



**PUBLIC PARTICIPATION AND SUSTAINABILITY OF WATER SOURCES IN  
KIGUMBA SUB COUNTY, KIRYANDONGO DISTRICT IN UGANDA**

**BY**

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## DECLARATION

I, **Ogwang Adar Denis**, hereby declare that this dissertation is my original piece of work and has never been submitted for the award of any degree in any university/institution of higher learning.

Signature: .....

Date: .....

**APPROVAL**

This is to certify that this dissertation was done under our supervision and now ready for submission for the award of master's degree of Management Studies (Public Administration and Management) of Uganda Management Institute.

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## **DEDICATION**

This dissertation is dedicated to my parents; Mr. Lawrence Brown Adar and Mrs. Betty Adar whose encouragement, guidance and support inspired me to pursue Masters' Degree studies.

## **ACKNOWLEDGEMENT**

Research tradition allows us to acknowledge the inadequacies in ourselves. I would like to acknowledge the possibility of all my research activities through strength and wisdom from God. I greatly thank God for the gift of life and good health. God has shown his unending love and presence in my life through this research. I am also greatly indebted to my supervisors, Dr. Kugonza Sylvester and Mr. Felix Andama Adiburu whose guidance and continuous encouragement were priceless throughout the research process. May almighty God bless you!

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## TABLE OF CONTENTS

DECLARATION .....	i
APPROVAL .....	ii
DEDICATION.....	iii
ACKNOWLEDGEMENT .....	iv
TABLE OF CONTENTS.....	v
LIST OF ABBREVIATIONS AND ACRONYMS .....	xi
ABSTRACT.....	xii
<b>CHAPTER ONE: INTRODUCTION.....</b>	<b>1</b>
<b>INTRODUCTION .....</b>	<b>1</b>
1.0 Introduction.....	1
1.1 Background.....	1
1.1.1 Historical background.....	1
1.1.2 Theoretical Background.....	3
1.1.3 Conceptual background .....	4
1.1.4 Contextual Background .....	5
1.2 Problem Statement.....	7
1.3 Purpose of the Study.....	8
1.4 Objectives of the study .....	8
1.5 Research Questions.....	8
1.6 Research hypotheses .....	8
1.7 Conceptual Framework.....	9
1.8. Scope of the study.....	10
1.8.1 Content scope.....	10
1.8.2 Geographical Scope .....	10
1.8.3 Time Scope .....	11

1.9 Significance of the study.....	11
1.10 Justification of the Study .....	11
1.11. Operation definition of key concepts.....	12
<b>CHAPTER TWO: LITERATURE REVIEW.....</b>	<b>13</b>
<b>LITERATURE REVIEW .....</b>	<b>13</b>
2.0 Introduction.....	13
2.1 Theoretical review .....	13
2.2. Actual review .....	15
2.2.1 Public participation in planning and sustainability of Water Sources .....	15
2.2.2 Public participation in implementation and sustainability of Water Sources .....	18
2.2.3 Public participation in monitoring and sustainability of Water Sources .....	21
2.3 Summary of Literature Review.....	23
<b>CHAPTER THREE: RESEARCH METHODOLOGY .....</b>	<b>25</b>
<b>RESEARCH METHODOLOGY .....</b>	<b>25</b>
3.0 Introduction.....	25
3.1 Research design .....	25
3.2 Study population .....	25
3.3 Sample size, selection and procedure .....	26
3.4 Sampling techniques .....	27
3.5 Data collection methods.....	27
3.5.1 Key informants Interviews.....	27
3.5.2 Questionnaire method.....	27
3.6 Data collection instruments .....	27
3.6.1 Interview guide .....	27
3.6.2 Questionnaire .....	28
3.7 Pretesting (Validity and Reliability) of research instrument .....	28
3.7.1 Validity. ....	28

3.7.2 Reliability.....	29
3.8. Procedure for data collection .....	29
3.9 Data processing.....	30
3.10 Measurement of variables .....	30
3.11 Ethical considerations .....	31
<b>CHAPTER FOUR.....</b>	<b>32</b>
<b>DATA PRESENTATION, ANALYSIS AND INTERPRETATION OF FINDINGS .</b>	<b>32</b>
4.0 Introduction.....	32
4. 1 Response rate .....	32
4.2 Background characteristics .....	32
4.2.1 Gender of respondents .....	33
4.2.2 Age group .....	33
4.2.3 Type of water source provided .....	34
4.3 Empirical findings.....	34
4.3.1 Sustainability of water sources .....	35
4.3.2 Participation in planning and sustainability of water sources.....	37
4.3.2.1 Public participation in project planning and sustainability of water Sources.	41
4.3.3 Participation in implementation and sustainability of water sources .....	43
4.3.3.1 Public participation in implementation and sustainability of Water Sources.	46
4.3.4 Public participation in monitoring and sustainability of water sources.....	47
4.3.4.1 Public participation in project Monitoring and sustainability of water Sources	
.....	50
4.3.5 Multiple regression analysis .....	51
<b>CHAPTER FIVE: .....</b>	<b>53</b>
<b>SUMMARY, DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS.....</b>	<b>53</b>
5.0 Introduction.....	53

5.1 Summary .....	53
5.1.1 Public participation in project planning and sustainability of water sources .....	53
5.1.2 Public participation in implementation and sustainability of Water Sources .....	53
5.1.3 Public participation in project Monitoring and sustainability of water Sources...	54
5.2 Discussion .....	54
5.2.1 Public participation in project planning and sustainability of water sources. ....	54
5.2.2 Public participation in implementation and sustainability of water Sources .....	56
5.2.3 Public participation in project monitoring and sustainability of water sources....	57
5.3 Conclusions.....	58
5.3.1 Public participation in project planning and sustainability of water sources .....	58
5.3.2 Public participation in implementation and sustainability of Water Sources .....	59
5.3.3 Public participation in project Monitoring and sustainability of water Sources...	59
5.4 Recommendations.....	59
5.4.1 Public participation in project planning and sustainability of water .....	59
5.4.2 Public participation in implementation and sustainability of Water Sources .....	59
5.4.3 Public participation in project Monitoring and sustainability of water Sources...	60
5.5 Area for further study .....	60
References.....	61
Appendices.....	63
Appendix i: Survey questionnaire for Public members .....	63
Appendix ii: Key informant interview guide .....	67
Appendix iii: Focus group discussion guide for Public members .....	68
Appendix iv: Observation guide on visible items and activities .....	69
Appendix v: Documentary review guide .....	70
Appendix vi: Table for Determining Sample Size from a Given Population .....	71

## LIST OF TABLES

Table 3.1: Study Population and sampling techniques .....	26
Table 3.2 Results for Content Validity index .....	29
Table 3.3 results from reliability tests .....	29
Table 4.1 Response rate .....	32
Table 4.2 Responses on sustainability .....	35
Table 4.3 Responses in public participation in planning .....	38
Table 4.4 Correlation matrix for Public participation in project planning and sustainability of water Sources.....	42
Table 4.5 Responses on public participation in implementation and sustainability of water sources .....	46
Table 4.6 Correlation matrix for Public participation in project implementation and sustainability of water Sources .....	46
Table 4.7 Responses on public participation in monitoring .....	47
Table 4.8 Correlation matrix for Public participation in project Monitoring and sustainability of water Sources .....	50
Table 4.9 Regression Analysis of the component variables .....	51

## **LIST OF FIGURES**

Figure 1.1 Conceptual Framework .....	9
Figure 4.1 Respondents according to gender.....	33
Figure 4.2 Respondents according to age group.....	34
Figure 4.3 Respondents according to type of water source provided .....	34

## **List of abbreviations and acronyms**

O & M	Operation and Maintenance
PWD	Persons With Disability
IV	Independent Variable
DV	Dependent Variable
GoU	Government of Uganda
CBMS	Public Based Management System
SDM	Service Delivery Model
PEAP	Poverty Eradication Action Plan
MWE	Ministry of Water and Environment
MDG	Millennium Development Goal
NGO	Non-Governmental Organization
CSO	Civil Society Organization
FGD	Focus Group Discussion
SPSS	Statistical Package for Social Scientists
LC	Local council

## **Abstract**

This study presents findings on the public participation and sustainability of water sources in Kigumba Sub County, Kiryandongo District in Uganda. It was premised on the following objectives; to assess the relationship between Public participation in project planning and sustainability of water Sources in Kigumba Sub County, Kiryandongo District, to examine the relationship between Public participation in project implementation and sustainability of Water Sources in Kigumba Sub County, Kiryandongo District. And to assess the relationship between Public participation in project Monitoring and sustainability of water Sources in Kigumba Sub County, Kiryandongo District. The study employed both quantitative and qualitative approaches to collect data. In total, a sample of 94 respondents participated in the study. Data collection methods used were questionnaires, interviews and documentary review. Quantitative data coded and entered into SPSS and analysed using Pearson correlation coefficient Qualitative data was analysed using thematic analysis basing on the research objectives. The study findings revealed that there is a significant positive relationship between public participation in planning and sustainability, participation in implementation and sustainability, and a positive significant relationship between participation in project monitoring and sustainability of water sources. The study recommends that public members should be involved in drafting work plans to follow while carrying out water sources' activities. This will promote community involvement and participation which will enhance ownership and sustainability of water projects. The study further recommends that the project team should be accountable to public members on project activities. In addition, the study recommends that public members participate in local budget monitoring for water sources to ensure that financial resources are put to proper and intended use.

# **CHAPTER ONE**

## **INTRODUCTION**

### **1.0 Introduction**

The increase in population across the world continues to pose new challenges on natural resource management (Chitonge, 2014). This calls for public participation which calls for greater involvement of beneficiaries in water management and service production to ensure sustainability (Whittington et al., 2009). It involves beneficiaries to ask for improved water services as well as taking a leading role in the design, implementation, development and sustainability of projects. This study examined the relationship between public participation and sustainability of water sources in Uganda. The independent variable was public participation while sustainability was the dependent variable. This chapter was arranged in various sections including; problem statement, the purpose, study objectives, the research questions, hypotheses, the conceptual frame work, the significance, justification, the scope and operational definition of key concepts.

### **1.1 Background**

#### **1.1.1 Historical background**

During the mid-1980s, systems of water supply in various developing nations started to face key challenges in regard to reliability, coverage and quality. “These problems arose due to the failure by most states in meeting their obligations” (Franceys, 2008). “Several studies reported that local and national Governments were reluctant to invest in improving water infrastructure”(Bakker, 2010). There was poor customer care and water taps dried up because of wastage and spillage particularly in poor neighborhoods in poor neighborhoods. The conditions worsened and turned unbearable during the early 1990s when the majority countries could not provide proper solutions to the experienced challenges.

“Under such circumstances policy makers begun to prescribe a series of reforms with the most notable one being privatization of the water sector and involvement of Public members” (Bakker, 2010). “Private sector participation, although controversial, became fashionable as an alternative strategy for managing water resources in the developing world in the early 1990s” (Gaynor, 2013).

According to Rockefeller (2012), “development Sources should encompass a mechanism for sustainability from the onset to the final stage”. Historically, attempts have been made to ensure that development Sources are sustained. According to Brundtland commission (1987), “there were initially three pillars of sustainability until in 1987 when the fourth pillar of sustainability was added”. These were cultural, environment, economic and social pillars. The social pillar has been less utilized in the era of dominant paradigm but as holistic and participatory paradigm gained prominence, Public participation became crucial.

Uganda witnessed changes in Public participation from emergency oriented organizations like burial assistance groups that offered material and psychosocial support to the bereaved. Other groups were rotating labour sharing group in agriculture, clearing, planting and weeding. However, the exact origin of public participation in Uganda can be traced in 1950s when Public development movements started. The British colonial government came up with this participation as a strategy in Administration. “In 1952, the first department of Public development was created and it marked the beginning of Public participation” (Neema 1994, Muzaale & Birungi, 1997). During the post- independence period, there were Public Sources that benefited the entire Public like self help Sources. But these activities after independence were forceful through the chiefs who implemented the central government directives like opening the roads (Bulungi Bwansi), construction of latrines.

Since the mid 1990s, the Ugandan Water Supply and Sanitation (WSS) sector has come up with impressive progress in urban and rural areas, with increase in coverage, commercial and operational performance. Sector reforms between 1998 and 2003 involved modernization and commercialization of water sources in larger centers and cities and decentralization as well as participation of the private sector in small towns.

### **1.1.2 Theoretical Background**

Quite a number of theories have been written about public participation and are all concerned about how public participation relates to sustainability of water sources. However, their differences originate from their writings. For this study, the theory of citizen participation and self-determination theory was used.

