PERCEIVED FACTORS INFLUENCING PROJECT IMPLEMENTATION IN ARID AND SEMI-ARID AREAS IN UGANDA: A CASE OF INTEGRATED WATER MANAGEMENT AND DEVELOPMENT IN ARUA DISTRICT, UGANDA

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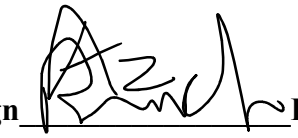
DECLARATION

This research project is my original work and has not been presented to any other university for any award.

ARNOLD ROTICH, Sign  **Date**_____27/11/2023_____

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This research projectl has been submitted for defence with my approval as the university supervisor.

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DEDICATION

I am grateful to family and friends for giving me all the unwavering support I have received from them all this time I was doing my research. God's blessings are the least I can ever wish you. Thanks so much.

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ABBREVIATIONS AND ACRONYMS

CTF	Conservation Trust Funds
DANIDA	Danish International Development Agency
GoU	Government of Uganda
IWMD	Integrated Water Management and Development
JICA	Japan International Cooperation Agency
NPA	National Planning Authority

ABSTRACT

Existing records indicate that the Integrated Water Management and Development (IWMD) Project of Uganda continues to face a number of challenges that hamper its efforts to deliver on its mandate. This study investigated perceived factors influencing project implementation in arid and semi-arid areas in Uganda: a case of integrated water management and development in Arua District. Specific objectives included influence of availability of resources, community involvement, support structure, and the influence of political environment on project implementation in integrated water management and development in Arua District. Survey research design was used where the target population included project management committee members, NGOs and CBOs management staff working in the area, and government ministry officials. Stratified technique was applied to determine a sample size of 127. Primary data was collected using a structured questionnaire which allowed collection of both quantitative and qualitative data. The mean and standard deviation were used to measure statistical data using SPSS version 23.0 and Excel worksheets. The findings were documented using tables and charts. Thematic technique was used to process qualitative data based on the research objectives and presented using narratives. The study findings showed that availability of resources means a lot when it comes to effective execution of integrated water projects. Lack of sufficient resources often leads to lagging behind of completion of projects, poor quality of the projects, and varying of projects scope. Also, community involvement, support structure, and political environment influenced implementation of integrated water projects. Public involvement and strong support infrastructure as well as stable political environment ensured smooth running of the water projects by providing the right forum for effective execution of the projects. The study recommended the need for all key stakeholders in management of integrated water resources in Arua district to put in concerted efforts to create a favourable environment for effective implementation of the projects. This included resource mobilization, enhanced community participation, strong support structures, and the right political environment to allow peaceful management as well as execution of integrated water programs in Arua district in Uganda.

CHAPTER ONE
INTRODUCTION

1.1 Background of the Study

The Arid and Semi-Arid Lands (ASALs) are historically characterized by political and economic marginalization internationally. According to DANIDA (2009), the isolation is better reflected in low levels of public investment and poor infrastructure such as water management and development. Water supply in ASALs is one of the biggest challenges of human existence. This is no exception in the East African region, especially in the northern parts which usually experience perennial droughts. In Uganda, campaigns on issues of water and sanitation projects were intensified, especially from the International Donor Community. In 1997 for instance the government of Uganda incorporated water and sanitation into government's poverty reduction strategy (MWE, 2016). These efforts attracted donor funding, which prompted DANIDA to initiate in Northern Uganda a two-phased bilateral water development program where over 700 million Danish Kroners were spent in the first phase in 1997-20017 and over 845 million Danish Kroners in the second phase in 2008-2018.

Hirn (2013) posits that over 8 million Ugandans do not have sufficient water for domestic use hence increasing their susceptibility to infectious diseases. According to the Ugandan National Planning Authority (2013), the high demand for water in Northern Uganda continues to put a lot of strain not only on the government but also on all other national and international humanitarian organizations in the country. Furthermore, based on a report by the Ugandan government and Directorate of Water Development, there are huge water scarcity issues in five districts in the northern part of Uganda which should be addressed sooner than later. These include Arua, Mbale, Mbarara, Mukono, and Moroto, with each district experiencing its own unique challenges in terms of the magnitude of the problem and how to address the issue.

Despite the fact that the local communities are already suffering from water shortages, the continued influx of thousands of refugees from Southern Sudan has increased pressure on this limited resource and complicated the problem even more. According to Kermeliotis (2013), it is estimated that since 2016 Uganda has received more than a million refugees from its

neighbouring Southern Sudan, with most of them settling in the northern part of the country, including Arua district where there is Rhino Camp for refugees. Following this scenario, the humanitarian workers are also left badly exposed to the exigencies of poor water supply. Out of the 105 small towns in Uganda, 95 had identified Water Authority as a key government water administrative body. This means that those operating outside that Water Authority were not in a position to contract a private operator. Most towns without a private operator had problems with tendering processes, and this forced town authorities to take over management of water facilities (MWE, 2010).

Studies show that generally Uganda thrives on over 700 piped water schemes not overseen by the National Water and Sewerage Corporation (WATSUP, 2011). Most of these schemes are operating in areas without recognized Water Authorities (MWE, 2010). Existing records further indicate that IWMD is also mandated to focus on improving integrated water resources management. Among core activities of IWMD project include: constructing and rehabilitating water and sanitation facilities.

Due to lack of surrounding fences in most parts of Uganda, the water sources remain largely unprotected hence prone to further pollution by animals. Besides human activities, lack of enough resources in this sense therefore becomes a big challenge. Another gap may have to do with failures of local institutional players such as water point management committees and community leadership. This portends the problem of lack of proper community engagement in key water development and management decisions. According to Denis (2014), poor support structures tend to hinder success of such important projects as water supply to the locals. These may include ineffective monitoring and evaluation strategies, poor managerial skills, and inadequate ICT infrastructure. In addition, political environment was bound to affect timely and effective delivery of the objectives of the project (Koning, 2011). This may be viewed in terms of political interference from local politicians, lack of proper project support, and poor prioritization when it comes to project selection.

In view of the aforementioned potential challenges, the current research sought to investigate factors that influence implementation of projects in marginalized parts in Uganda, with focus on integrated water management and development in Arua District. It was therefore imperative to

understand the level of preparedness of the authorities directly charged with the responsibility of water resources management.

1.2 Statement of the Problem

More than 8 million rural populations in Uganda are faced with scarcity of safe water for domestic use (MWE, 2016). This problem is direr in the Northern part of Uganda where a World Bank report indicated that the situation is likely to become even worse if no strategies are put in place for proper implementation of integrated water management and development projects. In Arua District, recent media reports indicate that currently there is only 51% of safe drinking water in the area against the national average of 65%. Poor resources management, ineffective support structure due to poor leadership structures and polarized political environment seemed to have compromised these developments. For instance, according to the World Bank, in most refugee settlements in Arua district, water and sanitation services still remains a big problem. The continued influx of refugees in Northern Uganda is likely to worsen the water situation in Arua District. The shortages keep on causing serious water and environmental pollution as well as public health problems.

Despite common application of technology for improvement of water supply in Arua District, such as digging deep boreholes, shallow wells, protected springs, and public standpoints among others, it is difficult to sink enough boreholes for water supply in this region due to general lack of resources for project planning and management of water resources (World Bank, 2009). This leaves the residents of the area with no better option other than walking long distances to look for water. Existing information further indicates that mismanagement of integrated water management and development in Arua District and in Northern Uganda in general, has necessitated most community members to rely on community point sources which are very far from their homes (National Planning Authority, 2013). Traveling long distances to fetch water means that the residents are likely to access unsafe water sources which could in turn trigger many water borne diseases (Hirn, 2013). This study therefore examines factors influencing project planning and management in ASALs, with specific focus on integrated water management and development project in Arua district in Northern Uganda.

1.3 Purpose of the Study

The purpose of this study was to investigate perceived factors influencing project implementation in arid and semi-arid areas in Uganda: a case of integrated water management and development Projects in Arua District.

1.4 Research Objectives

i. To establish the influence of availability of resources on implementation of integrated water management and development projects in Arua District, Uganda.
ii. To determine the influence of community involvement on implementation of integrated water management and development projects in Arua District, Uganda.
iii. To examine the influence of support structure on implementation of integrated water management and development projects in Arua District, Uganda.
iv. To find out the influence of political environment on implementation of integrated water management and development projects in Arua District, Uganda.

1.5 Research Questions

i. What is the influence of availability of resources on implementation of integrated water management and development projects in Arua District?
ii. How does local community leadership influence implementation of integrated water management and development projects in Arua District?
iii. To what extent does support structure influence implementation of integrated water management and development projects in Arua District?
iv. What is the influence of political environment on implementation of integrated water management and development projects in Arua District?

1.6 Significance of the Study

Findings of the study may be helpful to the management and donor agencies in the water and sanitation sector for understanding how to improve water develoment projects in the Northern Uganda region and the whole country as well as other ASAL areas outside Uganda. The findings

of the study may also greatly contribute in proving a basis for policy effective formulation in the water and sanitation sectors not only in Uganda, but in the whole of the East African northern corridors where water supply and management is a huge perennial problem. Additionally, the findings may be reference to potential studies related to the subject of planning and development of integrated water management and development in arid and semi-arid areas.

1.7 Scope of the Study

The research was conducted in Arua District in Northern Uganda. The study was confined to examining factors influencing project planning and management of water projects in the area. Independent variables addressed included: availability of resources, role of local community leadership, support structure and political environment. There was also intervening variables, such as government policies and donor support, which were likely to influence how the variables interrelated. Inclusion criteria in study participants were the project managers and key individuals from the local communities.

1.8 Limitations of the Study

Due to misconstruing true research intention, some of the project managers showed some reluctance in providing correct data for addressing the research problem. Besides, given the high level of ignorance of the local communities, a number of the respondents seemed not to have a clear picture of how the project was being run. This somehow denied them the opportunity to give the right information to answering the research questions. Lack of objective information was likely to further compromise study findings. In order to address the aforementioned weaknesses and collect the right data, assurance was given to the respondents about the good intention of the research. Key members of the local communities who are well informed were sampled to give complementing data.

1.9 Assumptions of the Study

The research made assumptions that each of independent variables: availability of resources, local leadership, support structure, and political environment had some influence on project implementation in integrated water management and development in Arua District. Another

assumption revolved around the participants' willingness to give credible information for effective answering of the research questions. Besides, the study made assumption that relevant authorities were going to grant permission to the researcher to successfully carry out data collection.

1.10 Definition of Key Terms

Project implementation resources are assets critical for successful actualization of integrated water management and development projects. These were measured using ease of access, cost, and available resources.

Project implementation community involvement entails direct or indirect involvement in running integrated water management and development programs. This will be viewed in terms of the effectiveness, public participation, and caliber of community leadership.

Project implementation support structure is about designing and preparation procedures meant for successful achievement of the objectives of integrated water management and development projects. This variable will be measured based on existing M&E strategies, managerial skills, and ICT infrastructure for easier flow of information and other essentials for helping to meet the objectives of a project.

Project implementation political environment entails the prevailing political atmosphere at any given time that may impact projects. This will be assessed on the basis of level of political interference, project selection process, and public support.

Project implementation entails the end results or outcomes of a given project. Implementation of a project can be assessed based on timeliness of completion, quality of the outcome, cost-effectiveness, scope, and user or public satisfaction.

