what WARIDI project does in your village

1.....2.....3.....

49. is there any member of your HH participated in WARIDI project activities 1. Yes 0. No

50. If yes which household member participated most in the project? 1. Man 2. Women

51. Do women and men participate equally in the decision-making process in water management performance 1. Yes 0. No

52. Does WARIDI project increases number of women to participate in water governance committee 1. Yes 0. No

53. Does WARIDI project increases knowledge of people (Communities) on how can manage the available water project? 1. Yes 0. No

54. Is there any difference on the capacity of community members to manage their water resources before the WARIDI Project? 1. Yes 0 No

55. Is there any change in distribution and proper utilization of water resources for domestic purposes and economic activities after WARIDI Project? 1 Yes 0. No

56. Is there any good or bad thing do people use to refer to WARIDI project? 1. Yes 0. No

57. If yes List All.....

Thanks for your cooperation and time

Appendix 2: Interview Manual for Focus Group Discussions

Re: Participation in a Study on gender integration and water resource management project performance. Case of water resource integration development initiatives project in Gairo district, Tanzania.

Part 2: Questions

1. What are the main source of water in this area and what are major use of water?
2. What is the water situation at the moment in the area?
3. How these water sources managed?
4. Are there any water management project implemented in this village previous time or now?
5. Are there any existing water committee/Association or institutions in this village **(list all)**?
6. How is the involvement of women and men ensured in water resources management in this village?
7. Are there any informal institution managing water resources in this village **(list all)**?
8. Are there any rules, regulations and bylaws which influence gender integration in water resources management in this village?
9. How WARIDI project facilitated the involvement of various gender groups in water resources management in this village?
10. To what extent did participation of women and men in water resource management influences project performance
11. What is the number of M/F in various positions, what are their roles and responsibilities and what are their job specifications?
12. Are there norms and taboos which affect women and men to participate in water resource management project
13. How WARIDI project influencing the involvement of women and men in water resource management
14. What are strategies to ensure there is equal participation of women, youth and men in management of water resource.
15. Identify the challenges which constraining gender mainstreaming in water resources project.
16. What can you say about the success of the project on involving women and men in water resources management?

Appendix 3: Checklist for Key Informants

A. Non-Governmental Organisation (WARIDI Project)

1. What is the primary objective of the organization?
2. For how long WARIDI project has been operating in Gairo district?
3. What is the water situation at the moment in the area?
4. Identify key institutions is governing water resource in this area
5. What are strategies used by your organization to mainstream gender in water management project?
6. In your view, what is the importance of involving women and men in water resources management?
7. What would you say are the water need and use for women and men and how does that influence water resources management and gender relation?
8. What are social and cultural factors governing access to water and water management here?
9. Please identify challenges which constraining gender mainstreaming in water resources management?
10. What can you say about the success of the project on gender mainstreaming in water resources management?

Appendix 4: Checklist for Key Informant Local Leaders (Village Leaders)

1. What are the main sources of water in this area and what are major uses of water?
2. What are the Perception /altitude towards gender integration in water management project?
3. What are existing Local institutions and other groups dealing with water management project
4. What do you think is the importance of water management resources and gender relation?
5. To what extent of women and men involvement in water management project
6. Who do you think is responsible for water resources management men and women