Self-determination theory is a motivation theory which focuses on supporting intrinsic tendency to behave in effective and health manner. The theory was initially developed by Edward” (1970). The theory has been applied in Education, Health care, Relationship, Health, sports, etc. The theory identifies both intrinsic and extrinsic motivation as drivers to challenges and new possibilities in social development. According to Edward (1970), “conditions supporting individual and public experience linked to autonomy, competence and relatedness are urged to foster high engagement for activities”. In using this theory, provision of Sources and its sustainability will depend on the extent to which communities are motivated in the program.

In relation to this study, citizen participation theory informed the study on how public involvement in planning, implementation and monitoring of water Sources leads to sustainability in line with DeSario and Langton (1987) who stated that “citizen participation promotes public involvement which ensures that citizens have a direct voice in public

decision”. “In addition, the theory of citizen participation will help the study to identify the benefits of Public participation in the planning process” as Cogan and Sharpe (1986) asserts.

### **1.1.3 Conceptual background**

Public refers to a group of people living together, with shared interests and responsibility. The different categories of people in a Public are; men, women, youth, persons with disability (PWD), etc. “Public is nothing but mutual respect” (James, 2007). People can form a Public without having common beliefs, shared identity or defining themselves in terms of each other. However, a Public must be a group of people living in a specified geographical location with common sense of belonging, interests, values and responsibilities.

“Participation is defined as a process through which beneficiaries influence and share control over development initiatives, make contributions to decisions that affect them” (Bakenegura, 2003). Public participation refers to people’s active involvement and control of their own community programmes and projects and the activities that take place in those programmes and projects (National Community Development Policy, 2012). Public participation which is the independent variable (IV) in this study is defined as, the process where beneficiary groups influence the direction and implementation of their development, “Sources with a view to enhancing their wellbeing in terms of income, personal growth, self reliance or other values they cherish” (Paul, 1987).

“Sustainability which is the dependent Variable (DV) in this study is defined as the ability to maintain a facility so as to utilize and receive continuous benefits from it throughout its expected life span or beyond” (Feroze & Majibur, 2003). “Water Sources are sustainable if they can be utilized optimally and the process of implementing can be successfully replicated in other regions” (Nayaran, 1995). The indicators of sustainability according to (Nayaran

1995, Wakeman 1995, & Vanwijk-Sejbema 1995) are divided into seven components such as; “reliability of system, human capacity development, local institutional capacity, cost sharing for operation and maintenance (O&M), interagency collaboration, effective use and replicability”.

#### **1.1.4 Contextual Background**

The Government of Uganda (GoU) aims at providing safe water and improved sanitation to 100% of the rural population by year 2015 (Technology Development Handbook Vol.2). The two areas of concern are that of ensuring the efficiency and quality of construction of water and sanitation facilities. The second area of concern is that of ensuring effectiveness , long – term sustainability. The key strategy in addressing these concerns is Public participation and involvement, and Public –based operation and maintenance of facilities.

“The GOU in its efforts to increase water and sanitation coverage levels target ‘promotion of an integrated approach to manage the water resources in ways that are sustainable and most beneficial to people’ (National water policy, 1999). “Public based Management system (PBMS) is recognized as one of the water sector Service Delivery Models (SDMs) in Uganda’s policy framework” (Joint sector review report, 2009). This is a preferred option that is being used and promoted by all stakeholders including Government and non state actors in water sector and Kiryandongo District, Kigumba Sub County in particular. This model implies that Public members in Kiryandongo district are responsible for O&M of their water supplies and even it is the Public to demand for water facility by making applications for water through the local council leaders to the Sub County leadership who eventually forward the applications to the District water department or development partners in water sector. This involves initial information and mobilization efforts by extension staff at Sub

county and public level to raise awareness and create demand for water supply and sanitation services.

Making Right Choices and steps for processing applications (Bottom up Response Phase). This includes Public mobilization, training and follow –up procedures before full collection of Public contribution towards capital costs. Included are the criteria for accessing the funding for water and sanitation investments from GOU conditional grants, submission and screening of Public application, and signing of an agreement between Public and Sub County that clearly specifies obligations and responsibilities of all parties, and timing of implementation.

Making sure facilities continue to function after construction (Post construction phase). This presents the immediate activities after construction of water and sanitation facilities. The training on O&M of committees, caretakers and follow up guidelines. For instance training of artisans (hand pump mechanics, pumped scheme attendants, gravity scheme attendants).

Kiryandogo District which is located in mid western Uganda has four sub counties, one of which is Kigumba sub county where this study was carried out. During the period 2011 and 2014, the Department of Water in Kiryandongo received support to establish 100 water points from The water trust (DWD Annual report, 2014). This support was provided to refugees and local communities of three parishes in Kigumba, which include Kiigya, Mboira and Kigumba I. In order to ensure sustainability of the water sources, the public was urged to participate in planning, implementation and monitoring of the water points. In spite of all these Public interventions, there is still quite a number of water Sources that are non-functional and these could be attributed to inadequate Public participation that may be as a result of inadequate

funding, technical breakdowns, poor water quality, alternative water sources, poor Public mobilization and sensitization. No research to date has been carried to look at the role of Public participation and sustainability of water Sources in Kiryandongo District (Kigumba Sub County).

## **1.2 Problem Statement**

“Public participation ensures effective utilization of resources, improved accountability to communities; responsiveness to local needs; increases equitable access, quality and better performance” (Pauline 2003). According to Salum (2002), “sustainability of local development Sources relies heavily on Public participation”. “In Uganda, the water sector development has been encouraged to adopt Public participation models in order to achieve access to safe and clean water for all” (NWP, 1999; Cinara, 1999; MWE, 2009). The government and donors in Uganda have influenced Public participation in planning, implementation and monitoring of water Sources through a variety of avenues like use of Public driven demand approaches and civil society funding. “For instance, in FY2013/2014, the Government of Uganda allocated 439 billion for civil society organizations working in the water sub sector” (MoFPED Budget frame work 2013/2014). “Despite all these attempts, sustainability of water Sources remains a serious challenge for local communities. For example, by June 2013, the national access to safe water in the rural areas remained at 44% against the projected national average of 88%” (New Vision October 21, 2014). According to Ministry of Water and environment (MWE) (2014), “poor access to clean water is blamed on poor Public participation in planning, implementation and monitoring”. If nothing is done, it is feared that 15.4 million Ugandans who live in rural areas might die of water borne diseases. This study therefore seeks to examine the relationship between Public participation and sustainability of water Sources in Uganda.

### **1.3 Purpose of the Study**

The main purpose of the study was to examine the relationship between Public participation and sustainability of water Sources in Kiryandongo District in Uganda.

### **1.4 Objectives of the study**

- i. To assess the relationship between Public participation in project planning and sustainability of water Sources in Kigumba Sub County, Kiryandongo District.
- ii. To examine the relationship between Public participation in project implementation and sustainability of Water Sources in Kigumba Sub County, Kiryandongo District.
- iii. To assess the relationship between Public participation in project Monitoring and sustainability of water Sources in Kigumba Sub County, Kiryandongo District.

### **1.5 Research Questions**

- i. What is the relationship between Public participation in project planning and sustainability of water Sources in Kigumba Sub County, Kiryandongo District?
- ii. What is the relationship between Public participation in project implementation and sustainability of Water Sources in Kigumba Sub County, Kiryandongo District?
- iii. What is the relationship between Public participation in project Monitoring and sustainability of water Sources in Kigumba Sub County, Kiryandongo District?

### **1.6 Hypothesis**

- i. There is a positive significant relationship between Public participation in project planning and sustainability of water Sources.
- ii. There is a positive significant relationship between Public participation in project implementation and sustainability of Water Sources.
- iii. There is a positive significant relationship between Public participation in project Monitoring and sustainability of water Sources.

iv. There is a positive significant relationship between public participation and sustainability of water sources.

### 1.7 Conceptual Framework

The conceptual framework (Figure 1.1) explains the various dimensions involved in Public participation particularly in planning, implementation, monitoring and evaluation of the Sources. The Public participates in identification of water needs and development of work plans and budgets, establishment of water points and participates in implementation process. All this is intended to add value to the project sustainability as the social systems’ theory suggests. The social systems theory helped in the generation of the conceptual framework, where people work as a team to structure what they want in terms of needs identification, wanting to participate in what concerns them as a group.

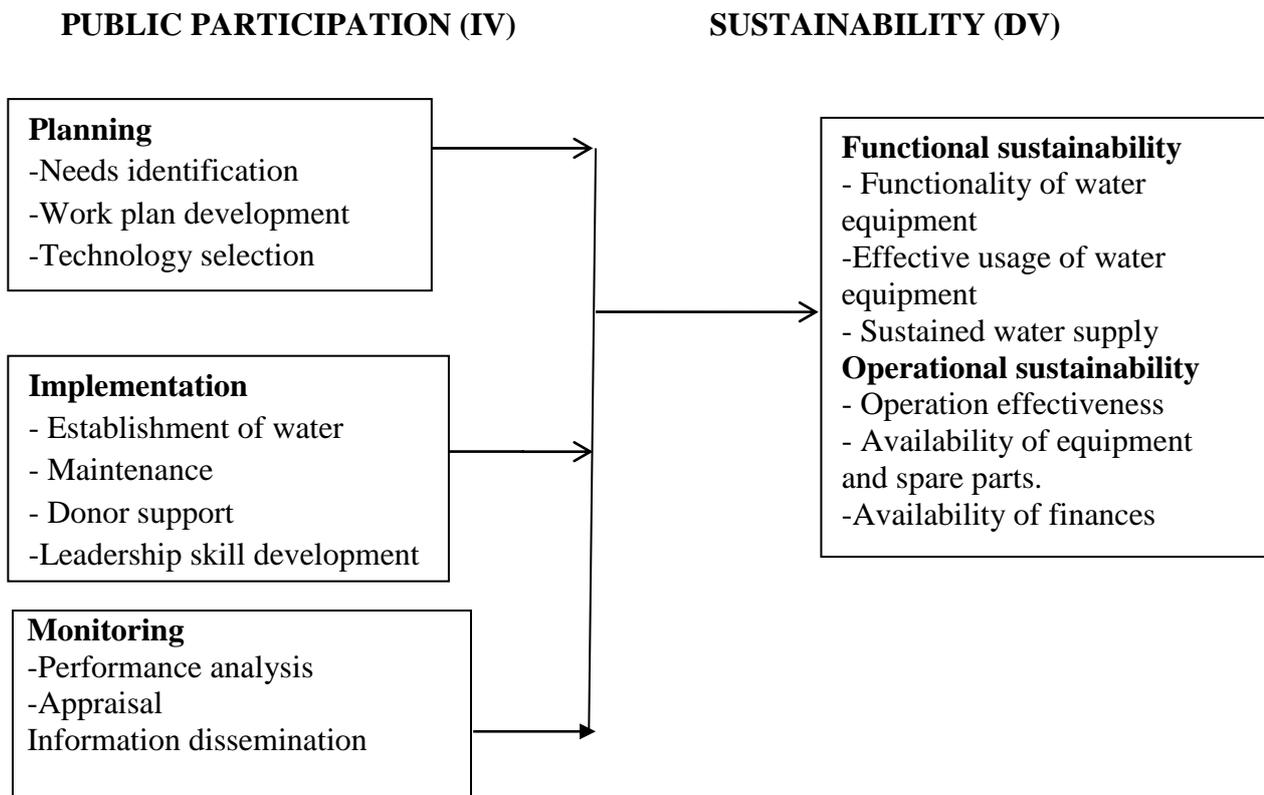


Figure 1: A conceptual Framework of the Study  
 Source: Adopted and modified from the social system theory: Ann Hartman (2004) - Social Work practice

Figure 1 above shows the relationship between the independent variable (Public participation) and the dependent variable (sustainability). Under Public participation, the conceptual framework talks about needs identification, work plan development and technology selection. Implementation considers establishment of water, maintenance, donor support as well as leadership skill development. In addition, monitoring covers performance analysis, appraisal and information dissemination. It is conceptualized that effective Public participation leads to improved sustainability of water Sources in terms of functional and operational sustainability.

## **1.8. Scope of the study**

### **1.8.1 Content scope**

The content scope covered public participation and sustainability of water Sources in Kigumba Sub County, Kiryandongo district which is located in mid-western Uganda. The research study examined the role of public participation in sustainability of water Sources in Kiryandongo District, Kigumba Sub County. In Kigumba sub county, participation includes the involvement of community members in planning, implementation and monitoring to ensure sustainability of water sources.