CHAPTER TWO
LITERATURE REVIEW

2.1 Introduction

The section discussed critical analysis of existing writings based on subthemes for a clear focus on what has been studied previously. The chapter also presented a theoretical framework which helped to anchor this research. Additionally, the chapter presented a conceptual framework.

2.2 Availability of Resources on Implementation of Integrated Water Management and Development Projects

Globally, governments and water management institutions have attempted to embrace various approaches in order to attract financing of their water projects. However, building and maintenance of infrastructure remains a great challenge to a number of water management entities. According to Barlow, Roehrich and Wright (2013), one of the common strategies that have been used in improving integrated water management and development projects in many parts of Africa include public-private partnership. Furthermore, according to the World Bank (2004), often water resources are financed through Trust Funds which use the basket funding philosophy where the sources of funds are separated from water use levies, taxes and funds mobilized from different funders. According to the Conservation Trust Funds (CTF), globally there are more than fifty conservation Trust Funds addressing issues of water resources. Despite the existing mechanisms for resource mobilization for implementation of integrated water management and development projects, there are still loopholes to be addressed in Arua district in Uganda.

In many parts of the world, privatization in water utilities has been viewed as the best solution when it comes to meeting public demand for water resources. For instance, privatization of water management in the 1980s in some developed countries was adopted as a possible long-term solution to poorly-performing public utilities (Munia et al, 2016). The profit-driven institutions were expected to inject fresh impetus in the management and implementation of integrated water projects thereby offering better services. Yet, according to Mukhwana (2013), despite notable improvements in the water sector due to privatization, this strategy has not completely addressed

the challenges inherent in water resource management and development across different socio-economic environments in developing countries. The situation remains even grimmer in most remote places in developing countries. Arua district in Uganda, for example, still experiences serious challenges related to implementation of integrated water management and development projects.

Although there seems to be progressive developments in water service delivery in many parts of Africa, many countries still face the challenge of financial sustainability which tends to hamper water service providers' efforts when it comes to reaching as many people as possible. In Kenya for example, research on water resources carried in 2009 established 26% of the water service providers to be meeting their financial targets; which derailed their service delivery (Szabo, 2011). Furthermore, majority of the water service providers commonly experienced management issues which caused weak financial performance, hence ultimately leading to poor water service provision (GoK, 2014). For the case of Uganda, in the last three years since 2018, the government has been developing water resource management and development initiatives intended for water services improvement in rural parts of the country. Through Environmental and Social Management Framework 2018, the Ugandan government continues to spearhead efforts for sustainable water resource supply and boosting of sanitation services to all parts of the country (Government of Uganda (GoU), 2018). However, there are still inadequate services of this important commodity.

Water resources in Uganda, like many other countries in the region, support key sectors of the economy. These include hydropower generation, irrigation, fisheries, manufacturing industry, domestic use, and navigation among other various uses. However, efficiency and sustainability in supply remains a serious concern for the Uganda government even today (GoU, 2018). This challenge has been aggravated by lack of serious sectoral collaborative initiatives in planning and implementation, increased frequency of floods and droughts, rapidly expanding population, growing environmental challenges and pollution of Uganda's water sources. These challenges are further causing heightened risks of the country's hydrological ecosystem, hence requiring a lot of financial resources to effectively address the situation. In the recent past, Uganda has been experiencing depleted surface water which has subsequently led to almost 50% of the country's districts to undergo serious water shortages.

In the longest time, addressing the challenge of water scarcity has been the government of Uganda's priority, with focus on progressively adopting a catchment management strategy where emphasis is put on proper planning of the whole process with involvement of multiple stakeholders (GoU, 2018). This approach is further geared towards guaranteeing sufficient resource supply to meet various livelihood demands. Furthermore, the government of Uganda is currently involved in a number of initiatives aimed at strengthening water resources management and development under consolidated programs that are intended to ensure water security and sustainability throughout the country. However, there are financial challenges the government is facing that threaten realization of these programs. So as to holistically deal with challenges of water services, Ugandan government has proposed to focus on key water investment projects in Mbale district while at the same time focusing on national water programs, and local levels. The project was intended to improve water supply in the northern part of Uganda hosting refugees displaced from conflict areas. Despite the government's efforts, the project is yet to make realistic impacts due to lack of adequate financial resources (GoU, 2018).

Inadequacy of resources for implementation of water projects is not unique to Uganda. In Kenya, programs on water services are thought as performing poorly due to lack of enough financial resources and ineffective structural facilities. According to Donge (2013), a number of rural water facilities in Kenya are soon likely to be dysfunctional if key stakeholders do not proactively initiate mobilization of resources to keep the projects sustainable. It was also noted that several water projects, including Isiolo water supply, had silted and become nonoperational due to long stay without being serviced. Hence, the projects needed serious rehabilitation through effective and efficient leadership as well as active community organization and participation. Donge (2013) further revealed that most of the nonfunctional water projects had been affected by irregular maintenance, irresponsible usage, and general poor management which together led to failure in management. Despite these revelations, the study by Donge (2013) was carried out more than seven years ago under totally different study environment. Hence, there is need for this proposed study focusing on arid and semi-arid environments in Uganda.

Ali (2015) did research on community ownership and project implementation in Isiolo County. The findings indicated that leadership of water projects was an important determinant of the kind of impact the project can have on the beneficiaries. However, there is usually lack of consistent

community involvement in implementation of water projects, especially in Kenyan rural places. This created a situation where the public did not have a lot of confidence in local level water programs which interfered with effective and efficient running of such initiatives. However, unlike this proposed research which focuses on integrated water management and development programs, previous research dealt with community ownership of projects. Hence, there is need to understand how availability of resources influences implementation of integrated water management and development programs in marginalized parts of Uganda.

Another previous study by Rimberia (2012) conducted in Nyeri County revealed that most water projects in developing countries are facing the challenge of sustainability due to lack of constant flow of financial resources and effective physical infrastructure. Further, inadequate financial resources made it difficult for the project managers to reliably maintain their projects for the long term benefits to the key stakeholders. These findings were three years later corroborated by another research by Kemuma (2015) carried out about resources on sustainability of water resource management initiatives in the country. The findings indicated that finances are very critical in allowing timely completion, maintenance and sustainability of water projects. Further, there were revelations that most water management and development projects that failed to make it to their logical completion are often marred by financial inadequacies and poor management. Despite the revelations by the previous study by Kemuma (2015), the findings relate to a totally different environment of study which was also conducted more than five years ago. Hence, there is need for this proposed study to focus on arid and semi-arid areas in Arua district in Uganda.

2.3 Community Involvement and Implementation of Integrated Water Management and Development Projects

Community participation is an important element when it comes to planning and implementation not only about programs related to water resources, but all kinds of projects touching on the welfare of communities. According to Mwangi (2012), community participation in a project entails involving all the stakeholders in contributing to the design of initiatives meant to impact their lives in one way or the other. This process allows the stakeholders not only to act as merely spectators expecting only to receive a share of the project benefits, but enables them to actively make contribution in all aspects of implementation. Different researches on implementation of

integrated water management and development programs emphasize the importance of public participation which is progressively becoming an integral part of initiatives intended to uplift the lives of communities. Water resources remain one of the indispensable commodities for the socio-economic wellbeing of communities regardless of their social or economic status (Munyui, 2015).

Kipkeny (2014) established that design and execution of integrated water management and development projects can be viewed from different perspectives. These include but not limited to time or interest where individuals could participate in a project as observers where they largely offer moral support. Participation can also be in form of skills needed in specific areas of the project implementation process, or attending meetings as committee members. Furthermore, individuals can participate by offering labour services in the physical sense. There is also the aspect of offering material resources, such as construction materials like bricks and iron sheets among others. Habtamu (2012) also posits that community involvement in water project management and development can also be in form of monetary resources or donations for running of the project.

Monetary support by community members can be solicited through effective mobilization and sensitization of the potential beneficiaries of a given project. Regardless of the kind of participation offered by any individual or groups, every support is critical since the results achieved are varied and may manifest in varying degrees on the specific project being implemented. Rimbera (2012) further opines that the more the community members participate in project implementation the more their involvement is thought to transit from passive to active state.

As Ochelle (2012) carried out a study on what influences long term successful implementation of water project in Makueni County in Kenya. Descriptive survey design was employed where the research targeted 96 executive members of 32 water management committees for relevant data for answering of the research questions. The study further used random sampling technique where 60 executive committee members and two NGO project managers were selected and interviewed using questionnaires and interview guides. It was further noted that the aspect of successful running in water projects could not be ignored. Furthermore, it was revealed that input by all local stakeholders at the inception of water projects was very critical as this helped in the designing of

projects based on the immediate needs of majority of the beneficiaries. Also, involving the public during the project design phase generally meant that the right priorities were set, hence encouraging full ownership of the projects right from their initial stages to the time of completion.

The study by Ochelle (2012) further indicated that there were divided opinions among the respondents regarding the kind of water projects they considered most viable in arid and semi-arid areas. However, majority (86%) of the respondents preferred boreholes to other types. Despite the varied views regarding the type of water projects in terms of preference among the respondents, the common view was that involvement of community members at the feasibility and project design levels was important in allowing key stakeholders to form management committees that ensured successful implementation of the projects. This affirmation was further demonstrated through the high percentage (87%) of research participants who concurred with the view that many community people would be willingly get to participate in project conception, design, and implementation phases. In spite of these important revelations by Ochelle (2012), the study was conducted more than 8 years earlier under different social settings. Hence, this proposed study will be critical in speaking to the study environment in arid and semi-arid areas of Uganda.

Mustafa (2016) conducted another study about effect of community involvement on project management and execution. Using descriptive research design where the management team was involved in giving crucial data for the study, the findings indicated that good government policies would always lead to successfully sustained water projects. The reverse would however imply that there is no effective running of the projects hence sustainability could be a problem. A sample of 419 strategically placed members of the project implementation committee was used in the research. Before data collection, the questionnaire was tested for reliability and validity using credible validation methods before being taken for field work. From the study outcome, 383 of the participants completed and returned the questionnaires, which translated to 91.4% response rate. The findings further indicated that a many people who participated in the study did so because they had similar needs and priorities relating to their lives. Common involvement of community members also provided an opportunity to a number of them to understand their water resource needs. It also emerged that 89% of the community members thought that their participation significantly determined the level to which the projects were sustainable. Despite these revelations, the study by Mustafa (2016) was carried out in Laikipia County, which presents

a different environment from the one for this proposed research. Therefore, the current study focused on integrated water management and development project implementation in marginalized parts of Uganda, with specific focus in Arua District.

The studies by Ochelle (2012) and Mustafa (2016) revealed a significant participation of the public in implementation of integrated water management and development programs is essential in identifying pressing water needs for majority of the beneficiaries' right at the initiation of a project. However, none of the two studies focused on a similar study environment as this proposed study. Aside from being conducted in Kenya as opposed to this proposed study which will be carried out in Arua district in Uganda, both of the studies were conducted at least five years ago. This implies that many years have passed since the study was done, thus calling a new inquiry to understand the current situation relating to implementation of integrated water management and development projects in marginalized rural places of Uganda.

Mustafa (2016) noted that community participation remains a key component of successful running and execution of since this allows most stakeholders to state their preferences and priorities which will eventually allow them to fully participate in the whole process of implementation. Furthermore, most of the members' support of any project comes from their realization that the project in question carries their hopes and aspirations. This implied that stakeholders in water programs will always be willing to commit resources in support of their priority choices. On the contrary, it may be very difficult to convince individuals to sacrifice their time and resources on projects they do not have faith in. Over time, the perception on community involvement in project implementation has significantly changed. As opposed to the past when community participation in project implementation was confined largely to labour and material contributions, presently the process also involves community members' taking charge and influencing a project during its lifecycle to ensure a long lasting impact (Ochelle, 2012).