### **1.8.2 Geographical Scope**

The study was conducted at Kigumba Sub County, Kiryandongo District which is located in mid-western Uganda. Kigumba Sub County is one of the 4 sub counties in Kiryandongo District and comprises of 3 parishes. The study was conducted in all the 3 parishes of Kigumba Sub County namely; Kiigya, Mboira and Kigumba I. According to the Department of water in Kiryandongo, these parishes received a lot of support for establishment of 100 water points from The Water Trust. “This support from the international organization

provided water for refugees and local communities between 2011-2014” (DWD Annual report, 2014).

### **1.8.3 Time Scope**

The study covered the communities in all the 3 parishes which had access to water Sources from 2011- to 2015 because this was effected one year after Kiryandongo attained a District status being curved off Masindi District.

### **1.9 Significance of the study**

The study may be significant in terms of policy, academic and management contributions. It is anticipated that the study findings may help the government of Uganda and development partners in having sustainable interventions as far as implementation of water Sources is concerned.

Additionally, it is hoped that the study may add new knowledge and insights to the existing body of knowledge in the field of Public participation and sustainability of water Sources.

### **1.10 Justification of the Study**

“Little empirical evidence is available to justify Public participation in sustainability of water sources in Uganda but in Tanzania, it has been observed that water Sources that have little of Public participation are not sustainable” (Kaliba, 2000). “Public participation in service delivery is intended to result in interventions that are more sustainable, targeted and appropriate” (Plummer, 1999).

A lot of resources are committed by government, development partners and the private sector towards promotion of access to safe water in rural communities. Such resources would be considered wasted if the water facilities constructed do not yield water to serve intended beneficiaries through lack of proper O&M, breakdowns which results into lack of access to safe water. Such Sources become unsustainable. This research study is justified as it intends

to look at Public participation as an important aspect of ensuring access to and sustainability of water Sources in Kigumba Sub County, Kiryandongo District.

### **1.11. Operation definition of key concepts**

**Public participation:** Refers to the process where beneficiary groups influence the direction and execution of their development Sources with a view to enhancing their wellbeing in terms of income, personal growth, self reliance or other values they cherish.

**Planning:** This refers to the process of identifying and developing a work plan through which water Sources can be carried out.

**Implementation:** is the execution of activities in line with agreed conditions for the benefit of Public members.

**Monitoring :** is the continuous supervision of project activities to ensure that resources are put to the proper and intended use.

**Sustainability:** Refers to ability to maintain a facility so as to utilize and receive continuous benefits from it throughout its expected life span or beyond.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.0 Introduction**

This chapter presents the review of related literature on the relationship between Public participation and sustainability of water Sources in Uganda, a case of Kigumba Sub County, Kiryandongo District. The literature review enabled the researcher to identify theories which will guide the study. The literature review was based on studies already conducted in this area and provided insights on the study variables, ascertain methodology and identify gaps in the previous studies. The literature review was sourced from books, publications, internet and journals that were available to support the study.

#### **2.1 Theoretical review**

Two important theories guided this research. These are citizen participation theory and self determination theory. Citizen participation theory dates far back to colonial England and ancient Greece. The theory gained prominence after 1960s when the colonial and ancient authorities collapsed. Citizen participation theory states that, public participation is a mechanism which ensures that citizens have a direct voice in decision making in the public arena. This theory was used by Cogan and Sharpe (1986) to identify the benefits of participation in the planning process. Similarly, DeSario and Langton (1987) used the theory of public participation to review the broad theories in decision making structures. Accordingly, Kweit and Kweit, (1986) found that “policy analysis tends to concentrate power in the hands of few experts and this limits the extent of citizen participation”. In using this theory, this research intends to use democratic approaches, which will provide insights on means of decreasing tensions and conflicts in public policy decision when the Public plays their active role in determining their own affairs.

Self determination theory is a motivation theory which is concerned with supporting intrinsic tendency to behave in effective and health ways. The theory was initially developed by Edward (1970). The theory has been applied in Education, Health care, Relationship, sports, etc. The theory identifies both intrinsic and extrinsic motivation as drivers to challenges and new possibilities in social development. According to Edward L. Deci (1970), “conditions supporting individual and public experience linked to autonomy, competence and relatedness are urged to foster high engagement for activities”. In using this theory, provision of Sources and its sustainability will depend on the extent to which communities are motivated in the program.

The theory of citizen participation has been used in local government and democratic studies. It has been helpful to assess the functioning of local democracy. According to Ank (2013), in his study in two municipalities in Netherlands, he found that “citizen participation in Sources is limited and therefore there is limitation of the responsibility for public matters”. This finding however, has not been undertaken in the context of Uganda. Similarly Laurens (2013), found that “for a functional local democracy, citizen participation must be in broader sense”. Therefore, examining the findings above in the context of Uganda is necessary to generate evidence on Public participation and sustainability of water Sources in Uganda.

The theory of self determination has been useful in increasing the number of student’s success in examination. This theory has been used by Ryan (2004) in “*Examining Autonomy of a Member of Public who Needs to Experience Ones’ Behaviour in an Integrated Self*”. Ryan argued that, for Public self determination to be effective there must be a desire to exercise capacity as well as attached motivation. On the other hand, Public self determination and autonomy has been challenged by DeVoe (2003) who found that “cultural valuing of social harmony means that the society do not have a need for autonomy and therefore, members of the society do not need to have any support for their autonomy”. This therefore

means that, questions like the larger unsustainable role of donors and government in supporting development sources are challenged. In line with this study, it is important that donors and the government facilitate public participation at different stages such as planning, implementation and monitoring to achieve sustainability of water sources.

## **2.2. Actual review**

### **2.2.1 Public participation in planning and sustainability of Water Sources**

The global dialogue around policies for Public development, places much discussion specifically in promotion of participation by those living in poverty. According to Rifkin (2009), “participation is not only promoted in the context of utilisation but in terms of planning and the absence of the link continues to be a barrier of sustainability”. This finding highlight the commonly abused process in Uganda where communities are often less involved in the planning process. Findings further showed that Public participation in planning helps them to act as change agents. However, the expectation from Public participation seems to be idealistic and it has resulted into changing the term Public participation in planning with Public empowerment and this has underpinned decentralization principles. The gaps in the above findings are that in the past all the development paradigms were reviewed from predominant paradigm. “Additionally, application of methods and contextual relevance for those findings needs to be reassessed” (Atkinson et al., 2011).

The requirements of a project are known after the company making observations about it. Observations are subjective and therefore, an expert on the proposed project should come up to make observations. A good observer identifies the needs of the project through answering key questions about the project. If the observations consider the project itself and the outcome of the project, then they should meet all the project needs.

Gibson and Pappas (2003) assert that “needs are not directly assessed, but rather, the identification of needs is the result of a complex process that requires integration and synthesis of many factors, including the results from numerous assessments”. “The assessments synthesized into needs include; the pre-event levels of function, the amount and types of damage sustained initially and existing at the current time; current levels of function and the levels of function detected by the last assessment, the presence of a surge, the demands of the population affected, the culture in which the event occurred, the climate in the affected area, the geography and access to the affected area; and politics” (Kusek & Rist, 2004).

To identify needs, requirements and assessments use similar indicators. Needs are expressed in terms of services or goods. These services and goods are inputs to the process of transformation which results in the function. To enhance a level of function demands either enhancement in the amount of services and goods or improved effectiveness of the process of transformation. This transformation from noted damage via assessed functional deficits to identification of services and goods required needs several inputs as well as expertise of the people responsible for synthesis. Needs identification is a challenging process of transformation that requires synthesis and integration of information obtained from assessments by capable persons. After identifying needs, plans are made in terms of services and goods required to minimize deterioration in the levels of function or the levels of functions to pre-event levels.

According to Bartle (2007), “a work plan is a planning and management instrument (tool) which provides a framework for planning the work, and is a guide during the period in question for carrying out that work”. It is also used by funding and implementing agencies as a document seconding the release of money (and this is why the first purpose can easily be

forgotten; some managers see it as an inconvenience, rather than a useful instrument for their own work). It is also useful for transparency, as copies of the work plan are given to parties or companies with need or a right to know what the organization is doing, and why, during the current period.

On the other hand Gibson and Pappas (2003) contend that “a work plan is based upon a project already approved, and identifies a specific time segment within that project or programme”. It identifies (as goals) the challenges to be solved, makes them finite, precise and verifiable as objectives, indicates the resources required and hindrances to be overcome, outlines a strategy, and identifies the actions to be taken in order to reach the objectives and complete the outputs.

Bartle (2007) suggests that “the constraints section of the work plan must include identification of hindrances which should be overcome in order to reach the objectives”. Include also a short description of how you plan to overcome them. The Resources section should further indicate what (potential) inputs can be identified which will contribute to reaching the identified and selected objectives. In the work plan there should be resources that are not necessarily liquid cash at that time; like staff and other personnel, partners, consultants, land, capital, supplies, equipment, inventory which can be used, sold or traded, and anything which is available to be mobilized and used in reaching the identified objectives. “The Strategy section of the work plan should show how you intend to turn your resources, overcome the constraints, using those identified inputs (resources) to reach the objectives or attain outputs” (Gibson and Pappas, 2003)

“New and emerging technologies and tools have great potential to help project teams mitigate risks associated with unknown existing site and equipment conditions or other factors” (Rosenfeld and Shohet 1999). Existing facility conditions pose a unique risk issue for renovation of water Sources. Unknown subsurface conditions, facility configuration, and degraded equipment or systems can threaten the successful completion of a project. “Effective front end planning requires the project team to perform a comprehensive assessment of existing site and equipment conditions” (Construction Industry Institute, 2009).

As technologies provide potential to improve project planning, research effort is needed to integrate the new technologies into the successful front end planning process. Especially, the integration process must consider the fact that project teams may have very different demands. For instance, some teams may identify their problems well and need a tool to help them to select appropriate technologies, while others may not fully understand the site condition, or they are willing to try new technologies in their Sources. “Accordingly, decision criteria for technology selection are identified as application area, risk mitigation, cost effectiveness measured by performance over cost ratio, and technology match” (Bartle, 2007)

### **2.2.2 Public participation in implementation and sustainability of Water Sources**

According to Bernfield (2001), “implementation is defined as a set of specific activities designed to put into practice an activity or program of known dimension”. According to this definition, implementation processes are useful and sufficient in details for observers to detect presence or strength of a specific set of activity. Gogging (1986), describe the purpose and categorize it into three. These are; “paper implementation, process implementation and performance implementation”.

According to Atkinson et al. (2011), “governments and donors are promoting wider Public participation”. “In Uganda, Public participation in development project is not a new

phenomenon considering that people participate in provision of essential needs like digging of wells, opening roads and providing services to the sick people” (King 1966). Public participation assumes that people would be more supportive, provide resources, change risky behaviors and be empowered. These assumptions were used by Cueto (2004) and Rifkin (2009) who found that “social justice is linked to participation principles”.

Paper implementation means that putting into place new policies and procedures which is the theory of change. Hernandez and Hodges (2003) found out that “at paper implementation, innovations form the rationale for policies and procedures”. There is no empirical evidence in Uganda to suggest that innovations influence policies and procedures in the water sub sector considering that there has not been much local innovation uptake in the water sector. Besides, communities are often having inadequate capacity to articulate policies basing on past evaluations or lessons adopted from other programs. Rogers (2002) found that “much as 80% - 90% of people depend on innovations, paper implementation may be prevalent when outside groups are monitoring compliance”. Therefore, the capacity of the Public to adopt paper implementation is hereby challenged. Besides, it is clear that paper file plus manuals on shelves do not equal to putting innovations into practice which will benefit the local members of the Public.

Process implementation means putting new operating procedures in place to conduct training workshop, supervision, reporting which are necessary for achieving the expressed theory of change. In the water sector these process implementation therefore means that procedures that are in place for conducting training to water user committee, supervision of pump mechanics and reporting on the expressed needs of the Public. Process implementation is an attempt to provide evidence about the programs. However, it provides lip service which do not equals to putting innovation into practice for the benefits of the consumers. This raises questions like, do Public members provide documented evidence of their work?, are Public

members having adequate capacity to manage the water resources?, and are the desires for the needs of the Public being fulfilled as a result of using these procedures?.

Performance implementation means putting procedures and processes in place in such a way that the identified functional components of change are used with good effect for consumers. According to Paine et al (1984), “implementation of Public Sources that produces actual benefit requires a more careful and thoughtful effort”. In using this finding, a review question with key informants will involve asking questions like; are there procedures and processes in place for Public to demand for water services? And how do you respond to such demands?