Mustafa (2016) further opines that community participation in project implementation encompasses community members' involvement in decision making, taking control, contributing materially and otherwise, representation, and being in the forefront in offering direction relating to all critical areas of the project. This further implies that all aspects of project development, management and implementation must be anchored on community participation where priority is

given to the preferences of the majority. Getting to be fully part of project implementation, a greater percentage of the public is given an opportunity for understanding the intricacies of running projects and how to minimize costs so that they can make informed and rational decisions. Moreover, community members have the latitude to willingly contribute to water resource development projects where their priorities will always come first. This also means that community members can have the opportunity to choose their representatives in project management committees through a transparent and democratic process with full realization that their interests will adequately be represented.

2.4 Support Structure and Implementation of Integrated Water Management and Development Projects

Successful implementation of integrated water projects requires proper support structure for execution of the same. A study by Rono and Aboud (2013) carried out in Nandi County on the impact of planning on implementation of project on water revealed that the planning phase is one of the critical determinants of the future of any given project. Hence, the study further recommended that all key shareholders in all the public projects such as ones related to water should encourage public participation at all times so that they can give their input regarding the priorities that should set up and initiated in the best way possible from the initial stages. It further emerged that community members should be sensitized and mobilized to be always ready to give their inputs that potentially have a significant impact in their general wellbeing. This view has been replicated in several researches on factors that influence operation of integrated water schemes which are meant to help communities to achieve their water resource provision objectives.

Maimuna (2017) undertook research on the dynamics that contributed to successful running of water projects in Isiolo County in Kenya. Two hundred and eight one (281) respondents were involved in giving relevant data. Participants were categorized into different management cadres across different NGOs, CNOs, and government public management positions in the Ministry of Water. Applying simple random sampling methods, 162 research participants were selected and interviewed using a questionnaire. This was complemented by qualitative data collected through focus group discussions. Based on the findings, several dynamics played out when it came to

performance of water projects in the study area. For instance, more than 73% sample concurred that community involvement in project implementation impacted projects in one way or the other. The research concluded that it was essential for the members of the public to be given a chance to express their views on how to strategically implement projects concerning their welfare.

Furthermore, the study by Maimuna (2017) indicated that the nature of water infrastructure was critical when it came to performance of water project. Various aspects of water infrastructure had different effects on the performance. These included availability of spares, maintenance costs, operational costs, and type used, such as solar, gensets, and hand pump, to mention but a few. It also emerged that project management played a significant role in performance of water projects. Equally important for water project performance were maintenance funds whose source included water use charges, government funding, and financial assistance from funding agencies. However, the study was carried out in Isiolo County in Kenya about four years ago, hence the need for this proposed study in Arua district in Uganda. Besides the new study environment which may present different general dynamics, this proposed study will be important in addressing current issues related to implementation of integrated water projects in developing countries.

Another study was carried out by Tifow (2013) where a sample of 259 individuals was interviewed about the dynamics of water projects implementation in different environments in the lake basin region. The research focused on about 259 rural water supply projects which were managed by community groups covering the lake basin Nyanza region. The findings noted that water supply projects were initiated between 2009 and 2010 and were serving a target population of 77, 250 local residents. As the research by Tifow (2013) noted, several water facilities were functional courtesy of involvement of all key stakeholders. Similarly, more than 95% of research participants affirmed that water projects were widely successful due to active participation of members of the community. Evidently, public participation in implementation of water supply projects was respected by a greater majority of the committee members due to its ability to enable members to give their views whenever it was deemed necessary. Despite the outcome of the study by Tifow (2013), there was need to also examine how environment and support structure impacted execution of integrated water management and development projects in Arua District in Uganda as a different study environment.

According to Maimuna (2017), project planning is very important for any water supply initiative to be successful. However, in order to effectively participate in designing and implementing the projects, it is always important for the beneficiaries to be imparted with specialized skills through capacity building initiatives. Furthermore, appropriate training models and strategies should be employed in order for the project implementation stakeholders to receive skills needed in supervision of the projects. The right skills for the project beneficiaries will also be critical in contributing to sustainability of the project. Tifow (2013) further posits that a number of water supply projects in resource-poor neighbourhoods may be hard to implement and sustain due to poor capacity building of community members who are ultimately the greatest beneficiaries of such projects.

Additionally, there is the possibility of some of the trained community committee members quitting the projects, losing interest, or moving out of the project areas altogether hence making it impossible for them to continue in the implementation process in the long term (Oraro, 2012). Such a scenario would negatively affect projects outcomes, particularly in cases where the leaving member was playing a critical role in the whole process of implementation of the project. Another previous study established that in Ethiopia, building for the project beneficiaries is always important in order to equip them with the necessary wherewithal for the long term benefit of the projects. These sentiments were corroborated by Nerubucha (2011) who noted that effective planning of community based projects cannot be possible unless the beneficiaries are properly capacitated so that they can be given their valued input whenever that is needed for the common good of all the stakeholders in the project. Moreover, adequate skills are critical in ensuring that they are always in a better position to enhance the project benefits.

2.5 Political Environment and Implementation of Integrated Water Management and Development Projects

Political environment means a lot when it comes to effective implementation of integrated water management and development projects. According to Oraro (2012), effective and efficient project governance founded on the right political environment is a prerequisite for sustainability. This further implies that the right political environment will guarantee good policies that will in turn make it easier for implementation of projects. Maimuna (2017) further argues that good

governance presupposes transparency, accountability and fair justice to all affected parties in a given process. Related to integrated water supplies management and development projects, a fair political environment will give all the stakeholders a chance to equitably get involved in the whole chain of events in project implementation. Open and effective participation of all the beneficiaries of a project further enhances sustainability of the project since all the concerned parties stand a better chance of agreeing on a number of things related to the running of the project.

The right political environment further ensures that there is easy integration of policy considerations, evaluation of varied opinions from different quarters, and making of critical decisions in a fair manner. Such a scenario also restores respect on social institutions and in the process gives the ordinary citizens a strong voice in charting their own destinies through practically applied projects. According to Tifow (2013), good governance in a fair political environment further removes or minimizes unnecessary bureaucracies so as to give members of the public the liberty to sustainably participate in project management and implementation. Governance that allows sustainability of a local project has certain inherent features, such as policy integration, shared sustainability objectives, and incentives for practical implementation. Policy integration is all about coordination of government policies and initiatives of other governance players that together enhance sustainability of a project. In this context, there are sanctioning of important events, and specific rules for making compromises for the sake of smooth running of any project in question.

Policy making on sustainability of projects tends to rely on performance standards. Yet, good policy frameworks must always be anchored on innovative systems that proactively put structures in place to ensure successful initiation and running of water projects for the best interest of the public. Rimberia (2012) noted that it is essential to have clear and effective regulatory institutional frameworks for overseeing water supplies project implementation in order to safeguard initiated water projects for the long term. Efficient operational structures will also ensure that national policies are operationalized and property rights protected. Such a scenario will furthermore ensure that investment benefits in water projects are equitably generated and shared. Effective delegation of responsibilities to the local service provision entities is important in defining the future of any project under consideration.

Rono and Aboud (2013) further observe that the right political environment at the local level engenders a stable and predictable regulatory regime which allows transparency, accountability, and professionalism in the process. On this basis, all key shareholders in water projects are encouraged to initiate policies that will support favourable environment for community involvement and private sector participation in implementation of integrated water supplies projects. Some of these legislative frameworks can be considered from the purview of an integrated approach where all factors are put into consideration. Further, in order for the effective involvement of the members of the public, Rimberia (2012) states that there should be social policy provisions for the society.

A number of studies have also shown that besides the political environment related to integrated water projects in different countries in Africa, a study carried out by Munyui (2015) to understand different dynamics in Kitui West. Data analysis was carried out through statistical information using SPSS technique and analyzed data was documented in frequency distribution charts. Based on the study outcomes, community participation, technology, management style, and financial status were some of the factors influencing project implementation in Kitui West. This study however was conducted more than five years ago under totally different study environment in rural Kenya. Hence, this proposed study scheduled to be carried out in rural Uganda is necessary to understand the dynamics influencing implementation of integrated water supplies projects.

Furthermore, public involvement is viewed to be part of successful and effective project design, implementation, management, performance, and sustainability (Swanson and Beath, 2010). However, it is common to find inadequate professional and technical supervision of local community water projects due to insufficient supervisory structures and lack of adequate resources. Lack of consistently updated data also sometimes makes it hard when it comes to monitoring of the progress of water projects being implemented at the local levels. In order to address such challenges, studies have recommended provision of general politically favourable environment where project management committee members are sufficiently taken through participatory appraisal tools to progressively evaluate projects throughout their implementation process (Maimuna, 2017). Other studies have also suggested the need for regular analysis of trends in resource uptake in order to identify any shortages early enough so that timely corrective measures can be undertaken (Tifow, 2012). In the background of all these possibilities is a

requirement of favourable political environment which is necessary for effective policy frameworks for implementation of community water programs.

2.6 Theoretical Framework

Governance theory and community participation theory guided the research. Each of the theory provided the study with a unique foundation based on the varied thematic concerns addressed in the research.

2.6.1 Governance Theory

Derived from Latin and ancient Greek terminologies, governance means control, guidance and manipulation of systems and processes in order to achieve an important objective. Associated with Rosenau (1992), governance theory provides a foundation for interrogating the role of all important elements required for implementation of a given project. Over time, the use of the concept of governance has been widened by western political scientists to go beyond social and economic spheres so as also to focus on partnership as an important component in project management and sustainability (Koech, 2014). On the basis of the objective of this study, this would imply that effective implementation of integrated water management and development projects in arid and semi-arid areas need strong governance besides aiding elements, such as resources, community participation, effective planning and favourable political environment.

According to Farazmand (2012), major theoretical frameworks surrounding governance theory include agency, stewardship, resource-dependence, and stakeholders models. The main idea behind these models is to provide a platform through which clear policies and processes can guide partnership between the local communities in order to chart the best way for implementing local projects for the common public good. Elrantisi (2015) further argues that all public projects must be anchored on clear policies spelling out the question of good governance. Integrated water management and development projects in arid and semi-arid areas must be well-thought out if the outcome is to be encouraging. Through stakeholder model of the wider governance theory, all key entities who have a stake in a water project in arid and semi-arid areas must be fully involved the planning and execution of the project in order to avoid unnecessary conflicts that can end up derailing the entire process.

Governance theory spells out the values that shape good provision of services (Osborn, 2013). To the extent that the residents of Arua District living in Uganda need effective and efficient water supply systems, this theory clearly provides direction on how this objective can be achieved. Governance theory points out the fact that top project management closely liaise with other key players so that the outcome can be satisfying to all beneficiaries of the project. Although such things as availability of resources, community participation, effective support structure, and the right political environment are essential in the entire process of implementation of the project, effective harmonization of these elements is equally critical for the general success and possible best outcomes. Proper leadership of the project will, for instance, help in determining the kind of infrastructure required for any given project.

Despite the relevance of the governance theory in anchoring this study, especially with respect to creating some kind of synergy when it comes to considering of a number of elements in project implementation process, all projects may not need a similar theoretical model to achieve its objectives. Furthermore, the presence of essential elements in the implementation of the projects may not always be in a desired amount or status. This can ultimately make it very difficult for the project management or leadership to quantify the success of governance against the mere presence of such elements as availability of resources, community participation, support structure, and political environment among others.

2.6.2 Community Participation Theory

This theoretical foundation was initiated by David Wilcox in 1994 to help in explaining the importance of community involvement in public affairs. The concept of community participation in public matters has over time become very popular, with the aim of allowing individuals and groups to significantly contribute in management of resources by the government or other legal entities on their behalf (Gill and Picou, 1998). Furthermore, the theory is very instrumental in offering an elaborate explanation for the mobilization of resources through public participation mobilization forums for common good of the society. The theory anticipates that members of the public will always play an important role of decision making in critical issues of common societal good.

This current study aimed to understand the dynamics of implementing integrated water management projects in Arua in Uganda. At the same time, one of the specific objectives includes to understand the role of community involvement on implementation of integrated water management and development projects in the study area. Community participation theory therefore will be very relevant in anchoring this study, especially when considering the influence of individual or group involvement in implementation of public initiatives. Wilcox (1994) further postulates that one of the most crucial processes in project implementation entails encouraging active participation of the local community in order to proactively determine any emerging problems, constraints, and priorities of the common majority of community members.

Research has also noted that community involvement enhances project ownership by the beneficiaries, hence encouraging them to be more vigilant in the execution process of the project (Harvey & Reed (2007). The involvement of project stakeholders also ensures that after the projects are initiated, they are operated and maintained until they are fully implemented because all the beneficiaries feel truly obligated to ensure that whatever has been started is pursued to its logical conclusion. Community participation theory further assumes that the moment most members are given the opportunity to participate in decision-making regarding the project; they own the process and hence prevent external influence on the mutually agreed position. Community or public involvement is achieved using collaborative efforts (Khwaja, 2004). Based on the foregoing, this theory helps to best explain the dynamics of implementing and development projects in Arua District in Uganda.

2.7 Conceptual Framework

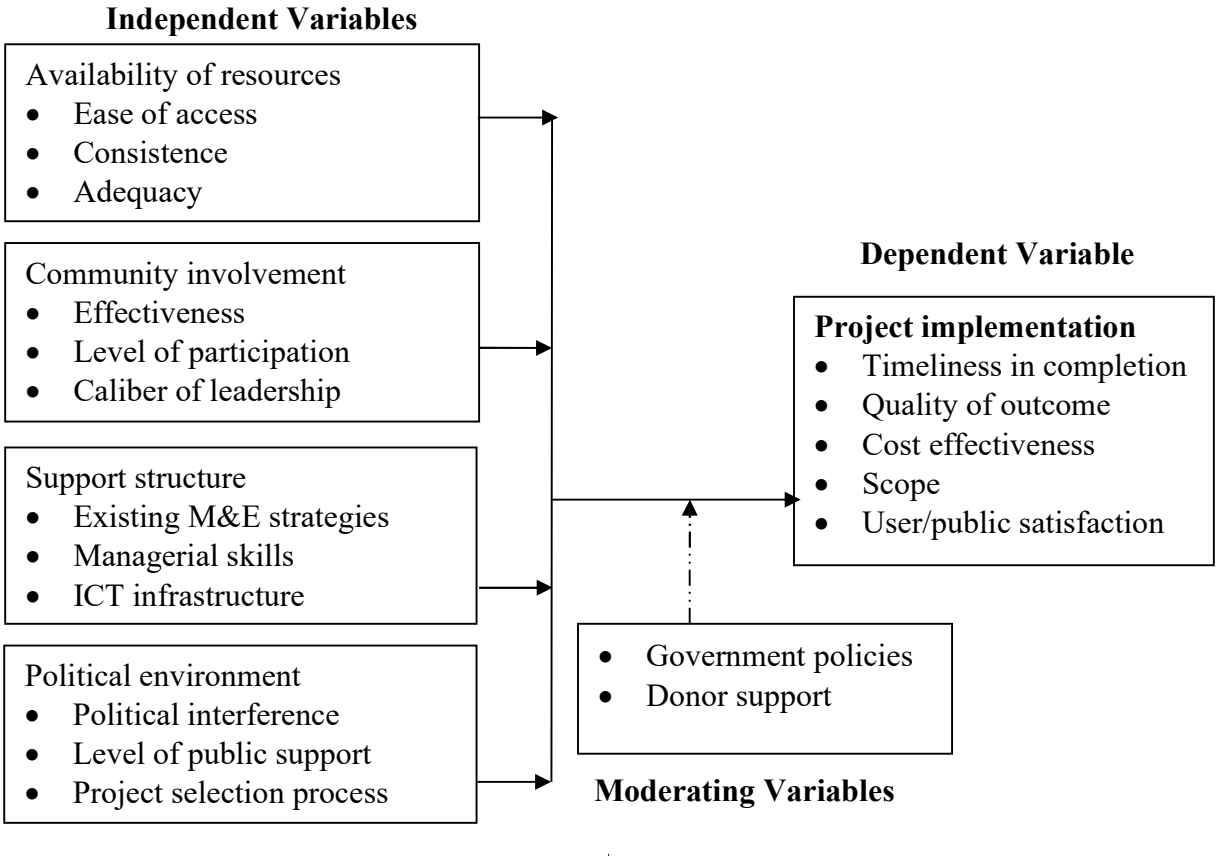

Figure 2.1 Conceptual Framework

According to Kuada (2012), the framework helps to define the interrelations of variables being studied and how they influence the outcome of the study. Kothari (2013) further states that a conceptual framework is important in demonstrating the kind of link between predictor and research outcome. This research featured four independent variables, namely availability of resources, community involvement, support structure, and political environment that were presumed to influence project implementation. As illustrated in figure 2.1, the conceptual framework therefore provided a pictorial overview of the direction in terms of constructs and the expected outcome.

2.8 Research Gap

Literature review carried out indicates that there are research gaps that need to be bridged by this study. Maimuna (2017) carried out a study on dynamics of project successes or failures in Isiolo

County. The findings indicated that numerous varied factors influenced how project were run in the study area; however Maimuna (2017) did not focus on the influence of support structure and political environment as possible determinant factors of water project implementation. Furthermore, the study focused on Kenya's arid areas, which may present different dynamics from this proposed study to be carried out in Arua district in Uganda.

Tifow (2013) conducted another research on what contributed to successful or poor performance of water projects run by the UNICEF in rural parts of Kenya along the Lake Victoria areas in Kisumu County. Some of the specific measures included, technology applied, and the level of training of the managers of the integrated water projects. The research interrogated 78 respondents using a structured questionnaire and results showed that effective public involvement on project design is critical when it comes to proper running of integrated water resource projects. However, research by Tifow (2013) focused in a different study environment in Kenyan with a biased focus. Hence, the current study featured Arua in Uganda, which mostly likely presented totally different dynamics on the ground.

Rono and Aboud (2013) in their study observe that the right political environment at the local level engenders a stable and predictable regulatory regime which allows transparency, accountability, and professionalism in the process. On this basis, the government agencies dealing with water resources are encouraged to initiate clear and effective legislative frameworks that support favourable environment for community involvement and private sector participation in implementation of integrated water supplies projects. These findings were a reflection of an earlier study by Rimberia (2012) which indicated that there should be social policy structures for protecting the rights of vulnerable groups in the society, especially when it comes to public involvement in community projects. Such policy frameworks will ensure that there is no any kind of bias when it comes to deciding the kind of opinions to consider in the implementation of community projects. Yet, these studies were conducted in various study settings several years in the past. Therefore, this necessitated carrying out of the present research as an update of the current situation regarding implementation of integrated water projects.

2.9 Summary of Literature Review

The study addressed factors that influence project implementation in arid and semi dry regions in Uganda, with specific focus on integrated water management and development Projects in Arua District. Four independent variables were studied, namely availability of resources, community involvement, support structure, and political environment. Past researchers were critically examined along these four variables. Furthermore, two theories were critically discussed as the foundation for this study. These included governance theory and community participation theory. Additionally, conceptual framework of the study and the research gap were presented in this chapter.

CHAPTER THREE
RESEARCH METHODOLOGY

3.1 Introduction

The chapter discussed the methodology used in the study. The subthemes included research design, target population, sampling techniques and sample size, and research instruments. Additionally, the chapter presented validity and reliability of the research instruments, data collection procedures, data analysis methods and ethical considerations.

3.2 Research Design

Descriptive survey research design was applied to address the research questions. Kumar (2010) pointed out that this kind of design is appropriate for presenting scenarios in an objective manner without any kind of manipulation to the study variables. Furthermore, the design allows clear answers to the 'how', 'when' and 'what' questions without biased influence of the researcher. According to Zikmund, Babin, Carr & Griffin (2013), descriptive research design is suitable for summarizing collected data through triangulation of quantitative and qualitative data.

3.3 Target Population

Target population included stakeholders in community based project implementation team in Arua District in Uganda. This was a team overseeing implementation of water integrated and development project in the arid and semi-arid Arua District of Uganda. There were 139 members of the management committees, 43 management staff of NGOs and CBOs working in the region, and 13 government officials from the relevant Government Ministry. All these totaled to 195.

Table 3.1 Target Population

Category of Respondents	Population (N)	Percentage (%)
Project Management Committee Members	139	71
NGOs and CBOs Management Staff	43	22
Government Ministry Officials	13	7
Total	**195**	**100**

3.4 Sample Size and Sampling Procedure

Stratified random sampling technique was used to sample 127 respondents from the target population of 195 comprising of project management committee members, NGOs and CBOs management staff, and government ministry officials. The sampling was carried out using Krejcie & Morgan 1970 sampling table (***see appendix IV***) which resulted into the following distribution as summarized in table 3.2.

Table 3.2 Sample Size

Category	Population (N)	Sample (n)
Management Committee Members	139	91
NGOs and CBOs Management Staff	43	28
Government Ministry officials	13	8
Total	**195**	**127**

3.5 Research Instruments

A structure questionnaire was used for data collection, where this has several advantages for collection of data. This included the fact that it can easily be applied in massive information simultaneously. Also, a questionnaire makes it easier for organization, coding, and analysis of collected data besides saving time during fieldwork.

The questionnaire was designed to collect background information of the participants and detailed data related to the research questions. It presupposed definite and elaborate responses to provide the respondents with an opportunity to give detailed information for effective answering of the research questions. Likert scale was used to elicit statistical measurements and open-ended questions enabled the respondents to share out qualitative or narrative information.

3.6 Pilot Test

Pilot test was important for correcting the research tool accordingly. This process further ensured that all the statements in the questionnaire were clearly understood and uniformly interpreted by

all the respondents. Pilot test also helped in removing any possible ambiguity from the research tool so as to avoid any potential confusion or bias during data analysis (Bougie and Sekaran, 2010). Thirteen (13) or 10% of the respondents were used in the pilot test. Respondents for the pilot were proportionately selected from each of the 3 categories and were not used in the actual study in order to avoid any likely bias.

3.6.1 Validity Test

The research tool was carefully tested before being used for data collection. Validity of the questionnaire entails the degree to which it is able to measure what it was intended to (Kothari, 2013). Content validity involves subjecting the instrument to scrutiny by experts whereas construct validity is meant to ensure clarity of the statements in the research tool for common interpretation. The university supervisor was requested for her input in order to make the questionnaire more valid for the study.