Effective maintenance is partly the result of regular routines and partly the result of promptly fixing small problems before they become major ones. Proper maintenance has a direct effect on the Publics’ perception of the quality of the project. Most maintenance work can be predicted and scheduled, this is typically described as preventive maintenance. “The agency requires managers to spell out procedures for scheduling routine tasks, such as grounds upkeep and minor repairs” (Bartle, 2007).

Gibson and Pappas (2003) stated that “frequent, regular inspections are a major component of an effective maintenance system. The agency requires management, at a minimum, to perform an annual inspection of each unit”. Inspecting a unit establishes its condition and may help clarify responsibility for any damages that have occurred.

Quality local leadership, training and supervision, and democratic input and involvement are important components of Public participation. “These structures and opportunities could include developing mechanisms to engage Public members in the planning and decision-making process at the local government level” (Camino and Zeldin 2002).

### **2.2.3 Public participation in monitoring and sustainability of Water Sources**

According to Khemani (2008), “Public monitoring is a form of public oversight driven by local information needs and Public values to increase accountability and quality of social services”. The need for public monitoring in public service development is premised on the fact that, local oversight raises social accountability for public service providers. This finding may not apply in the context of Uganda where social service provision like water services are in the hands of private individuals and yet they need to be accountable. “In Uganda, there is increasing appreciation of the use of Public score cards, citizen report card, public expenditures tracking surveys, social audits and rights to information which encompasses a lot of Public involvement” (Larrauri, 2009). Evidence from randomized trials in Uganda indicates that public monitoring of programs was beneficial for local budget monitoring. However, participation is complex because it takes time to ensure effective participation. “Additionally, taking ownership, dissemination and use of monitoring data and political engagement coupled with capacity constraint affects the extent to which Public participation is effective” (Bjorkman,2009). Transparency international (2001) recommended that, “Public participation can be phased slowly with multiple strategies which involved rewards, surveys, information sharing and strengthening leadership in decision making”.

However, the linkage between the civil society and the government is significantly affected by low capacity. In Uganda, civil societies have inadequate capacity to effectively lead public monitoring of activities and yet on the other side, the government is inadequate enough to provide the required oversight function. The unanswered key questions include the extent to which civil society organizations influence public monitoring in the water sub sector? The extent to which government respond to Public monitoring report?

The World Bank Public monitoring and evaluation team (2002) share that “participatory monitoring seeks to increase Public participation in the development process by including

Public members in the collection and some use of data about program implementation”. Enzama (2008) agrees that “it is important to involve stakeholders in the process of developing a framework for measuring results by putting together a system to get necessary data to better inform the decision making process, and reflecting on the achievements and proposing solutions based on local realities”.

On the other hand, World Bank (2006) notes that “the new development trend requires NGO’s and Governments to shift from simply reporting on how much money has been spent and outputs achieved to the need to know how well these development interventions have achieved intended objectives, impact and how effectively and efficiently they have contributed to MDGs”. The International Finance Corporation, World Bank Group (2012), asserts that “*it’s both a good practice and common courtesy to follow up with stakeholders whom you have consulted to let them know what has happened and what the next steps in the process will be*”

Kiyimba (2011) further note that “sharing information in an appropriate, targeted and timely fashion is a frequent distinguishing characteristic of monitoring and evaluation utilization and that all information needs to be relevant, timely and written in an understandable form addressing the questions that need to be answered and be presented in a form best understood”.

Monitoring and evaluation measures progress, adjustments, and notifications and provides periodically analysed information for decision makers to agree on the objectives and activities. Monitoring and evaluation acts as an early warning system. FAO (1997) asserts that “participatory monitoring and evaluation is geared towards not only measuring the effectiveness of an organisation but also towards building ownership and taking corrective actions to improve performance and outcomes”. Barnes (2007) agrees with FAO by stating

that “monitoring and evaluation is an integral part of participatory program design and implementation process”. It works best when the entire program process from planning to evaluation are carried out in a participatory manner. He goes on to argue that monitoring and evaluation ensures that program evolves around people’s felt needs, the participatory process also builds and promotes stakeholder’s ownership of the organizational activities, which is an important factor that contributes to improved organizational performance. Kiyimba (2011) also agrees with FAO by stating that “the main objective of results oriented monitoring and evaluation are to increase organizational learning, ensuring informed decision making, support genuine accountability and ensure quality control, and contribute to best practice”.

Participation in Monitoring is a collaborative partnership where stakeholders including beneficiaries work together to achieve a common goal. Matov (2015) suggested that “participation is rights based and establishes identity and interests which are critical for achieving quality”. These views build on Desai’s (2001) argument that “participation enables pursuance of beneficiary empowerment, capacity building and effective intervention”. (Martina, Bjorkman & Jakob, 2010) argue that “clear and well defined functions played by stakeholders promote quality interventions”.

### **2.3 Summary of Literature Review**

The reviewed literature points out the various issues related to public participation and sustainability of water Sources in Uganda. The previous researches provide evidence of how Public participation is related to sustainability of water sources but no conclusion has been made. There are contextual and methodological gaps mostly using secondary data which this research hopes to address. Thus, this section explored the theoretical framework, public participation, planning, implementation, monitoring and sustainability of water sources in Uganda. Although the literature reveals that public participation in planning helps community members to act as change agents, there is limited information on how their participation in

planning contributes to sustainability. In addition, while the literature indicates that donors and the government promote wider participation in implementation, the authors do not explain how such participation contributes to sustainability of water projects. The literature further falls short of elucidating how public participation in monitoring relates to sustainability of water sources. Therefore, it was necessary to establish how public participation relates to sustainability of water sources in Uganda. The study filled this knowledge gap by indicating that all the studied dimensions of public participation (planning, implementation and monitoring) positively relate to sustainability of water projects.

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.0 Introduction**

In this chapter, the researcher describes the research process and the techniques that were employed during the study. “For any study to achieve its intended objectives, it should have a well thought and planned methodology” (Onen, 2011). It covered research design, study population, sample size and selection strategies and data collection methods and techniques. It also explains validity and reliability procedure of data collection, analysis and measurement of variables.

#### **3.1 Research design**

“A cross-sectional study design was adopted for this research because it enables and facilitates the collection of data at a one point in time”, as Sekaran (2003) suggests. In addition, the study adopted a triangulation of both quantitative and qualitative approaches for data collection and analysis. “In this case, the quantitative approach allowed the researcher to solicit information expressed in numerical format while the qualitative approach complemented the quantitative approach by soliciting more detailed information expressed in textual format” (Mugenga & Mugenga, 1999).

#### **3.2 Study population**

The study population included; top officials in the district who are involved in handling Public and water project issues. Public members from three (3) parishes were also included in the research. Kiryandongo District officials have a total of 10 key officials who are involved in water Sources. “There are 5 water board members who oversee water related activities and 3 water technical team members whose role are to provide maintenance and operation of water facilities” (Kiryandongo Human resource record 2014). There are 197 water user

Public members that have been selected for this study. The entire population where this study was draw included 197 people from whom samples of 132 respondents were selected.

### 3.3 Sample size, selection and procedure

The sample size was determined using Krejcie and Morgan’s statistical table which is recommended by Amin (2005); Sarantakos, (2003).

**Table 1: Study Population and sampling techniques**

Population category	Total	Sample size	Sample techniques
District Officials	10	10	Purposive
Water Board Members	4	4	Purposive
Water technical team	03	03	Purposive
Water user Public members	180	115	Simple random
Total	197	132	

*Source: Kiryandongo District human resource records, (2016).*

The categories of participants were selected from different departments involved in water program planning, implementation and monitoring. The key informants included water board members, District officials like; the chief administrative officer, District water officer, district health inspector, District Public development officer, pump mechanics, secretary for works and technical services at district level, sub county officials like; Senior Assistant secretary/Sub county chief, Public development officer, pump mechanics, secretary for works and technical services, health assistants, water technical team(water source manager, water source caretakers). At the Public level, focus group discussions were carried out among the water user committees and the general Public at large. Observation techniques were also carried out by the researcher. According to Sekaran (2003), “it is necessary for a researcher to obtain information from specific target groups”.

### **3.4 Sampling techniques**

In this study, both random and purposive sampling techniques were employed where random sampling included; simple random sampling. “As seen in table 3.1 above, simple random sampling was used in Public survey because it offers a high degree of representation of all the categories under study” (Amin, 2005). “Purposive sampling is justified in situation where respondents with vital information are few” (Amin, 2005).

### **3.5 Data collection methods**

The data collection methods involved key informants interview, questioning, focus group discussions and observation checklist.

#### **3.5.1 Key informants Interviews**

An interview guide were used to collect information from the key top district officials who included the following staff; the chief administrative officer, District water officer, district health inspector, District Public development officer, pump mechanics, secretary for works and technical services. The information supplied by key informants was triangulated by the information supplied by the members of the technical team and the Public.

#### **3.5.2 Questionnaire method**

This was used to collect information that is relevant to the study from members of the Public and water user committees.

### **3.6 Data collection instruments**

These included; interview guide, focus group discussion guide and observation checklist.

#### **3.6.1 Interview guide**

Structured interviews were conducted to both individuals and groups. This was administered to communities that access safe water. This method is suitable because it gives room for probing basing on the responses from the respondents. Interviews give more clarity and yield

the biggest response rate. This kind of data collection gives room for flexibility during investigation to the researcher.

### **3.6.2 Questionnaire**

Questionnaires were used to collect in-depth information from the water user committees and the Public.

## **3.7 Pretesting (Validity and Reliability) of research instrument**

### **3.7.1 Validity.**

This simply refers to the appropriateness of the instrument. The instrument should be able to confirm that what we measure is what we get. The findings should be in agreement with the theoretical or conceptual values. Content validity index was used to measure the extent to which the content of the instruments corresponds to the content of the conceptual framework of the study. Amin (2005) recommends that “an instrument which has an average index of 0.7 or above is accepted as being valid”. The researcher therefore measured the content validity by;

- a) ensuring that the contents in the key informant guide conforms to the conceptual framework
- b) engaging research experts and research supervisors to evaluate relevance and clarity of the questions
- c) field testing of focus group discussions on 3 groups each from a parish and observation of 3 water sources. Content validity will then be measured by the formula:

CVI=Total number of items rated to be valid / Total number of items in the instruments.

**Table 3.2 Results for Content Validity index**

<b>Variables</b>	<b>Content validity index</b>	<b>Number of items</b>
Participation in Planning	0.875	8
Participation in Implementation	0.75	8
Participation in Monitoring	0.9375	8
Sustainability of water sources.	0.8125	8

Source: Primary data (2016)

Results in Table 3.2 above show that all variables had content validity index which was above 0.7. This shows that the instruments were valid for the study.

### **3.7.2 Reliability**

An instrument is treated as reliable when it is able to measure what it is intended to measure. A pre-test was carried by the researcher to respondents who are not part of the study. It is from this pre-test that the researcher judged that the data collection tool was reliable as it would enable the researcher to estimate the error.

**Table 3.3 results from reliability tests**

<b>Reliability Statistics</b>	
<b>Cronbach's Alpha</b>	<b>N of Items</b>
.947	37

Source: Primary data (2016)

Results in Table 3.3 show that the Cronbach's Alpha obtained was .947 which is above 0.7. That means that the data collection instruments would be used to collect reliable data

### **3.8. Procedure for data collection**

A covering letter from UMI was obtained to enable the researcher to undertake the study in the selected departments of Kiryandongo district. The researcher employed three research

assistants and one data entrant who are familiar with conducting qualitative research. Face to face interviews were carried out by the researcher himself.

### **3.9 Data processing**

Qualitative data collected from the key informants respondents will be edited and categorized according to themes and summarized into percentage in computer spreadsheets. Quantitative data was coded and entered into SPSS.

### **3.10 Data Analysis**

The qualitative data was analyzed given the use of interview guide, documentary review and observation linking them to the variables while examining the relationship. The data was then coded and entered into the computer using statistical package for social scientists (SPSS version 19.0). Data manipulation was through Pearson correlation coefficient to establish the relationship between variables.

### **3.11 Measurement of variables**

Public participation as independent variable was measured in terms of percentages and ratios of Public involvement in terms of planning, implementation and monitoring. Sustainability as dependent variable was measured through triangulation of relationship between Public participation in terms of finance, technical and institutional sustainability.

Planning was measured in terms of community participation in needs identification, work plan development and technology selection as supported by Bartle (2007). In addition, implementation was measured in terms of establishment of water, maintenance, and donor support and leadership skill development (Atkinson et al., 2011). On the other hand, participation in monitoring was measured in terms of performance analysis, appraisal and information dissemination (Kiyimba, 2011) while sustainability was measured in terms of functional and operational sustainability (Narayan, 1995).