3.6.2 Reliability Test

The questionnaire was also subjected to reliability test to ensure that it collected reliable information. Reliability entails consistency of a research instrument in collecting data repeatedly. Reliability allows standardization of a research tool so that collected data can successfully be generalizable to other similar populations (Gall, Gall & Borg, 2008). Split-half method was used to test reliability of the questionnaire where data from the pilot study was then keyed into SPSS to allow subsequent generation of Cronbach's alpha, with 0.7-1.0 considered as the ideal measure of consistency of the tool.

3.7 Data Collection Methods

Drop-and-pick method was used where blank questionnaires were issued out to the respondents for self-administering before fielded/completed ones were later collected. Where the respondents were not able to complete the questionnaire by themselves, the research team administered the questionnaires by directly interviewing the respondents. All due research processes were duly maintained throughout fieldwork to guarantee credible data.

3.8 Data Analysis Techniques

Fielded questionnaires were edited, organized and coded in order to allow smooth data analysis process. Any incomplete questionnaire was removed so that only error-free completed ones were considered in the analysis. SPSS computer software was used for descriptive data analysis (frequencies, percentages, mean & standard deviation) and analyzed data was presented using frequency tables. Qualitative data generated through the open-ended questions was analyzed using thematic content analysis technique and presented using narratives.

3.9 Operational Definition of Variables

As illustrated in table 3.3, the study focused on four independent variables including availability of resources, community involvement, support structure, and political environment. All the independent and dependent variables were further measured in terms of various sub-variables.

Table 3.3 Operational Definition of Variables

Variables	Indicators	Measurement scale	Methods of data Analysis
Dependent Variable			
Project implementation	• Timeliness in completion • Quality of outcome • Cost effectiveness • Scope • User/public satisfaction	• Ordinal scale • Nominal scale	• Descriptive statistics • Content analysis
Independent Variables			
1. Availability of resources	• Ease of access • Consistence • Adequacy	• Ordinal scale • Nominal scale	• Descriptive statistics • Content analysis
2. Community involvement	• Effectiveness • Level of participation • Caliber of leadership	• Ordinal scale • Nominal scale	• Descriptive statistics • Content analysis
3. Support structure	• Existing M&E strategies • Managerial skills • ICT infrastructure	• Ordinal scale • Nominal scale	• Descriptive statistics • Content analysis
4. Political involvement	• Political interference • Level of public support • Project selection process	• Ordinal scale • Nominal scale	• Descriptive statistics • Content analysis

3.10 Ethical Considerations

During the entire process of the study, the principles of informed consent, confidentiality and anonymity of data were strictly adhered to. This implied that the respondents were fully informed of the aim of the study so that they could make informed decisions regarding their participation in the research. Additionally, relevant research permits were obtained before commencement of fieldwork. These included research permits from the university department, and the National Commission on Science, Technology and Innovation (NACOSTI).

CHAPTER FOUR
DATA ANALYSIS, PRESENTATION, INTERPRETATION AND DISCUSSION

4.1 Introduction

This section presented, interpreted and discussed the findings of the research. Findings were presented along the four specific objectives of the study and discussions provided by incorporating views from various empirical literatures on the subject of project implementation.

4.2 Response Rate

The respondents were stratified in terms of management committee members, and NGOs and CBOs management staff, and government ministry officials.

Table 4.1 Response Rate

Category	Sample Size		Response Rate	
	Frequency (n)	Percentage (%)	Frequency (n)	Percentage (%)
Management Committee Members	91	72	65	71
NGOs and CBOs Management Staff	28	22	21	75
Government Ministry officials	8	6	5	63
Total	**127**	**100**	**91**	**72**

Table 4.1 shows that not all the sample of 127 individuals managed to complete and return the questionnaires. Rather, 91 of them fully participated in the study, translating into 72% response rate.

4.3 Respondents' Personal Information

Background of the respondents was captured as gender, age bracket, highest education attained, the role they played in water project implementation, and experience in years with the organization and respective responsibility.

4.3.1 Gender of the Respondents

Table 4.2 Respondents' Gender

Gender	Frequency (n)	Percentage (%)
Male	43	47
Female	48	53
Total	**91**	**100**

As summarized above, 43 (47%) of the respondents were male whereas 48 (53) were female. The gender disparity was informed by the fact that more women than men constituted the management committee of water project implementation at the local level which formed majority of the respondents across the 3 categories.

4.3.2 Age Bracket of the Respondents

Table 4.3 Respondents' Age Bracket

Age	Frequency (n)	Percentage (%)
20 - 30 years	32	35
31 - 40 years	34	37
41-50 years	13	14
51-60 years	8	9
60+ years	4	4
Total	**91**	**100**

The results show that 32 (35%) of the respondents were aged 20-30 years, 34 (37%) 31-40 years, 13 (14%) 41-50 years, 8% (9) 51-60 years, while 4 (4%) of them were aged over 60 years. Overall, 66 (72) of the respondents were not older than 40 years, implying that a greater majority

of them were relatively young hence highly likely to be productive in their roles and discharging of their respective duties and responsibilities.

4.3.3 Highest Level of Education of the Respondents

Table 4.4 Respondents' Highest Level of Education

Level of Education	Frequency (n)	Percentage (%)
Secondary	26	29
College	35	38
University	29	32
Others (PhD)	1	1
Total	**91**	**100**

The summary above shows that 26 (29%) of the respondents' had secondary education, 35 (38%) college education, 29 (32%) university qualification, while 1 (1%) had obtained PhD level of education. Based on the overall statistics, 65 (71%) of the respondents had obtained at least a college certificate, hence sufficiently qualified.

4.3.4 Role of the Respondents

Table 4.5 Role of Respondents

Category	Frequency (n)	Percentage (%)
Management Committee Members	65	71
NGOs and CBOs Management Staff	21	23
Government Ministry officials	5	5
Total	**91**	**100**

The summary above shows that 65 (71%) of the respondents were management committee members, 21 (23%) NGOs and CBOs management staff, while 5 (5%) of them were Government Ministry officials. The disparity in the strata of the respondents was informed by the nature of composition of key stakeholders in the implementation of water projects in Arua District greater

percentage of them belonged to the management committee. Despite the imbalance in terms of absolute numbers, all the 3 categories of the respondents were well represented.

4.3.5 Respondents' Experience in their Roles

Regarding respondents' experiences in their respective roles in water projects implementation in Arua district, the findings are summarized as follows.

Table 4.6 Respondents' Experience

Experience in years	Frequency (n)	Percentage (%)
1-5 years	57	63
6-10 years	24	26
11-15 years	7	8
15+ years	3	3
Total	**91**	**100**

The findings in table 4.6 show that 57 (63%) of the respondents had served in their roles for 1-5 years, 24 (26%) for 6-10 years, 7 (8%) for 11-15 years, and 3 (3%) for over 15 years. Generally, a greater majority (63%) of the respondents had worked in their respective areas for 1-5 years. This might imply that most of the projects were relatively new.

4.4 Factors Influencing Project Implementation

The question as to whether there were serious factors that influence completion of projects in Arua District attracted responses as illustrated in table 4.7.

Table 4.7 Serious Factors Influencing Project Implementation

Response	Frequency (n)	Percentage (%)
Yes	60	66
No	31	34
Total	**91**	**100**

As shown in table 4.7, 60 (66%) of the participants concurred that there were serious dtnamixs associated with water projects implementation in the area whereas 31 (34%) of them had contrary views. The respondents further expressed concerns regarding poor sustainability of the water projects in the area, especially due to unfavourable environmental conditions, financial management, and institutional capacity, among other challenges. Some of the key stakeholders in the implementation of the projects were faced with lack of enough resources ranging from human resource expertise to financial capabilities. Project completion was affected in different ways, as summarized in table 4.8.

Table 4.8 Dynamics of Project Completion

Project completion	**1=strongly disagree**	**2=Disagree**	**3=Unsure**	**4=Agree**	**5=strongly agree**	***Total***
	f	***f***	***f***	***f***	***f***	***f***
The projects tend to lag behind time completion schedules.	7	13	15	29	27	91
Some of them tend to be of poor quality.	14	17	9	28	23	91
A number of them tend not to be cost-effective due to interference.	3	7	6	42	33	91
Not all the projects are implemented within the original scope.	4	11	24	32	20	91
Not all the projects are implemented to the user or public satisfaction.	2	5	17	33	34	91
Mean	**6**	**11**	**14**	**33**	**27**	**91**
Stdev.	**5**	**5**	**7**	**6**	**6**	**0**

From the statistics in table 4.8, 7 (8%) strongly disagreed, 13 (14%) disagreed, 15 (16%) were unsure, 29 (32%) agreed, whereas 27 (32%) strongly agreed that projects tended to lag behind time completion schedules. Further, 14 (15%) strongly disagreed, 17 (19%) disagreed, 9 (10%) were unsure, 28 (31%) agreed, whereas 23 (25%) strongly agreed that some of them tended to be of poor quality. The findings also showed that 3 (3%), 7 (8%), 6 (7%) 42 (46%), and 33 (36%) of the respondents strongly disagreed, disagreed, neither agreed nor disagreed (unsure), agreed, and

strongly agreed respectively that a number of the water projects tend not to be cost-effective due to interference from either internal or external influence. The statistics further indicated that 4 (4%), 11 (12%), 24 (26%), 32 (35%), and 20 (22%) of the respondents strongly disagreed, disagreed, neither agreed nor disagreed (unsure), agreed, and strongly agreed, in that order, that not all the projects are implemented within the original scope.

Finally, it emerged that 2 (2%), 5 (5%), 17 (19%), 36 (33%), and 34 (37%) of the respondents strongly disagreed, disagreed, neither agreed nor disagreed (unsure), agreed, and strongly agreed, respectively, that not all the projects are implemented to the user or public satisfaction. On average, the mean and standard deviation for the general responses on the 5-point Likert scale were 6 (5) strongly disagreed, 11 (5) disagreed, 14 (7) unsure, 33 (6) agreed, and 27 (6) strongly agreed. Based on the mean on each of the 5 points, it was inferred that water project implementation in Arua district was generally ineffective, as per majority of the respondents' views.

4.4.1 Influence of Availability of Resources on Implementation of Projects

The first specific objective was related with availability of resources on implementation of integrated water management and development projects in Arua District, Uganda. Table 4.9 provides summary of the responses on whether availability of resources influences implementation of integrated water projects.

Table 4.9 Influence of Availability of Resources on Project Implementation

Response	Frequency (n)	Percentage (%)
Yes	88	97
No	3	3
Total	**91**	**100**

The findings in table 4.9 shows that 88 (97%) agreed whereas only 3 (3%) of them disagreed that availability of resources influences implementation of integrated water management and development projects in Arua District in any way. The respondents further noted that the right kinds and amount of different materials and equipment enabled the contractors to implement the

projects on time. Since integrated water management and implementation projects usually involve coordinated water, land, and other related resources, sustaining this ecosystem requires the right resources at any given time. As one of the management committee member remarked:

> *Success of any of water and sanitation project will always depend on availability of suitable resources, whether in terms of materials or equipment. For example, there are cases where some projects have taken too long to complete because the contractors did not have the right machinery on site. Such a scenario would imply that so much time is wasted as they outsource for what they did not originally have. This includes legal possession of land for construction of the relevant facilities which can sometimes take a very long time to acquire, hence causing so much delay*.

Availability of resources involved different dynamics, as illustrated in table 4.10 where Likert scale was applied to measure these dynamics.

Table 4.10 Dynamics of Availability of Resources

Availability of resources	**1=strongly disagree**	**2=Disagree**	**3=Unsure**	**4=Agree**	**5=strongly agree**	***Total***
	f	***f***	***f***	***f***	***f***	***f***
There is no easy access of resources for project implementation.	5	16	12	32	26	91
There is no consistent supply or availability of resources.	1	2	15	41	32	91
The available resources are not adequate for the projects.	7	9	19	34	22	91
All project beneficiaries are not united for resource mobilization.	0	11	14	39	27	91
Lack of resources poses a serious challenge to water project implementation in Arua district.	0	2	7	45	37	91
Mean	**3**	**8**	**13**	**38**	**29**	**91**
Stdev.	**3**	**6**	**4**	**5**	**6**	**0**

The findings in table 4.10 show that 5 (5%), 16 (18%), 12 (13%), 32 (35%), and 26 (29%) of the respondents strongly disagreed, disagreed, neither agreed nor disagreed (unsure), agreed, and strongly agreed, in that order, that there is no easy access of resources for project implementation. It also turned out that 1 (1%), 2 (2%), 15 (16%), 41 (45%), and 32 (35%) of the respondents strongly disagreed, disagreed, neither agreed nor disagreed (unsure), agreed, and strongly agreed, respectively, that there is no consistent supply or availability of resources. Concerning the proposition that the available resources are not adequate for the projects, 7 (8%) of the respondents strongly disagreed, 9 (10%) disagreed, 19 (18%) were unsure, 34 (37%) agreed, while 22 (24%) strongly agreed. It also emerged that 11 (12%) of the respondents disagreed, 14 (15%) were unsure, 39 (43%) agreed, whereas 27 (32%) strongly agreed that all project beneficiaries are not united for resource mobilization.

Finally, 2 (2%) of the respondents disagreed, 7 (8%) were unsure, 45 (49%) agreed, while 37 (41) strongly agreed that lack of resources poses a serious challenge to water project implementation in Arua district. On average, the mean and standard deviation for different measurements based on 5-point Likert scale was as follows: 3 (3) strongly disagreed, 8 (6) disagreed, 13 (4) unsure, 38 (5) agreed, and 29 (6) strongly agreed. Based on these averages, it can be deduced that availability of resources significantly influenced implementation of integrated water management and development projects in Arua District.

This research had a correlation with preceding studies in different ways. For instance, through Environmental and Social Management Framework 2018, the Ugandan government has been spearheading efforts for sustainable water resource supply and boosting of sanitation services to all parts of the country through adequate resource allocation (Government of Uganda (GoU), 2018). However, there are still inadequate services of this important commodity due to budgetary constraints.

Like it emerged in the current research, previous researches have shown that adequate resources are important for water resource management in Uganda (Donge, 2013). Yet, efficiency and sustainability in supply remains a serious concern for the Uganda government even today (GoU, 2018). This challenge has been aggravated by lack of serious sectoral collaborative initiatives in planning and implementation, increased frequency of floods and droughts, rapidly expanding

population, growing environmental challenges and pollution of Uganda's water sources. These challenges are further causing heightened risks of the country's hydrological ecosystem, hence requiring a lot of financial resources to effectively address the situation.

Inadequacy of resources for implementation of water projects is not unique to Uganda. According to Donge (2013), a number of rural water facilities in Kenya can easily be dysfunctional if key stakeholders do not proactively initiate mobilization of resources to keep the projects sustainable. It also emerged that projects, including Isiolo water supply, had silted and become nonoperational due to long stay without being serviced. Hence, the projects needed serious rehabilitation through effective and efficient leadership as well as active community organization and participation. Donge (2013) further revealed that most of the nonfunctional water projects had been affected by irregular maintenance, irresponsible usage, and general poor management which together led to failure in management.

Another previous research by Ali (2015) on community ownership and project implementation in Isiolo County in Kenya indicated that leadership of water projects strongly influenced the kind of impact the project can have on the beneficiaries. Another previous study by Rimberia (2012) conducted in Nyeri County revealed that most water projects in developing countries are facing the challenge of sustainability due to lack of constant flow of financial resources and effective physical infrastructure. Further, inadequate financial resources made it difficult for the project managers to reliably maintain their projects for the long term benefits to the key stakeholders. These findings were three years later corroborated by another research by Kemuma (2015) carried out on financial resources on sustainability of water resource management. The findings indicated that finances are very critical in allowing timely completion, maintenance and sustainability of water projects.

4.4.2 Influence of Community Involvement on Implementation of Projects

The second specific objective determined the influence of community involvement on implementation of integrated water management and development projects in Arua District, Uganda. Table 4.11 provides summary of the responses on whether community involvement influences implementation of integrated water management and development projects in the area.

Table 4.11 Influence of Community Involvement on Project Implementation

Response	Frequency (n)	Percentage (%)
Yes	72	79
No	19	21
Total	**91**	**100**

The statistics above indicate that 72 (795) respondents answered yes whereas 19 (21%) of them answered no regarding whether community involvement influences implementation of integrated water management and development projects in Arua District in any way. The respondents further noted the project management process allowed setting of right priorities for all the key stakeholders in the implementation process. To sum up these views, respondent 2 who was a government ministry official had the following to say:

> *Community involvement in the whole project implementation cycle is very critical as it encourages transparency and accountability of the management and other individuals charged with different key responsibilities. For instance, donor money is utilized well, and in the process more funding is attracted for enhanced project initiation and enhanced completion rates. It is also highly likely that community participation will enable equitable distribution of benefits of the projects and ensure that even the disadvantaged groups access similar benefits as everyone else.*

Community involvement involved different dynamics, as illustrated in table 4.12 where Likert scale was applied to measure these dynamics.

Table 4.12 Dynamics of Community Participation

Community involvement	**1=strongly disagree**	**2=Disagree**	**3=Unsure**	**4=Agree**	**5=strongly agree**	***Total***
	f	***f***	***f***	***f***	***f***	***f***
There is no effective community involvement in project implementation.	7	11	2	41	30	91

The level of community participation is too low for effective project implementation.	9	12	4	37	29	91
Most water projects are facing leadership challenges that have derailed community involvement in implementation process.	12	17	18	23	21	91
All project beneficiaries are not united to push for community involvement.	11	19	15	21	25	91
Lack of community involvement poses a serious challenge to water project implementation in Arua district.	0	2	12	44	33	91
Mean	**8**	**12**	**10**	**33**	**28**	**91**
Stdev	**5**	**7**	**7**	**11**	**5**	**0**

As shown in table 4.12, 7 (8%), 11 (12%), 2 (2%), 41 (45%), and 30 (33%) strongly disagreed, disagreed, neither agreed nor disagreed (unsure), agreed, and strongly agreed, in that order, that there is no effective community involvement in project implementation. Furthermore, 9 (10%), 12 (13%), 4 (4%), 37 (41), and 29 (32%) of the respondents strongly disagreed, disagreed, neither agreed nor disagreed (unsure), agreed, and strongly agreed, respectively, that the level of public participation is too low for effective project implementation.

Concerning the proposition that most water projects are facing leadership challenges that have derailed community involvement in implementation process, 12 (13%) strongly disagreed, 17 (19%) disagreed, 18 (20%) were unsure, 23 (25%) agreed, whereas 21 (23%) of them strongly agreed with this view. The statistics also showed that 11 (12%) strongly disagreed, 19 (21%) disagreed, 15 (16%) were unsure, 21 (23%) agreed, whereas 25 (27%) strongly agreed that all project beneficiaries are not united to push for community involvement. Finally, 2 (2%) of the respondents disagreed, 12 (13%) were unsure, 44 (48%) agreed, while 33 (36%) strongly agreed

that lack of community involvement poses a serious challenge to water project implementation in Arua district. On average, the mean and standard deviation for different measurements based on 5-point Likert scale was as follows: 8 (5) strongly disagreed, 12 (7) disagreed, 10 (7) were unsure, 33 (11) agreed, while 28 (5) strongly agreed. Based on these averages, it can be deduced that community involvement significantly influenced projects in Arua District.

The role of community involvement in project implementation has been emphasized in other previous researches. According to Kemuma (2015), lack of consistent community involvement resulted into low levels of ownership of water projects at the local level which interfered with effective and efficient running of such initiatives. Furthermore, Kipkeny (2014) established that design and execution of integrated water management and development projects is often relatively easier when community members are involved in every step of the way. Participation can be in form of skills needed in specific areas of the project implementation process, or attending meetings as committee members. Furthermore, individuals can participate by offering labour services in the physical sense. There is also the aspect of offering material resources, such as construction materials like bricks and iron sheets among others. Habtamu (2012) also posits that community involvement in water project management and development can also be in form of monetary resources or donations in the initiation and execution of water projects.

Like current research, Ochelle (2012) did a study and noted that the element of community involvement in successful running of water projects cannot be ignored. Furthermore, it was revealed that input by all local stakeholders at the inception of water projects was very critical as this helped in the designing of projects based on the immediate needs of majority of the beneficiaries. Also, involving the public during the project design phase generally meant that the right priorities were set, hence encouraging full ownership of the projects right from their initial stages to the time of completion. Also, Mustafa (2016) noted that good government policies would always lead to successfully sustained water projects. The findings further indicated that a many people who participated in the study did so because they had similar needs and priorities relating to their lives. Common involvement of community members also provided an opportunity to a number of them to understand their water resource needs. It also emerged that 89% of the community members thought that their participation significantly influenced how sustainable it was to maintain water projects, hence validating the outcome of the current research.

4.4.3 Support Structures and Implementation of Projects

The third specific objective related to examining the influence of support structures on implementation of integrated water management and development projects in Arua District, Uganda. Table 4.13 provides summary of the responses on whether support structures influence implementation of integrated water management and development projects in the area.

Table 4.13 Influence of Support Structure on Project Implementation

Responses	Frequency (n)	Percentage (%)
Yes	79	87
No	12	13
Total	**91**	**100**

The findings above show that 79 (87%) of those involved in the research answered yes whereas 12 (13%) of them answered no regarding whether support structures influence implementation of integrated water management and development projects in Arua District in any way. Furthermore, the respondents observed that strong support structures allowed effective management and implementation of the projects where different components were easily coordinated. Lack of sufficient support structures could easily delay implementation of the projects. This is most likely the case given the complexity of managing the main components of integrated water resources of storm water administration, wastewater treatment, water supply, and conservation of existing water resources. These views were consolidated as below:

> *Integrated water resource management is usually a complex process and so requires strong and stable infrastructure for bringing together all of its components. This approach will also ensure that there is constant water supplies infrastructure for meeting the demands of the community. At the same time, environmental conservation measures are almost clearly assured whenever there are strong support structures in integrated water project management and implementation.*

Support structures involved different dynamics, as illustrated in table 4.14 where Likert scale was applied to measure these dynamics.