### **3.12 Ethical considerations**

The study took into account ethical considerations; that is, the researcher first sought consent from all prospective respondents and then explained to them what the study is all about. Further assurance and confirmation was given to respondents that the information got was treated with confidence and for use in academic purposes only.

## CHAPTER FOUR

### DATA PRESENTATION, ANALYSIS AND INTERPRETATION OF FINDINGS

#### 4.0 Introduction

This chapter covers data analysis and presentation as collected from the field. It includes response rate, respondents according to gender, age groups, and types of water sources. It further presents descriptive statistics and Pearson correlation coefficient of study variables such as public participation in planning, implementation, monitoring and sustainability.

#### 4.1 Response rate

**Table 4.1 Response rate**

<b>Instruments</b>	<b>Targeted</b>	<b>Conducted/Returned</b>	<b>Percentage</b>
Questionnaires	115	80	69%
Interview guides	17	14	82%
Total	135	94	70%

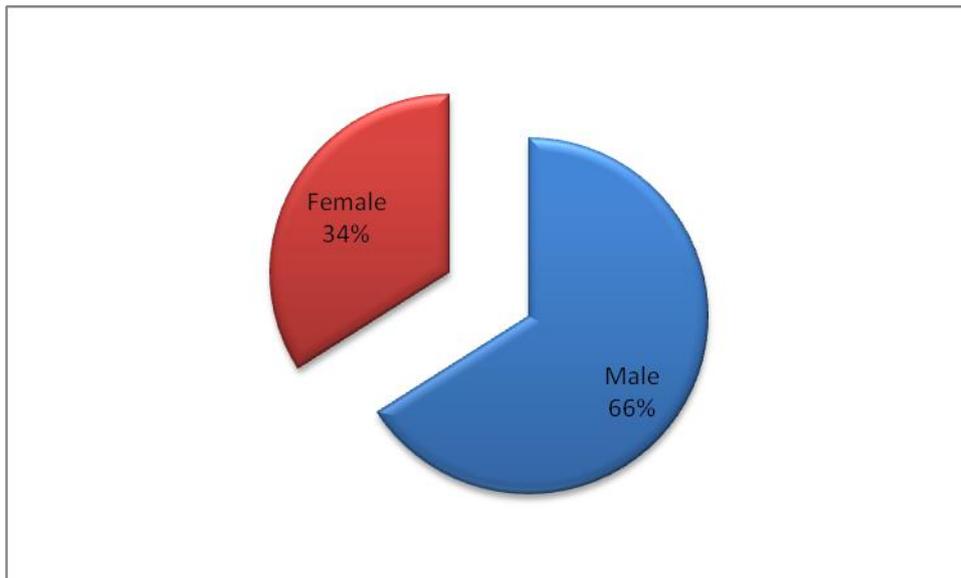
**Source: Primary data (2016)**

Table 4.1 above shows that out of 115 questionnaires distributed, 80 were returned giving a response rate of 69% in addition, out of 17 interviews, 14 were conducted, giving a response rate of 82%. “The overall response rate was 70% which is above the recommended two-thirds (67%) response rate” (Mugenda & Mugenda, 1999).

#### 4.2 Background characteristics

During the study, the researcher sought the background characteristics of respondents in terms of gender, age group and the type of water source provided. Results are presented in the next section of this report.

#### 4.2.1 Gender of respondents

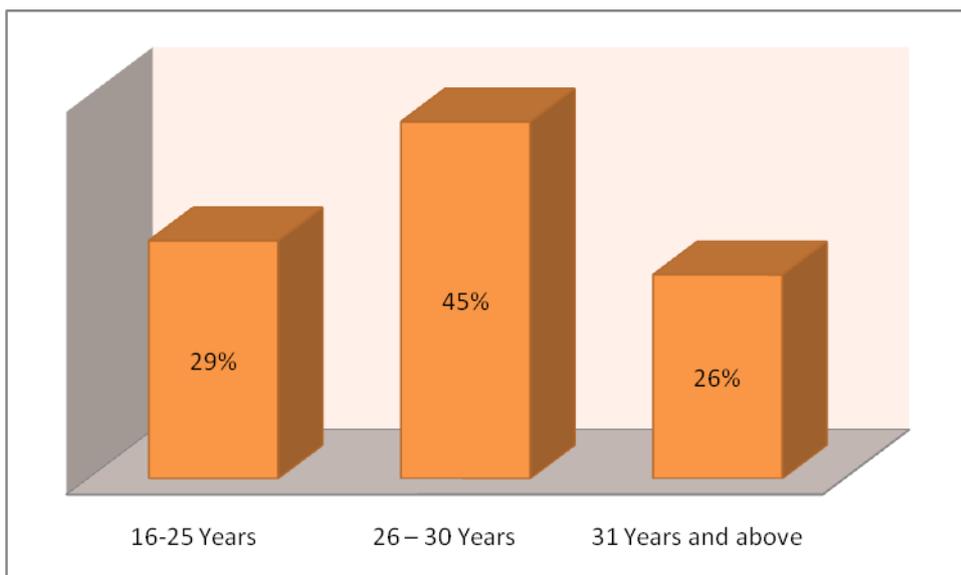


Source: Primary data (2016)

**Figure 4.1 Respondents according to gender**

Results in figure 4.1 show that majority (66%) of the respondents were males. On the other hand, 34% of the respondents were females. The above findings imply that study results were obtained from a gender balanced sample size, therefore, not gender biased.

#### 4.2.2 Age group

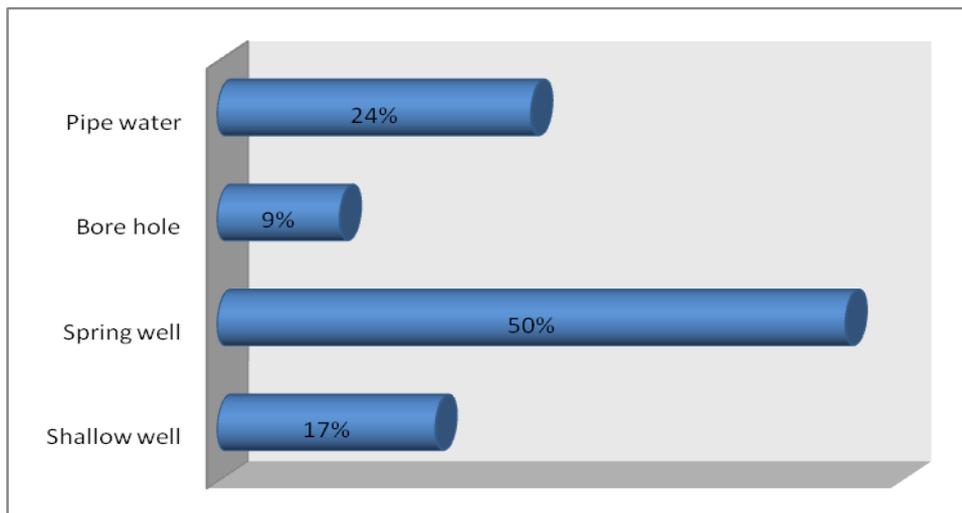


Source: Primary data (2016)

### Figure 4.2 Respondents according to age group

According to Figure 4.2 majority 45% of the respondents were aged between 26 – 30. In addition, 29% were aged 16 – 25 while 26% of the respondents were aged 31 years and above. This implies that most respondents were mature and able to understand the purpose of the study to give valid responses.

### 4.2.3 Type of water source provided



Source: Primary data (2016)

### Figure 4.3 Respondents according to type of water source provided

Results in Figure 4.3 show that majority 50% of the respondents used spring wells. 24% of the respondents used piped water, 17% shallow well while 9% used boreholes. The above results indicate that community members had access to different types of water sources and were able to provide reliable data for the study.

### 4.3 Empirical findings

During analysis, respondents who strongly agreed and those who agreed were combined to form a category of ‘agree’. In addition, those who disagreed and strongly disagreed were also combined to form a category of ‘disagree’. Respondents who were not sure were considered to be neutral.

### 4.3.1 Sustainability of water sources

A set of questions were also asked on sustainability of water sources which covered functionality of water equipment, effective usage of water equipment and sustained water supply. Other questions were on operation effectiveness, availability of equipment and spare parts and availability of finances. Below are the responses the researcher obtained from respondents.

**Table 4.2 Responses on sustainability**

Sustainability	SD	D	NS	A	SA	Mean	Std. Dev
Water equipment are functional most of the time.	12%	9%	9%	43%	27%	3.66	.959
Equipment for water Sources are effectively used	7%	7%	10%	56%	20%	3.66	1.024
There is sustained water supply to the Public	11%	13%	12%	48%	16%	3.33	1.059
There is effective accountability of funds	49%	10%	5%	12%	25%	2.48	1.093
Water Sources are fully operational all the time	15%	13%	11%	42%	19%	3.77	.986
Water Sources have enough equipment for project success.	42%	11%	8%	13%	26%	2.53	1.119
Water Sources fully address the needs of Public members.	38%	16%	4%	30%	12%	2.95	1.197

Source: Primary data (2016)

Results in Table 4.2 above show that 70% of the respondents agreed that water equipment are functional most of the time. On the other hand, 21% disagreed, 9% were not sure. The corresponding mean for the statement was 3.66 which is above average while the standard deviation was .959, representing the number of respondents who gave varying responses. The mean is above average, it implies that majority respondents held the view that water equipment are functional most of the time. On whether equipment for water sources are effectively used, 76% agreed, 14% disagreed, 10% were not sure. The findings were verified with mean value of 3.66 which is above average while the standard deviation was 1.025. This implies that due to public participation, equipment for water sources is effectively used. The above findings were supported by an interviewee who had this to say;

*“Equipment for water sources are effectively used and protected because if not properly handled, community members will run short of water which is essential for their lives.”*

During the study, respondents were asked whether there is sustained water supply to the public. To this, 64% of the respondents agreed, 24% disagreed while 12% were not sure. The corresponding mean value for the statement was 3.33 which is above average while the standard deviation was 1.059. This implies that majority of the respondents supported the statement.

That there is effective accountability of funds for water sources was supported by 37% of the respondents while majority 59% disagreed and 5% were not sure. The above statistics were verified with mean of 2.48 which is below average while the standard deviation was 1.093, representing the number of respondents with varying responses. This shows that very few respondents held the view that there is effective accountability of funds for water sources. The above findings were supported by an interviewee who had this to say;

*“There is inadequate accountability of funds for water sources because of corruption tendencies on the water sector. Each village was supposed to have at least three bore holes, but only one was constructed, yet funds to construct three boreholes were released by donors”.*

When respondents were asked whether water sources are fully operational all the time 61% agreed, 28% disagreed, 11% were not sure. The obtained mean value for the statement was 3.77 which is above average while the standard deviation was 0.986, implying that some respondents gave varying responses.

On whether water sources have enough equipment for project success, only 39% of the respondents agreed. Majority 53% disagreed while 13% were not sure. The statistics were verified with mean of 2.53 which is below average and the standard deviation of 1.119. This implies that few respondents held the view that water sources have enough equipment for project success. The above findings were further supported by a key informant during face to face interviews when he said;

*“Water sources do not have enough equipment for project success because when a borehole breaks down, it takes more than six months to get repaired due to lack of equipment. This has a negative effect on water supply to community members.”*

That water sources fully address the needs of public members was supported by 42% while 54% disagreed and 4% were not sure. The obtained mean for the statement was 2.95 which is below average while the standard deviation was 1.197, implying that some respondents gave varying responses.

Overall, the results indicate that sustainability of water sources has been affected by inadequate accountability of funds for water sources due to corruption tendencies. This has affected the availability of equipment for project success and further limited the ability of water sources to address the needs of public members.

#### **4.3.2 Participation in planning and sustainability of water sources**

A set of questions were also asked on public participation in planning which covered needs identification, work plan development and technology selection. The results obtained are indicated in Table 4.3 below;

**Table 4.3 Responses in public participation in planning**

<b>Planning</b>	<b>SD</b>	<b>D</b>	<b>NS</b>	<b>A</b>	<b>SA</b>	<b>Mean</b>	<b>Std. Devn.</b>
Public members are involved in identifying project needs during the planning stage.	3%	57%	6%	14%	20%	2.80	1.179
The project hires experts in the project to participate in needs identification.	1%	18%	12%	53%	16%	3.91	1.064
Needs identification answers all questions about water Sources.	14%	8%	5%	53%	20%	3.58	.969
Needs identification considers Sources' identical indicators.	4%	19%	9%	54%	14%	3.37	1.221
Identification of needs integrates information obtained from assessments by Public members.	2%	11%	5%	59%	23%	4.05	.054
Public members are involved in drafting a work plan to follow while carrying out water Sources' activities.	39%	23%	14%	4%	21%	2.77	1.191
Public members participate in formulating a budget used by funding agencies for justifying the release of money.	45%	23%	5%	2%	25%	2.52	1.122
Water Sources have work plans used to identify a specific time segments within that project	10%	6%	14%	50%	20%	3.85	1.087
Project work plans are used to identify the problems to be solved, makes them finite, precise and verifiable as objectives.	21%	18%	10%	55%	6%	3.56	.957
Public members are involved in the selection of appropriate technologies.	53%	15%	5%	14%	13%	2.63	1.050

**Source: Primary data (2016)**

According to results in Table 4.3 only 34% of the respondents agreed that public members are involved in identifying project needs during the planning stage. Majority 60% disagreed while 6% were not sure. The corresponding mean obtained for the statement was 2.80 which is below average while the standard deviation was 1.1179. Since the mean was below average, it implies that few respondents held the view that public members are involved in identifying project needs during the planning stage. The above findings were supported by a respondent who had this to say;

*“few public members are involved in identifying project needs. In most cases, the staff members at the district and councilors represent community members to identify needs. Sometimes, some of the identified needs are not the priority needs of community members”*

When respondents were asked whether the project hires experts in the project to participate in needs identification, 69% agreed, 19% disagreed while 12% were not sure. The results were verified with the mean value of 3.91 which is above average and a standard deviation of 1.064. This shows that the project hires experts in the project as confirmed by one of the respondents.

Findings from the study further revealed that needs identification answers all questions about water sources as reported by majority 73% of the respondents. However, 22% disagreed while 5% were not sure. The corresponding mean value was 3.58 which is above average while the standard deviation was .969, implying that some respondents did not agree with the statement. In addition, 68% of the respondents revealed that needs identification considers sources' identical indicators although 23% disagreed while 9% were not sure with mean on 3.37 and standard deviation of 1.221. Since the obtained mean was above average, it implies that most respondents were in agreement with the statement. The above findings were further supported by a respondent who had this to say;

*“In the water sector, needs identification considers sources' identical indicators such as in adequate access to water sources, the distance which one walks to reach the nearest water point and many other indicators that warrant water supply in an area.”*

Findings from the study further revealed that identification of needs integrates information obtained from assessments by public members. This was supported by 82% of the respondents although 13% disagreed while 5% were not sure. The corresponding mean obtained for the statement was 4.05 which is above average while the standard deviation was .054. These shows that majority of the respondents held the view that identification of needs integrates information obtained from assessments by public members.

When respondents were asked whether public members are involved in drafting a work plan to follow while carrying out water sources' activities, only 25% of the respondents agreed. Majority 62% agreed, while 14% were not sure. The obtained mean for the statement was 2.77 which is below average while the standard deviation was 1.191 which suggests that public members are not involved in drafting a work plan to follow while carrying out water sources' activities. The above findings were supported by a respondent who had this to say;

*“Public members are not involved in drafting a work plan to follow while carrying out water sources activities. The plan is mostly done by the district engineer and other technical people from the department of natural resources.”*

Relatedly, only 30% of the respondents revealed that public members participate in formulating a budget used by funding agencies for justifying the release of money. Majority 68% disagreed while 5% were not sure. The findings were verified with a mean value of 2.52 which is below average while the standard deviation was 1.122. This implies that few members were in agreement with the statement.

On whether water sources have work plans used to identify a specific time segments within that project 70% agreed, 16% disagreed, 14% were not sure. The corresponding mean for the

statement was 3.85 which is way above average while the standard deviation was 1.087 implying that some respondents gave varying responses. Since the obtained mean was above average, it implies that most respondents held the view that water sources have work plans used to identify a specific time segment within that project.

That project work plans are used to identify the problems to be solved, makes them finite, precise and verifiable as objectives was consented to by 61% of the respondents. However, 39% disagreed while 10% were not sure. The results were verified with a mean of 3.56 which is above average and standard deviation of .957. Asked whether public members are involved in the selection of appropriate technologies, 27% agreed, 68% disagreed while 5% were not sure. The corresponding mean value for the statement was 2.63 which is below average while the standard deviation was 1.050 which implied that some respondents did not agree with the statement. The above findings were further supported by a respondent who had this to say;

*“When selecting appropriate technologies, public members are not involved. It is assumed that it is the work of engineers and other specialists in the water sector. Indeed community members may not have good knowledge of appropriate technologies.”*

#### **4.3.2.1 Public participation in project planning and sustainability of water Sources**

The study examined the relationship between public participation in project planning and sustainability of water sources. In order to establish the direction of relationship between these variables, Pearson (r) correlation coefficient was computed as shown in Table below.

**Table 4.4 Correlation matrix for Public participation in project planning and sustainability of water Sources**

		<b>Correlations</b>	
		Planning	Sustainability
Planning	Pearson Correlation	1	.539**
	Sig. (2-tailed)		.000
	N	80	80
Sustainability	Pearson Correlation	.539**	1
	Sig. (2-tailed)	.000	
	N	80	80

\*\* . Correlation is significant at the 0.01 level (2-tailed).

Results in table 4.4 shows that the correlation coefficient was 0.539\*\* which shows a strong positive relationship between the two variables, and its significance 0.000 at the 0.01 level which is less than 0.05 level of significance. This implies that planning has a positive significant relationship with sustainability of water source. Therefore, if the public is given an opportunity to participate in needs identification, work plan development and technology selection, they will greatly contribute to the sustainability of water source. On the other hand, if public members do not participate in the planning process, water sources are likely not to be sustainable. From all the results obtained, the hypothesis that “there is a positive significant relationship between public participation in project planning and sustainability of water Sources” was accepted.

### **4.3.3 Public participation in implementation**

A set of questions were also asked on public participation in implementation of water projects. The questions covered establishment of water, maintenance, donor support and leadership skill development. Below are the responses the researcher obtained from respondents.

**Table 4.5 Responses in public participation in implementation and sustainability of water sources**

<b>Implementation</b>	<b>SD</b>	<b>D</b>	<b>NS</b>	<b>A</b>	<b>SA</b>	<b>Mean</b>	<b>Std.Dev</b>
Public members participate in provision of essential needs like digging of wells.	5%	10%	9%	52%	24%	3.63	.894
Public members participate in conducting training to water user committees.	4%	18%	11%	35%	32%	3.84	.940
Public members are involved in maintenance of equipment for water Sources	12%	14%	6%	41%	27%	3.58	.931
Public members participate in inspections of water Sources.	5%	29%	11%	36%	19%	3.94	.925
Public members are involved in the leadership of water Sources	15%	6%	6%	32%	41%	4.04	.926
The project team is accountable to Public members on project activities	53%	18%	9%	1%	19%	2.31	1.192
Public members make financial contributions to the implementation of water Sources	43%	27%	10%	14%	6%	2.28	1.199
Public members contribute material support to the implementation of water Sources	15%	11%	7%	42%	25%	3.82	1.010
People are encouraged to become involved in sources that benefit from local skills	12%	13%	14%	48%	13%	3.85	.878
Public participation contributes to better outcomes of water Sources.	2%	14%	6%	41%	37%	3.65	.948

Source: Primary data (2016)

According to results in Table 4.5, 76% of the respondents agreed that public members participate in provision of essential needs like digging of wells. On the other hand, 15% disagreed while 9% were not sure. The corresponding mean obtained for the statement was 3.63 which is above average, implying that most respondents were in agreement with the statement. On the other hand, the standard deviation of 894 signified that there were few

respondents who gave varying responses. The above findings were supported by a respondent who had this to say;

*“...since community members are the end users of water sources, they always participate in the provision of essential needs like drilling of well, and sometimes offering pieces of land where wells and bore holes can be constructed.”*

On whether public members participate in conducting training to water user committees, 22% agreed, 67% disagreed while 11% were not sure. The results were verified with the mean of 2.44 which is below average and standard deviation of 1.190 representing the number of respondents with varying responses.

Results in Table 4.8 further revealed that public members are involved in maintenance of equipment for water sources. This was supported by 68% of the respondents who agreed compared to 26% who disagreed while 11% were not sure. The results were verified with a mean of 3.58 which is above average and standard deviation of 0.931. This shows that most respondents held the view that public members are involved in the maintenance of equipment for water sources. The above findings were further supported by an interviewee who had this to say;

*“public members are responsible for maintaining and protecting equipment of water sources since they are the beneficiaries.”*

Asked whether public members participate in inspections of water sources, 74% of the respondents agreed, 15% disagreed while 11% were not sure. The corresponding mean value for the statement was 3.94 which is way above average while the standard deviation was .925. This shows that most respondents agreed with the statement.

When respondents were asked whether public members are involved in the leadership of water sources, 38% of the respondents agreed, 56% disagreed while 6% were not sure. The findings were verified with a mean of 4.04 which is way above average and standard deviation of .926 which represents the number of respondents with varying responses.

That the project team is accountable to public members on project activities was confirmed by only 20% of the respondents. Majority 71% disagreed while 9% were not sure. The obtained mean for the statement was 2.31 which is far below the average while the standard deviation was 1.192, implying that some respondents gave varying responses. In addition, only 20% of the respondents agreed that public members make financial contributions to the implementation of water sources. Majority 70% disagreed while 10% were not sure. The corresponding mean obtained was 2.28 which is below average and standard deviation, 1.199 which shows variations in the responses obtained. The above findings were supported by a respondent who had this to say;

*“...community members do not make financial contributions to the implementation of water sources. They instead make material contributions such as land where water sources can be constructed as well as providing the required labour during community work.”*

Study findings revealed that public members contribute material support to the implementation of water sources as revealed by 67% of the respondents. However, 26% disagreed while 7% were not sure. The corresponding mean obtained for the statement was 3.82 which is way above average and standard deviation of 1.010 which implied that some respondents gave varying responses.

That people are encouraged to become involved in sources that benefit from local skills was supported by 61% of the respondents, although 25% disagreed while 14% were not sure with a mean value of 3.85 and standard deviation of .878. The study further showed that public participation contributes to better outcomes of water sources. This was supported by 78% of

the respondents while 16% disagreed and 6% were not sure. The results were verified with a mean value of 3.65 which is above average while the standard deviation .948 implied that some respondents gave varying responses.

#### 4.3.3.1 Public participation in project implementation and sustainability of Water Sources

The study examined the relationship between public participation in project implementation and sustainability of water sources. In order to establish the direction of relationship between these variables, Pearson (r) correlation coefficient was computed as shown in Table below.

**Table 4.6 Correlation matrix for Public participation in project implementation and sustainability of water Sources**

		<b>Correlations</b>	
		Implementation	Sustainability
Implementation	Pearson Correlation	1	.595**
	Sig. (2-tailed)		.000
	N	80	80
Sustainability	Pearson Correlation	.595**	1
	Sig. (2-tailed)	.000	
	N	80	80

\*\* . Correlation is significant at the 0.01 level (2-tailed).

Results in table 4.6 show that the correlation coefficient was 0.595\*\* which shows a strong positive relationship between the two variables, and its significance 0.000 at the 0.01 level which is less than 0.05 level of significance. This implies that public participation in project implementation has a positive significant relationship with sustainability of water source. Therefore, if the public is given an opportunity to participate in the project implementation through establishment of water sources, maintenance, donor support and leadership skill development, there will be improved sustainability of water sources. On the other hand, if public members do not participate in the implementation process, water sources are likely not to be sustainable. From all the results obtained, the hypothesis that “there is a positive

significant relationship between public participation in project implementation and sustainability of Water Sources” was accepted.

#### 4.3.4 Public participation in monitoring and sustainability of water sources

A set of questions were also asked on public participation in monitoring of water sources. The questions covered performance analysis, appraisal and information dissemination. Below are the responses the researcher obtained from respondents.