Table 4.14 Dynamics of Support Structures

Support structures	1=strongly disagree	2=Disagree	3=Unsure	4=Agree	5=strongly agree	*Total*
	f	*f*	*f*	*f*	*f*	*f*
There are no effective M&E strategies for project implementation.	5	9	16	33	28	91
Majority of the water project managers lack effective managerial skills	19	22	14	21	15	91
Majority of the water projects lack effective ICT infrastructure for easier planning.	17	18	9	23	24	91
All project beneficiaries are not proactively addressing the challenge of support structure.	12	15	18	25	21	91
Generally poor support structure poses a serious challenge to water project implementation in Arua district.	0	13	22	37	19	91
Mean	**11**	**15**	**16**	**28**	**21**	**91**
Stdev	**8**	**5**	**5**	**7**	**5**	**0**

The statistics above indicate that 5 (5%) strongly disagreed, 9 (10%) disagreed, 16 (18%) were unsure, 33 (36%) agreed, while 28 (31%) strongly agreed with the proposition that there are no effective M&E strategies for project implementation. It was also evident that 19 (21%) strongly disagreed, 22 (24%) disagreed, 14 (15%) neither agreed nor disagreed (unsure), 21 (23%) agreed, whereas 15 (16%) of them strongly agreed that majority of the water project managers lack effective managerial skills. The findings also showed that 17 (19%), 18 (20%), 9 (10%), 23 (25%), and 24 (26%) strongly disagreed, disagreed, neither agreed nor disagreed (unsure), agreed,

and strongly agreed, respectively, that majority of projects in Arua District lack effective ICT infrastructure for easier planning.

Regarding the insinuation that all project beneficiaries are not proactively addressing the challenge of support structure, 12 (13%) strongly disagreed, 15 (16%) disagreed, 18 (20%) were unsure, 25 (27%) agreed, while 21 (23%) strongly agreed. Finally, 13 (14%) of the respondents disagreed, 22 (24%) were unsure, 37 (41%) agreed, and 19 (21%) of them strongly agreed with the suggestion that generally poor support structure poses a serious challenge to water project implementation in Arua district. On average, the mean and standard deviation of the responses for different measurements based on 5-point Likert scale were as follows: 11 (8) strongly disagreed, 15 (5) disagreed, 16 (5) were unsure, 28 (7) agreed, and 21 (5) strongly agreed. Give the mean and standard deviation across all the 5 domains of responses, it was inferred that support structure significantly influenced implementation of integrated water management and development projects in Arua District.

Successful implementation of integrated water projects requires proper support structure for execution of the same. This revelation was evidently reiterated in this study's findings, as well as clearly reflected in several other previous researches. A study by Rono and Aboud (2013) carried out in Nandi County in Kenya recommended the needed for all key shareholders in all public projects including on water management to encourage public participation at all times. The study further noted the importance of public sensitization to mobilize their views regarding implementation of projects that potentially have a significant impact in their general wellbeing. In a study to establish the dynamics that contributed to the successful running of similar water initiatives in Kenya among the communities residing in the northern part of the country where they are perennially affected by droughts, Maimuna (2017) established that many dynamics influenced performance of water projects in this area. For instance, more than 73% of the community residents concurred that community involvement in project implementation impacted the projects in a major way. The research concluded that it was essential for the members of the public to be given a chance to express their views on how to strategically implement projects concerning their welfare. These views largely concurred with the findings of the current research despite being carried out in a different study area in Uganda.

Tifow (2013) noted that various aspects of water infrastructure had different effects on the performance. These included availability of spares, maintenance costs, operational costs, and type used, such as solar and hand pump, to mention but a few. It also emerged that project management played a significant role in performance of water projects. Equally important for water project performance were maintenance funds whose source included water use charges, government funding, and financial assistance from funding agencies. As established by Tifow (2013), a greater percentage of facilities used in water initiatives were functional courtesy of involvement of all key stakeholders. Similarly, more than 95% affirmed that water supply facilities were largely viable due to the fact that there were active roles directly undertaken by all local stakeholders in running and execution of the water supply projects. Evidently, public participation in implementation of water supply projects was respected by a greater majority of the committee members due to its ability to enable members to give their views whenever it was deemed necessary.

4.4.4 Political Environment and Implementation of Projects

The fourth specific objective involved trying to understand how political environment impacted the processes of implementing integrated water management and development projects in Arua District, Uganda. Table 4.15 provides summary of the responses on whether political environment influences implementation of integrated water management and development projects in the area.

Table 4.15 Influence of Political Environment on Project Implementation

Responses	Frequency (n)	Percentage (%)
Yes	83	91
No	8	9
Total	**91**	**100**

The summary above indicates that 83 (91%) agreed that political environment influences implementation of integrated water management and development projects in Arua District in one way or the other. However, 8 (9%) expressed contrasting opinions. The respondents further noted that since water is a very important resource among all communities, very many key stakeholders

tend to actively and seriously participate in determining how these resources were managed. On the other hand, it requires a strong political will to mobilize necessary resources for building strong and viable integrated water management institutions and infrastructures. These views were further reinforced by respondent 1 who is an NGO manager in one of the local non-governmental organizations by observing that:

> *Water resource management in Arua has so many interested parties, especially given the scarcity of this commodity in the area. That automatically means that even the local political class has direct vested interests that require direct attention. There are also other several organizations, both local and national, that often put immense pressure to push for their interests. In this case therefore, it is evident that the political environment significantly impact the implementation of integrated water management and development projects in Arua District*.

Political environment involved different dynamics, as illustrated in table 4.16 where Likert scale was applied to measure these dynamics.

Table 4.16 Dynamics of Political Environment

Political environment	**1=strongly disagree**	**2=Disagree**	**3=Unsure**	**4=Agree**	**5=strongly agree**	***Total***
	f	***f***	***f***	***f***	***f***	***f***
There are common political interferences in water project implementation.	7	11	13	32	28	91
The level of public support is low due to external interferences.	2	6	9	43	31	91
Project selection process is often biased due to external influences.	12	14	15	26	24	91
All project beneficiaries are not united against political interferences in project management and implementation.	9	12	17	32	21	91
Political environment poses a serious	23	27	13	15	13	91

challenge to water project implementation in Arua district.						
Mean	**11**	**14**	**13**	**30**	**23**	**91**
Stdev	**8**	**8**	**3**	**10**	**7**	**0**

The summary above shows that 7 (8%) strongly disagreed, 11 (12%) disagreed, 13 (14%) were unsure, 32 (35%) agreed, while 28 (31%) strongly agreed with the insinuation that there are common political interferences in water project implementation. It also emerged that 2 (2%) strongly disagreed, 6 (7%) disagreed, 9 (10%) neither agreed nor disagreed (unsure), 43 (47%) agreed, whereas 31 (34%) of them strongly agreed that the level of public support is low due to external interferences. Furthermore, the statistics showed that12 (13%), 14 (15%), 15 (16%), 26 (29%), and 24 (26%) strongly disagreed, disagreed, neither agreed nor disagreed (unsure), agreed, and strongly agreed, respectively, that project selection process is often biased due to external influences.

Concerning the intimation that all project beneficiaries are not united against political interferences in project management and implementation, 9 (10%) strongly disagreed, 12 (13%) disagreed, 17 (19%) were unsure, 32 (35%) agreed, while 21 (23%) strongly agreed. Finally, 23 (25%) strongly disagreed, 27 (30%) disagreed, 13 (14%) were unsure, 15 (16%) agreed, and 13 (14%) of them strongly agreed with the suggestion that political environment poses a serious challenge to water project implementation in Arua district. On average, the mean and standard deviation of the responses for different measurements based on 5-point Likert scale were as follows: 11 (8) strongly disagreed, 14 (8) disagreed, 13 (3) were unsure, 30 (10) agreed, and 23 (7) strongly agreed. On average across all the 5 domains of responses, it was inferred that political environment significantly influenced implementation of integrated water management and development projects in Arua District.

Generally, different factors influencing project implementation of integrated water management and development projects in dry areas in Uganda impacted projects in various ways. This included late completion of the projects, low quality of the project implementation outcomes, low cost effectiveness, and limited scope of the projects due to scarcity of resources, as well as low

user or public satisfaction. The current study established that political environment significantly influences effective operation of integrated water management and development projects. Similarly, according to Oraro (2012), effective and efficient project governance founded on the right political environment is a prerequisite for sustainability. This further implies that the right political environment will guarantee good policies that will in turn make it easier for implementation of projects.

In agreement with the current research, Maimuna (2017) further noted that good governance presupposes transparency, accountability and fair justice to all affected parties in implementation of integrated water supplies management and development projects. This means that a fair political environment will give all the stakeholders a chance to equitably contribute ideas and put in efforts in the whole process of project implementation. Open and effective participation of all the beneficiaries of a project further enhances sustainability of the project since all the concerned parties stand a better chance of agreeing on a number of things related to the running of the project. According to Tifow (2013), the right political environment further ensures that there is easy integration of policy considerations, evaluation of varied opinions from different quarters, and making of critical decisions in a fair manner. Such a scenario also restores respect on social institutions and in the process gives the ordinary citizens a strong voice in charting their own destinies through practically applied projects.

Rimberia (2012) further noted that good governance in a fair political environment further removes or minimizes unnecessary bureaucracies so as to give members of the public the liberty to sustainably participate in project management and implementation. In water resource management context, there are common ways of sanctioning of important events, and specific rules for making compromises for the sake of smooth running of any project in question. Clear and effective regulatory institutional frameworks allow better overseeing of water supplies project implementation in order to safeguard initiated water projects for the long term. Efficient operational structures will also ensure that national policies are operationalized and property rights protected. Such a scenario will furthermore ensure that investment benefits in water projects are equitably generated and shared.

Rono and Aboud (2013) further observe that the right political environment at the local level engenders a stable and predictable regulatory regime which allows transparency, accountability, and professionalism in the process. This allows all key shareholders in water projects to initiate policies that will support favourable environment for community involvement and private sector participation in implementation of integrated water supplies projects. A study by Munyui (2015) to understand different dynamics in Kitui Wes, it emerged that community participation, technology, management style, and financial status were some of the common factors influencing project implementation in Kitui West. In order to address such challenges, there was need for general politically favourable environment where project management committee members are sufficiently taken through participatory appraisal tools to progressively evaluate projects throughout their implementation process. These views were clearly reiterated in the current study, thus reinforcing the importance of fair political in arid and semi-arid areas.

CHAPTER FIVE
SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

The section presented summary, conclusions and recommendations. The summary, conclusions and recommendations were presented along specific objectives of the study. Additionally, the chapter presented suggestions for further research.

5.2 Summary of the Findings

The main research objective was to investigate perceived factors influencing project implementation in Uganda's dry areas, specifically focusing on integrated water management and development projects in Arua District. The study dwelt on four specific objectives, as summarized below.

5.2.1 Availability of Resources and Implementation of Integrated Water Projects

Having adequate resources is a prerequisite for effective implementation of integrated water resource management and development projects. Many residents in Uganda's dry areas appreciated the fact that there are many different components of the whole process of management of integrated water projects, and therefore sufficient resources are required for successful outcomes. Lack of sufficient resources resulted into lagging behind of completion of projects, poor quality of the projects, varying of project scope by trying to adjust them to the available resources rather than the needs of the end users, and shooting of the overall cost due to dragging of the project completion schedules.

Insufficient resources also ended up interfering with the overall cost-effectiveness of the projects since some of the processes are delayed, such as procurement and purchasing of essential items for implementation of the projects. Other implications of availability of resources on implementation of integrated water projects include inconsistency in progress, failure to meet public satisfaction and expectations, and general lack of the capacity of the project implementation and management stakeholders to consistently meet community water needs. It

was also evident that availability of resources meaningfully impacted implementation of integrated water management and development projects in Arua District.

5.2.2 Community Involvement and Implementation of Integrated Water Projects

Community involvement in implementation of local projects is a fundamental right of the public. This helps, among other things, to set priorities according to the beneficiaries of the project under consideration. This approach also gave all the stakeholders in the implementation the right to give their input and subsequently enhance ownership of the critical decisions needed in the operation of the projects at any given time. Public involvement in the implementation of the projects also ensured smooth running of the projects since as many people as possible were party to the design and actualization of the projects.