**Table 4.7 Responses on public participation in monitoring**

<b>Monitoring</b>	<b>SD</b>	<b>D</b>	<b>NS</b>	<b>A</b>	<b>SA</b>	<b>Mean</b>	<b>Std. Dev.</b>
Public monitoring of water Sources contributes to social accountability for the provided services	1%	13%	7%	42%	37%	3.67	.970
Public members participate in local budget monitoring for water Sources.	30%	36%	14%	10%	9%	2.28	1.169
Public members are involved in effective dissemination of information about Sources.	2%	16%	9%	49%	22%	3.78	1.046
Public members are involved in developing a framework for measuring project results.	47%	35%	12%	2%	4%	2.14	1.961
Monitoring is an integral part of implementation process.	1%	7%	15%	48%	28%	3.94	1.054
Monitoring supports quality control, and contribute to best practice	4%	3%	10%	53%	30%	3.96	.854
Participatory monitoring helps public members to make informed decisions regarding water Sources.	10%	6%	7%	44%	32%	3.87	.897
There is periodical participation in quality inspections on water Sources.	7%	14%	12%	37%	30%	3.76	.866
There is proper documentation for reviews and monitoring reports	41%	7%	15%	8%	28%	3.78	.983

**Source: Primary data (2016)**

Results in Table 4.7 above show that 79% of the respondents agreed that public monitoring of water sources contributes to social accountability for the provided services. On the other hand, 14% disagreed while 7% of the respondents were not sure. The corresponding mean for the statement was 3.67 which is above average while the standard deviation of .970 represented the number of respondents with varying responses. This shows that when the

public members are involved in monitoring and evaluation of water sources, there will be improved social accountability which in turn leads to sustainability.

When respondents were asked whether public members participate in monitoring local budget for water sources only 19% agreed while majority 66% disagreed and 14% were not sure. The findings were verified with a mean of 2.28 which is below average and standard deviation of 1.169. Since the obtained mean was below average, it implies that very few respondents were in agreement with the statement. The above findings were confirmed by a respondent during face to face interviews when he said;

*“Public members are not involved in local budget monitoring. It is on the District team and staff members from the department of natural resources/water who are involved in budgeting and budget monitoring.”*

The study further revealed that public members are involved in effective dissemination of information about sources. This was reported by 71% of the respondents compared to 18% who disagreed and 9% that were not sure. The obtained mean for the statement was 3.78 which is above average while the standard deviation was 1.046. This implies that most respondents held the view that public members are involved in effective dissemination of information about sources.

During the study, only 6% of the respondents agreed that public members are involved in developing a framework for measuring project results. Majority 82% of the respondents disagreed while 12% were not sure. The obtained mean for the statement was 2.14 which is way below average while the standard deviation was 1.961. Since the obtained mean was below average, it implies that very few respondents agreed with the statement. The above findings were further confirmed during face to face interviews when one of the respondents had this to say;

*“Public members are not involved in developing a framework for measuring project results. The framework is developed by the water sector together with donors and Ministry of Water and Environment.”*

When respondents were asked whether monitoring is an integral part of participatory program design and implementation process, 76% of the respondents agreed, while 8% disagreed and 15% were not sure. The corresponding mean for the statement was 3.94 which is above average and standard deviation of 1.054 representing the number of respondents with varying responses. In addition, monitoring supports genuine accountability and ensures quality control, and contributes to best practice. This was reported by 83% of the respondents although 7% disagreed while 10% were not sure. The obtained mean value for this statement was 3.96 which is above average and standard deviation of .854 which implies that there were variations in the responses obtained.

Study findings further revealed that participatory monitoring helps public members to make informed decisions regarding water sources. This was confirmed by 76% of the respondents who agreed with the statement. Only 16% disagreed while 7% were not sure. The obtained mean for the statement was 3.87 which is above average and standard deviation of .897. This shows that most respondents were in support of the statement. The above findings were supported by a respondent who had this to say;

*“Public participation in monitoring of water resources is good because the public/community members are the end users of water. Therefore if they are involved in monitoring, there will be minimal damage on water sources which leads to sustainability.”*

When respondents were asked whether there is public periodical participation in quality inspections on water sources, 67% of the respondents agreed although 21% disagreed and

12% were not sure. The corresponding mean for the statement was 3.76 which is above average while the standard deviation was .866. On whether there is proper documentation for reviews and monitoring reports, only 36% of the respondents agreed while majority 48% disagreed and 15% were not sure. The corresponding mean for the statement was 2.78 which is below average while the standard deviation was 1.983. Since the obtained mean is below the average, it implies that very few respondents were in agreement with the statement.

#### 4.3.4.1 Public participation in project Monitoring and sustainability of water Sources

The study examined the relationship between public participation in project monitoring and sustainability of water sources. In order to establish the direction of relationship between these variables, Pearson (r) correlation coefficient was computed as shown in Table below.

**Table 4.8 Correlation matrix for Public participation in project Monitoring and sustainability of water Sources**

		<b>Correlations</b>	
		Monitoring	Sustainability
Monitoring	Pearson Correlation	1	.764**
	Sig. (2-tailed)		.000
	N	80	80
Sustainability	Pearson Correlation	.764**	1
	Sig. (2-tailed)	.000	
	N	80	80

\*\* . Correlation is significant at the 0.01 level (2-tailed).

Results in table 4.8 shows that the correlation coefficient was 0.764\*\* which shows a strong positive relationship between the two variables, and its significance 0.000 at the 0.01 level which is less than 0.05 level of significance. This implies that public participation in project monitoring has a positive significant relationship with sustainability of water sources. Therefore, if the public is involved in performance analysis, appraisal and information dissemination regarding project activities, water sources will be sustainable. On the other

hand, if public members do not participate in monitoring water projects, water sources are likely not to be sustainable. From all the results obtained, the hypothesis that “there is a positive significant relationship between Public participation in project Monitoring and sustainability of water sources” is accepted.

#### 4.3.5 Multiple regression analysis

In the table 4.9 below, the researcher presents the magnitude of public participation in planning, implementation and monitoring on sustainability of water sources. This was done to determine the better predictor component of sustainability of water sources in Kigumba Sub county, Kiryandongo district.

**Table 4.9 Regression Analysis of the component variables**

Model	Un standardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	.480	.309		1.551	.125
Planning	.017	.117	.017	.147	.884
Implementation	.031	.133	.030	.229	.820
Monitoring	.698	.113	.730	6.197	.000
<b>R =0.765 R- square = 0.585 F= 35.213 Sig = 0.000</b>					

**Source: Primary data (2016)**

The table 4.9 above shows the components of public participation that is; planning, implementation and monitoring which significantly predict sustainability of water sources as shown by significance level (.000). The regression analysis showed that the study variables had a strong positive relationship with sustainability of water sources ( $r=0.765$ ). Thus the study variables explain 58.5% of the variance in sustainability of water resources in Kigumba sub county, Kiryandongo district.

The findings further revealed that public participation in monitoring (Beta= .730, Sig. < .000) was a better predictor of sustainability of water sources. However, participation in planning (Beta = .017, Sig. < .884) and implementation (Beta= .030, Sig. < .820) were not significant predictors of sustainability of water sources. This implies that the participation of the public in monitoring is of paramount importance in order to ensure sustainability of water sources in Kigumba Sub county, Kiryandongo district.

## CHAPTER FIVE

### SUMMARY, DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

#### 5.0 Introduction

This chapter presents the discussion of the study findings as presented in chapter four, conclusions and recommendations, limitation of the study, plus areas for further research.

#### 5.1 Summary

The main purpose of the study was to examine the relationship between Public participation and sustainability of water Sources in Kigumba Sub County, Kiryandongo District in Uganda. The specific objectives of the study were; to assess the relationship between Public participation in project planning and sustainability of water sources, to examine the relationship between Public participation in project implementation and sustainability of water sources and to assess the relationship between Public participation in project monitoring and sustainability of water sources in Kigumba Sub County, Kiryandongo District.

##### 5.1.1 Public participation in project planning and sustainability of water sources

Pearson's correlation coefficient for public participation in project planning and sustainability of water sources of in Kigumba Sub county, Kiryandongo District was  $r = 0.539^{**}$ , with probability value ( $p = 0.000$ ) that is less than 0 .05 level of significance showing a strong relationship between participation in planning and sustainability of water sources.

##### 5.1.2 Public participation in project implementation and sustainability of Water Sources

Pearson's correlation coefficient for public participation in project implementation and sustainability of water sources in Kigumba Sub County, Kiryandongo District was  $r = 0.595^{**}$ , with probability value ( $p = 0.000$ ) that is less than 0 .05 level of significance

showing a strong relationship between public participation in project implementation and sustainability of water sources.

### **5.1.3 Public participation in project Monitoring and sustainability of water Sources**

Pearson's correlation coefficient for public participation in project monitoring and sustainability of water sources in Kigumba Sub county, Kiryandongo District was  $r = 0.764^{**}$ , with probability value ( $p = 0.000$ ) that is less than 0 .05 level of significance showing a strong relationship between public participation in project monitoring and sustainability of water sources.

## **5.2 Discussion**

### **5.2.1 Public participation in project planning and sustainability of water sources.**

During the study, it was established that few public members are involved in identifying project needs during the planning stage. This is contrary to Rifkin (2009), who asserted that "community member should be involved in identifying their own needs". According to him, "public development should place much discussion specifically in promotion of participation by community members". However, findings from this study revealed that few public members are involved in identifying project needs. In most cases, the staff members at the district and councilors represent community members to identify needs. Sometimes, some of the identified needs are not the priority needs of community members, which affect the sustainability of water sources. This is corroborated by Atkinson et al., (2011) who contend that "community representation by leaders may not be adequate to identify and address the immediate challenges people face".

Study findings further revealed that the project hires experts in the project to participate in needs identification. This is supported by Gibson and Pappas (2003) who asserted that "needs are not directly assessed, but rather, the identification of needs is the result of a complex

process that requires expert personnel, integration and synthesis of many factors, including the results from numerous assessments specialists”. Therefore, if the project hires experts there are high chances of providing quality services that contribute to project sustainability. Findings from the study further revealed that needs identification answers all questions about water sources as reported by majority. This is consistent with Kusek & Rist, (2004) who argued that “the assessments synthesized into needs should address all concerns such as the pre-event levels of function, the amount and types of damage sustained initially and existing at the current time; current levels of function and the levels of function detected by the last assessment, the presence of a surge, the demands of the population affected, the culture in which the event occurred, the climate in the affected area, the geography and access to the affected area; and politics”.

In addition, study findings revealed that needs identification considers sources’ identical indicators. This is consistent with Bartle (2007) who revealed that “in order to identify needs, assessments and requirements must use identical indicators”. Needs are expressed in terms of goods and/or services. In the water sector, needs identification considers identical indicators such as inadequate access to water sources, the distance that one walks to reach the nearest water point and many other indicators that warrant water supply in an area.

Findings from the study further revealed that identification of needs integrates information obtained from assessments by public members. In addition, public members are involved in drafting a work plan to follow while carrying out water sources’ activities. This is further supported by Gibson and Pappas (2003) who contend that “a work plan is required and should be based upon a project already approved, and identify a specific time segment within that project or programme”. Other study findings indicated that public members are not

involved in drafting a work plan to follow while carrying out water sources activities. The plan is mostly done by the district engineer and other technical people from the department of natural resources.

According to study findings, few public members are involved in the selection of appropriate technologies. When selecting appropriate technologies, most public members are not involved. It is assumed that it is the work of engineers and other specialists in the water sector. Indeed community members may not have good knowledge of appropriate technologies. This is corroborated by Rosenfeld and Shoheit (1999) who stated that “projects need to consider emerging technologies and tools which have great potential to help project teams mitigate risks associated with unknown existing site and equipment conditions or other factors”.

### **5.2.2 Public participation in project implementation and sustainability of water Sources**

Study findings established that public members participate in provision of essential needs like digging of wells. This promotes sustainability because community members feel ownership of the project and the related activities. This is corroborated by Bernfield (2001) who revealed that “process implementation should involve active participation of community members to promote ownership and project sustainability”. Similarly, Cueto (2004) supported that “public participation assumes that people would be more supportive, people would provide resources, people would change risky behaviors and people will be empowered”.

Findings from the study revealed that few public members participate in conducting training to water user committees although they are involved in maintenance of equipment for water sources. This is consistent with Rifkin (2009) who asserted that “public members should be responsible for maintaining and protecting equipment of water sources since they are the

beneficiaries”. In addition, Bartle (2007) contends that, “in the water sector community members should be involved in procedures for conducting training to water user committee, supervision of pump mechanics and reporting on the expressed needs of the Public”. It was further established that public members participate in inspections of water sources. This is consistent with Gibson and Pappas (2003) who stated that “frequent, regular inspections are a major component of an effective maintenance system”. The agency requires management, at a minimum, to perform an annual inspection of each unit. Inspecting a unit establishes its condition and may help clarify responsibility for any damages that have occurred.

Study findings found that few public members are involved in the leadership of water sources. This is contrary to Camino and Zeldin (2002) who asserted that “quality local leadership, training and supervision, and democratic input and involvement are important components of Public participation”.

### **5.2.3 Public participation in project monitoring and sustainability of water sources**

During the study, it was established that public monitoring of water sources contributes to social accountability for the provided services. This is consistent with Khemani (2008) who revealed that “the need for public monitoring in public service development is premise in the fact that, local oversight raises social accountability for public service providers”. However, study findings revealed that few public members participate in monitoring local budget for water sources only, yet Larrauri (2009) asserted that “public monitoring of programs was beneficial for local budget monitoring”. Public members are not involved in local budget monitoring. It is on the District team and staff members from the department of natural resources/water who are involved in budgeting and budget monitoring.

Findings from the study revealed that public members are involved in effective dissemination of information about sources. This is consistent with Kiyimba (2011) who noted that “sharing and disseminating information in an appropriate, targeted and timely fashion is a frequent distinguishing characteristic of monitoring and evaluation utilization and that all information needs to be relevant, timely and written in an understandable form addressing the questions that need to be answered and be presented in a form best understood”. Study findings revealed that monitoring is an integral part of participatory program design and implementation process. This is supported by Barnes (2007) who asserted that “monitoring and evaluation is an integral part of participatory program design and implementation process. Monitoring and evaluation measures progress, adjustments, and notifications and provides periodically analyzed information for decision makers to agree on the objectives and activities”.

According to findings from this study, monitoring supports genuine accountability and ensures quality control, and contributes to best practice. In addition, participatory monitoring helps public members to make informed decisions regarding water sources. This is consistent with Matov (2015) who suggested that “participation in monitoring is rights based and establishes identity and interests which are critical for achieving quality”.

## **5.3 Conclusions**

### **5.3.1 Public participation in project planning and sustainability of water sources**

Basing on study findings, it was concluded that public participation in project planning has a strong positive relationship with sustainability of water sources. This conclusion was based on Pearson correlation coefficient which as at 539\*\* with a significance level of 0.000. Therefore, if public members are involved in the planning stage such as needs identification, work plan development and technology selection, there will be improved sustainability of water sources.

### **5.3.2 Public participation in project implementation and sustainability of Water Sources**

In line with findings from this study, it was concluded that there is a strong positive relationship between public participation in project implementation and sustainability of water sources. This conclusion was based on Pearson correlation coefficient which as at 595\*\* with a significance level of 0.000. Therefore, if community members are involved in establishment of water sources, maintenance, donor support and leadership skill development, there will be improved sustainability of water sources in the area.

### **5.3.3 Public participation in project Monitoring and sustainability of water Sources**

According to study findings, it was concluded that there is a strong positive relationship between public participation in project monitoring and sustainability of water sources. This conclusion was based on Pearson correlation coefficient which as at 764\*\* with a significance level of 0.000. Therefore, if Kiryandongo District involves the public in performance analysis, appraisal and information dissemination, there will be improved sustainability of water sources.

## **5.4 Recommendations**

### **5.4.1 Public participation in project planning and sustainability of water**

The study recommends that public members should be involved in drafting work plans to follow while carrying out water sources' activities. This will promote community involvement and participation which will enhance ownership and sustainability of water sources.

### **5.4.2 Public participation in project implementation and sustainability of Water Sources**

The study further recommends that the project team should be accountable to public members on project activities. This will promote effective and efficient utilization of resources which

will lead to project sustainability. In addition, community members should be encouraged to make financial contributions to the implementation of water sources in situations where the damage is minimal and may not wait for funding from Government or donor agencies.

#### **5.4.3 Public participation in project Monitoring and sustainability of water Sources**

In addition, the study recommends that public members participate in local budget monitoring for water sources to ensure that financial resources are put to proper and intended use. In addition, public members should be involved in developing a framework for measuring project results.

#### **5.5 Area for further study**

Further study may be conducted on factors that affect effective monitoring and evaluation of water projects in Kigumba sub county in Kiryandongo District. This is because the study revealed that there is limited local participation in the monitoring and evaluation of water sources which may affect sustainability.

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## Appendices

### Appendix i: Survey questionnaire for Public members

#### **PUBLIC PARTICIPATION AND SUSTAINABILITY OF WATER SOURCES IN KIGUMBA SUB-COUNTY, KIRYANDONGO DISTRICT-UGANDA**

*I am **Ogwang Adar Denis**, a master's degree student from Uganda Management Institute undertaking the above study. I request you to kindly fill in this questionnaire using the guideline below. Your responses will be treated with utmost confidentiality.*

#### **SECTION A: BACKGROUND INFORMATION**

*Please tick one option regarding your background.*

1. Your sex:    1. Male        2. Female
2. Age range: 1. 16-25        2. 26-30        3. 31 and above
3. Type of Water source provided:
  1. Shallow well.
  2. Spring well
  3. Borehole
  4. Pipe Water
4. Category of Public member:
  1. Refugee
  2. Indigenous
5. Years lived in the Public:
  1. 1-10 years
  2. 10 years and above

**SECTION B: Public Participation in Planning**

For each statement below, please tick one alternative that corresponds with your opinion. Use the following scale: 1=strongly disagree (SD), 2=Disagree (D), 3=Undecided (UD), 4=Agree (A), 5=strongly agree (SA).

	<b>Planning</b>	<b>SD</b>	<b>D</b>	<b>NS</b>	<b>A</b>	<b>SA</b>
1	Public members are involved in identifying project needs during the planning stage.					
2	The project hires experts in the project to participate in needs identification.					
3	Needs identification answers all questions about water Sources.					
4	Needs identification considers Sources' identical indicators.					
5	Identification of needs integrates information obtained from assessments by Public members.					
6	Public members are involved in drafting a work plan to follow while carrying out water Sources' activities.					
7	Public members participate in formulating a budget used by funding agencies for justifying the release of money.					
8	Water Sources have work plans used to identify a specific time segments within that project					
9	Project work plans are used to identify the problems to be solved, makes them finite, precise and verifiable as objectives.					
10	Public members are involved in the selection of appropriate technologies.					

**SECTION C: Public participation in implementation**

	<b>Implementation</b>	<b>SD</b>	<b>D</b>	<b>NS</b>	<b>A</b>	<b>SA</b>
1	Public members participate in provision of essential needs like digging of wells.					
2	Public members participate in conducting training to water user committees.					
3	Public members are involved in maintenance of equipment for water Sources					
4	Public members participate in inspections of water Sources.					

5	Public members are involved in the leadership of water Sources					
6	The project team is accountable to Public members on project activities					
7	Public members make financial contributions to the implementation of water Sources					
8	Public members contribute material support to the implementation of water Sources					
9	People are encouraged to become involved in Sources that benefit from local skills					
10	Public participation contributes to better outcomes of water Sources.					

#### **Section D: Public participation in monitoring**

	<b>Monitoring</b>	<b>SD</b>	<b>D</b>	<b>NS</b>	<b>A</b>	<b>SA</b>
1	Public monitoring of water Sources contributes to social accountability for the provided services					
2	Public members participate in monitoring local budget monitoring for water Sources.					
3	Public members are involved in effective dissemination of information about Sources.					
4	Public members are involved in developing a framework for measuring project results.					
5	Monitoring is an integral part of participatory program design and implementation process.					
6	support genuine accountability and ensure quality control, and contribute to best practice					
7	Participatory monitoring increases helps Public members to make informed decisions regarding water Sources.					
8	There is Public periodical participation in quality inspections on water Sources.					
9	There is proper documentation for reviews and monitoring reports					

## Section E: Sustainability

No	Sustainability	SD	D	UD	A	SA
C.1.	Water equipment are functional most of the time	1	2	3	4	5
C.2	Equipment for water Sources are effectively used	1	2	3	4	5
C.3	There is sustained water supply to the Public	1	2	3	4	5
C.4	There is effective accountability of funds for water Sources	1	2	3	4	5
C.5	Water Sources are fully operational all the time	1	2	3	4	5
C.6	Water Sources have enough equipment for project success.	1	2	3	4	5
C.7	Water Sources fully address the needs of Public members.	1	2	3	4	5

## **Appendix ii: Key informant interview guide**

### Section A: Background Information

- A1 Your gender.....
- A2 Years spent in the district.....
- A3 Title being held.....

### Section B: Independent Variables

- B1 How is planning on water done in the district?
- B2 How do you determine the actual needs of the Public members?
- B3 How does a work plan that you have ensures sustainability?
- B4 How has the water user committees supported sustainability? Are there success stories?
- B5. How are communities supported by the district in maintenance of their water sources?
- B6. How are monitoring reports from the Public used in the district?
- B7. How does Public meeting influence sustainability?
- B8 What is being done to promote the culture of meetings for sustainability at the district level?
- B9. How the district local government does ensure that every member of the Public participates in planning, implementation and monitoring of water Sources?

### Section C: Dependent variables

- C1. How does the current user fee regime contribute to effective sustainability of the water Sources?
- C2. How are the existing water user committee systems accountable to the interest of the Public?
- C3. How does participation in planning, implementation and monitoring by the Public lead to effective financial sustainability of Public Sources?
- C4. How are technical trainings and maintenance sustained within the Public structures?
- C5. How are the existing institutional arrangements supporting sustainability of the water Sources?
- C6. How effective are the bylaws in ensuring effective sustainability of water Sources.

### **Appendix iii: Focus group discussion guide for Public members**

#### Section A: Dependent Variables

- A1 Your Public.....
- A2 Public participation Sources received.....

#### Section B: Independent variables

- B1 How is planning on water done in your Public?
- B2 How do you determine the most pressing needs in your Public members?
- B3 How do you participate at local government at work plan development?
- B4 Are there success stories that were achieved when you were involved in Project planning at your local level?
- B5. How are communities supported by the district in maintenance of their water sources?
- B6. How monitoring reports from the district used in the Public?
- B.7. How does a Public meeting influence sustainability of Sources?
- B.8 What is being done to promote the culture of meetings for sustainability at the Public level?
- B9. How the Public does participate in planning, implementation and monitoring of water Sources?

#### Section C: Dependent variables

- C1. How does the current user fee regime contribute to effective sustainability of the water Sources?
- C2. How are the existing water user committee systems accountable to the interest of the Public?
- C3. How does participation in planning, implementation and monitoring by the Public lead to effective financial sustainability of Public Sources?
- C4. How are technical trainings and maintenance sustained within the Public structures?
- C5. How are the existing institutional arrangements supporting sustainability of the water Sources?
- C6. How effective are the bylaws in ensuring effective sustainability of water Sources?

**Appendix iv: Observation guide on visible items and activities**

Guiding Item	Yes	No
1. Are all the available water points working?		
2. Are all the available water points in good mechanical condition?		
3. Are the available water facilities enough for all Public members?		
4. Are the water User committees availing information to all?		
5. Are people paying water user fees?		
6. Are there functional water user committees?		
7. Is water accessible by all?		
8. Are there records of water finance use to the public?		
9. Are there records of regular committee meetings?		
10. Are there records expenditures on maintenance of the water?		
11. Are there records of savings derived from collection of water fees?		

## Appendix v: Documentary review guide

Guiding item	Yes	No
1. Document on water development policy in Uganda		
2. Document on Public training schedules in Kiryandongo District		
3. Financial document showing expenditures on water Sources		
4. Document showing NGO intervention in water sector in Uganda		
5. Public Score cards in Kiryandongo District		
6. Citizen report card for Kiryandongo District		
7. Civil society capacity support to Kiryandongo District		

**Appendix vi: Table for Determining Sample Size from a Given Population**

N	S	N	S	N	S	N	S	N	S
10	10	100	80	280	162	800	260	2800	338
15	14	110	86	290	165	850	265	3000	341
20	19	120	92	300	169	900	269	3500	246
25	24	130	97	320	175	950	274	4000	351
30	28	140	103	340	181	1000	278	4500	351
35	32	150	108	360	186	1100	285	5000	357
40	36	160	113	380	181	1200	291	6000	361
45	40	180	118	400	196	1300	297	7000	364
50	44	190	123	420	201	1400	302	8000	367
55	48	200	127	440	205	1500	306	9000	368
60	52	210	132	460	210	1600	310	10000	373
65	56	220	136	480	214	1700	313	15000	375
70	59	230	140	500	217	1800	317	20000	377
75	63	240	144	550	225	1900	320	30000	379
80	66	250	148	600	234	2000	322	40000	380
85	70	260	152	650	242	2200	327	50000	381
90	73	270	155	700	248	2400	331	75000	382
95	76	270	159	750	256	2600	335	100000	384

**Note: “N” is population size  
“S” is sample size.**