Also, community involvement in the whole project implementation cycle is very critical as it encourages transparency and accountability of the management and other individuals charged with different key responsibilities in the implementation. This includes prudent utilization of donor money, and in the process attracting more funding for enhanced project initiation and increased completion rates. A democratic process of involvement of the citizenry in project implementation also enabled equitable distribution of benefits of the projects and ensured that even the disadvantaged groups access similar benefits from the projects as everyone else. Concerted efforts from all stakeholders of a project generally led to more effective leadership for better outcomes of project implementation.

5.2.3 Support Structure and Implementation of Integrated Water Projects

Infrastructural provisions engenders accelerated progress in water project development. This implies that strong support structures allowed effective management and implementation of the projects where different components were easily coordinated. Lack of sufficient support structures could easily delay implementation of the projects. Given the complex nature of integrated water management and development projects, strong and stable infrastructure are needed for bringing together all the different components for smooth operation of the projects. This approach will also ensure that there is constant water supplies infrastructure for meeting the demands of the community.

Clear support structure also ensured that environmental conservation measures are almost clearly assured in integrated water project management and implementation. Evidently, strong support structures meant that there were effective monitoring and evaluation strategies for project implementation, clear and competent managerial structures, effective ICT infrastructure for easier planning, and proactive engagement of all project implementation stakeholders for addressing the challenge of support structure. Generally poor support structure can pose a serious challenge to water project implementation.

5.2.4 Political Environment and Implementation of Integrated Water Projects

Stable political environment is always important for affective implementation of projects for communities. This was also evident with regard to integrated water projects since water is a very important resource among all communities. Strong political will was also critical in mobilizing of necessary resources for building strong and viable integrated water management institutions and infrastructures. Water resource management in Arua has so many interested parties, especially given the scarcity of this commodity in the area. This made even the local political class to have direct vested interests that require direct attention. There are also other several organizations, both local and national, that often put immense pressure to push for their interests. In this case therefore, it is evident that the political environment affects implementation of integrated water management and development projects in Arua District.

Furthermore, given the immense interests in the scarce water resource in Arua area, there are common political interferences in water project implementation, relatively low level of public support due to external interferences, biased project selection as a result of undue political pressure, and divided efforts among key stakeholders when it comes to project management and implementation. Generally therefore, political environment poses a serious challenge to water project implementation in Arua district.

5.3 Conclusions

Availability of resources is critical in effective implementation of integrated water resource management and development projects. Lack of sufficient resources often leads to lagging behind

of completion of projects, poor quality of the projects, varying of projects scope since this creates the need to adjust them to the available resources rather than the needs of the end users.

Community involvement in implementation of local projects is a fundamental right of the public as this helps to set priorities according to beneficiaries of the project under consideration. Public involvement in implementation of projects also contribute to smooth running of projects since as many people as possible are party to the design and actualization of the projects.

Infrastructural provisions ensure that there is accelerated progress in project implementation. Lack of sufficient support structures could easily derail implementation of integrated water projects. Clear support structure also ensured that environmental conservation measures are almost clearly assured in integrated water project management and implementation. Generally poor support structure can pose a serious challenge to water project implementation.

Stable political environment is always important for affective implementation of projects for communities. Strong political will was also critical in mobilizing of necessary resources for building strong and viable integrated water management institutions and infrastructures. Given the immense interests in the scarce water resource in Arua area, there are common political interferences in water project implementation, relatively low level of public support due to external interferences, biased project selection as a result of undue political pressure, and divided efforts among key stakeholders when it comes to project management and implementation.

5.4 Recommendations

The study recommended the need for all key stakeholders in integrated water resources in Arua district to put in concerted efforts to mobilize necessary resources for effective implementation of the projects. Mechanisms must be instituted to improve community contribution space in water implementation projects. Also, it was important for the creation of the right support structures for effective implementation and management of water projects for the people in dry areas of Arua district of Uganda. Finally, it was important for the creation of the right political environment to allow peaceful management and implementation of integrated water projects in the area.

5.5 Suggestions for Further Studies

There should be further study on the Ugandan government's role in mitigating challenges affecting implementation of integrated water management and development programs in dry areas in Uganda.

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APPENDICES

Appendix I: Introduction Letter

I am a Masters student in the University of Nairobi currently undertaking a study on **factors influencing project implementation in arid and semi-arid areas in Uganda: a case of integrated water management and development Projects in Arua District**. You have been identified as one of the resourceful individuals and would therefore request you to spare a few minutes of your time so that you can give me relevant information to help me complete this research.

It is my assurance that all the information you share shall be kept confidential. You can ask for any clarifications you may need at any time. It is my hope that you will fully participate in the study and that you will give me credible information to enable me accomplish my study. Thank you.

Yours sincerely,

Sign……

Arnold Rotich

Appendix II: Questionnaire for Respondents

This research is about **factors influencing project implementation in arid and semi-arid areas in Uganda: a case of integrated water management and development Projects in Arua District.** Please, kindly provide as accurate information as possible.

SECTION I: RESPONDENTS' PERSONAL INFORMATION

1. What is your gender?
   Male [ ]
   Female [ ]
2. What is your age bracket?
   20 - 30 Years [ ]
   31 - 40 Years [ ]
   41 - 50 Years [ ]
   51 - 60 Years [ ]
   Above 60 Years [ ]
3. What is your level of education?
   Secondary [ ]
   College [ ]
   University [ ]
   Other (specify)……. [ ]
4. What is your role in this area?
   Management Committee Member [ ]
   NGOs/CBOs Management Staff [ ]
   Government Ministry official [ ]
5. How long have you held the role you are currently holding?
   1 - 5 Years [ ]
   6 - 10 Years [ ]
   11 - 15 Years [ ]
   15+ years [ ]

SECTION II: PROJECT IMPLEMENTATION

6. Are there serious factors that influence completion of projects in this area?

   a) Yes [ ] b) No [ ]

Please, briefly explain in details your answer above?

.....

7. Using a Likert scale of 1-5 where **5=strongly agree; 4=Agree; 3=Unsure; 2=Disagree; 1=strongly disagree;** please mark a tick (√) in appropriate response to the following statements regarding how project completion is affected in Arua District:

Project completion		**1**	**2**	**3**	**4**	**5**
i.	The projects tend to lag behind time completion schedules.					
ii.	Some of them tend to be of poor quality.					
iii.	A number of them tend not to be cost-effective due to interference.					
iv.	Not all the projects are implemented within the original scope.					
v.	Not all the projects are implemented to the user or public satisfaction.					

SECTION III: AVAILABILITY OF RESOURCES

8. Do you think that availability of resources influences implementation of integrated water management and development projects in Arua District in any way?

   a) Yes [ ] b) No [ ]

Please, briefly explain in details your answer above?

.....

9. Using a Likert scale of 1-5 where **5=strongly agree; 4=Agree; 3=Unsure; 2=Disagree; 1=strongly disagree;** please mark a tick (√) in appropriate response to the following statements regarding the influence of availability of resources on implementation of integrated water management and development projects in Arua District:

Availability of resources		**1**	**2**	**3**	**4**	**5**
i.	There is no easy access of resources for project implementation.					
ii.	There is no consistent supply or availability of resources.					
iii.	The available resources are not adequate for the projects.					
iv.	All project beneficiaries are not united for resource mobilization.					
v.	Lack of resources poses a serious challenge to water project implementation in Arua district.					

SECTION IV: COMMUNITY INVOLVEMENT

10. Do you think that community involvement influences implementation of integrated water management and development projects in Arua District in any way?

a) Yes [ ] b) No [ ]

Please, briefly explain in details your answer above?

.....

11. Using a Likert scale of 1-5 where **5=strongly agree; 4=Agree; 3=Unsure; 2=Disagree; 1=strongly disagree;** please mark a tick (√) in appropriate response to the following statements regarding the influence of community involvement on implementation of integrated water management and development projects in Arua District:

Community involvement		**1**	**2**	**3**	**4**	**5**
i.	There is no effective community involvement in project implementation.					
ii.	The level of community participation is too low for effective project implementation					
iii.	Most water projects are facing leadership challenges that have derailed community involvement in implementation process.					
iv.	All project beneficiaries are not united to push for community involvement.					
v.	Lack of community involvement poses a serious challenge to water project implementation in Arua district.					

SECTION V: SUPPORT STRUCTURES

12. Do you think that support structures influence implementation of integrated water management and development projects in Arua District in any way?

a) Yes [ ] b) No [ ]

Please, briefly explain in details your answer above?

.....

13. Using a Likert scale of 1-5 where **5=strongly agree; 4=Agree; 3=Unsure; 2=Disagree; 1=strongly disagree;** please mark a tick (√) in appropriate response to the following statements regarding the influence of support structure on implementation of integrated water management and development projects in Arua District:

Support structures		**1**	**2**	**3**	**4**	**5**
i.	There are no effective M&E strategies for project implementation.					
ii.	Majority of the water project managers lack effective managerial skills					

iii.	Majority of the water projects lack effective ICT infrastructure for easier planning.					
iv.	All project beneficiaries are not proactively addressing the challenge of support structure.					
v.	Generally poor support structure poses a serious challenge to water project implementation in Arua district.					

SECTION VI: POLITICAL ENVIRONMENT

14. Do you think that political environment influences implementation of integrated water management and development projects in Arua District in any way?

    a) Yes [ ] b) No [ ]

Please, briefly explain in details your answer above?

.....

15. Using a Likert scale of 1-5 where **5=strongly agree; 4=Agree; 3=Unsure; 2=Disagree; 1=strongly disagree;** please mark a tick (√) in appropriate response to the following statements regarding the influence of political environment on implementation of integrated water management and development projects in Arua District:

Political environment		**1**	**2**	**3**	**4**	**5**
i.	There are common political interferences in water project implementation.					
ii.	The level of public support is low due to external interferences					
iii.	Project selection process is often biased due to external influences.					
iv.	All project beneficiaries are not united against political interferences in project management and implementation.					
v.	Political environment poses a serious challenge to water project implementation in Arua district.					

16. Give general views regarding factors influencing project implementation in arid and semi-arid areas in Uganda using a case of integrated water management and development Projects in Arua District. Please give specific reference to:

    i. Timeliness in completion

    .....

    .....

    ii. Quality of outcome

    .....

.....

iii. Cost effectiveness

.....

.....

iv. Scope of projects

.....

.....

v. User/public satisfaction

.....

.....

Thank you

Appendix III: Krejcie & Morgan 1970 Sampling Table

Table 3.1

Table for Determining Sample Size of a Known 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	346
25	24	130	97	320	175	950	274	4000	351
30	28	140	103	340	181	1000	278	4500	354
35	32	150	108	360	186	1100	285	5000	357
40	36	160	113	380	191	1200	291	6000	361
45	40	170	118	400	196	1300	297	7000	364
50	44	180	123	420	201	1400	302	8000	367
55	48	190	127	440	205	1500	306	9000	368
60	52	200	132	460	210	1600	310	10000	370
65	56	210	136	480	214	1700	313	15000	375
70	59	220	140	500	217	1800	317	20000	377
75	63	230	144	550	226	1900	320	30000	379
80	66	240	148	600	234	2000	322	40000	380
85	70	250	152	650	242	2200	327	50000	381
90	73	260	155	700	248	2400	331	75000	382
95	76	270	159	750	254	2600	335	1000000	384

Note: N is Population Size; S is Sample Size *Source: Krejcie & Morgan, 1970*