



**COLLEGE OF HUMANITIES AND SOCIAL SCIENCES  
INSTITUTE FOR DEVELOPMENT STUDIES**

**WATER ACCESS FOR SUSTAINABLE RURAL DEVELOPMENT UNDER  
DEVOLVED GOVERNMENT SYSTEM IN KAKAMEGA COUNTY**

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## DEDICATION

*To*

*Mum, Dad*

*& Maxwell*

*For your love, encouragement, support and believing in me*

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## ACRONYMS & ABBREVIATIONS

CECM	Chief Executive Committee Member
CIDP	County Integrated Development Plan
COK	Constitution of Kenya
FINNIDA	Finnish International Development Agency
GOK	Government of Kenya
KACWASCO	Kakamega County Water and Sanitation Company
KEFINCO	Kenya Finland Company
KNBS	Kenya National Bureau of Statistics
LVNWSB	Lake Victoria North Water Services Board
MDGs	Millennium Development Goals
NACOSTI	National Commission for Science, Technology and Innovation
NEPAD	The New Partnership for African Development
NGO	Non -Governmental Organization
OECD	Organization for Economic Co-operation and Development
SDGs	Sustainable Development Goals
SID	Society for International Development
UN	United Nations
UNDESA	United Nations Department of Economic and Social Affairs
UNDP	United Nations Development Program
UNESCO	United Nations Educational, Scientific and Cultural Organization
WAB	Water Appeals Board
WASH	Water, Sanitation and Hygiene
WASREB	Water Services Regulatory Board
WCGs	Water Consumer Groups
WIN	Water Integrity Network
WHO	World Health Organization
WRMA	Water Resources Management Authority
WRUAs	Water Resource User Association
WSB	Water Services Board
WSP	Water Services Providers
WSTF	Water Services Trust Fund
WWAP	World Water Assessment Program
WWDR	World Water Development Report

## ABSTRACT

This research project is on the provision of water for rural sustainable development under the devolved government system in Kakamega County. It investigates the theoretical and practical linkages between devolved governance system and water access for rural sustainable development. The study is grounded on institutional theory that contends the use of institutions for efficiency in service delivery, that productivity and efficiency are the core premises that define the role of formal institutions. Three objectives were set, namely to; describe the devolved government system for water services in Kakamega County, analyze the devolved government policy on water access and examine the devolved government initiatives geared towards sustainable water access for human development. The study took place in Shitochi and Ikuywa sub-locations. Shitochi sub-location is found in Isukha South Ward while Ikuywa is in Isukha East both of which are in Shinyalu Constituency. The study employed a combination of qualitative and quantitative research approaches. The qualitative method involved the use of interview guides administered to 17 key informants and 2 Focus Group Discussions consisting of 10 respondents from each of the sub-locations. The quantitative method administered questionnaires to 40 households in Shitochi and 35 in Ikuywa respectively, which were purposively selected. The findings of this research project show that there are theoretical and practical linkages between devolved governance system and water access for rural sustainable development. Effective institutional framework should be accompanied by qualified human resource expertise. Secondly, the policy framework on water access in Shitochi and Ikuywa sub-locations is a combination of both national and county governments policies. However, the study established that at the county level the development of policies is still at the nascent stage to suit the prevailing dynamics. Finally, there are multiple stakeholders such as the National and County governments, NGOs and individuals involved in the provision of water to rural households. However, most of the efforts are made by the individual homesteads. The study makes the following recommendations; improve coordination among the various stakeholders; clarify the roles and responsibilities of stakeholders, hasten the development of homegrown policies, a comparative study of the impact of devolution on water accessibility in federal states.

## CHAPTER ONE

### INTRODUCTION TO THE STUDY

#### 1.1 Background

Human development is in essence people leading a valuable life and are empowered to achieve their capacity as human beings. In the contemporary widely held perspective, human development is based on policies that envision time bound goals at all levels. In 2000 the United Nations set out 8 Millennium Development Goals (MDGs) to help improve livelihoods in the developing countries. Specifically, MDG 7 set the target of reducing the number of people without sustainable access to safe drinking water and sanitation by 50% (UN, 2015).

The projected water access (MDG 7) would contribute to improved health and sanitation and lead to eradication of opportunistic water borne diseases such as cholera and diarrhea that affect mostly children. On the same premise, improved access to water is predicted to reduce mortality rate of the poor in the developing world where it is estimated that 60% of the population have no sustainable supply of safe drinking water (UN, 2015).

According to UNICEF and WHO, enhanced water sources include; Public taps, Protected wells, Rainwater and water piped into households. Unimproved water sources are Rivers, Ponds, Unprotected wells, Tankers and Bottled water (UNICEF&WHO, 2015). The 1990 marked the end of the global decade for raising awareness for safe drinking water supply and sanitation. The decade which was dubbed 'International drinking water and supply and sanitation' saw an extra 1.3 billion people acquire to drinking water and left out about 1.2 billion (Christmas, 1990). Since the Decade ended

in 1990, the hopes for continuity and improvement now settled with the ‘World Water Assessment Programme’, (WWAP) a joint effort of the UN System and its member states that does a biennial assessment of the state of global freshwater resources.

The 2018 UN World Water Development Report (WWDR) enlightens stakeholders both internal and external to the water community, on the possibilities of Nature-Based Solutions (NBS) to find solutions for current water management issues in all the sectors and mainly concerning water for agriculture production, sustainable urban cities, disaster risk reduction and the quality of water (WWDR, 2018). Furthermore, the launch of the second International Water Decade 2005-2015 dubbed “Water for Life” provided an impetus for the assessment program (UNDESA, 2014). Consequently, the decade of advocacy has been successful in having water access and supply on the agenda of all agencies.

Water Aid which is a global grassroots movement has facilitated citizens to organize groups to enhance water access. In most countries, the section of people with access to water improved between the year 1990 and 2002 (WHO/UNICEF,2004). Accessibility to clean water is a precursor for progress in health, education, nutrition, work and general economic development of a country, this means that without water, the realization of the 2030 Agenda will not be successful. Sustainable Goal 6 is not just a goal in itself, other goals are anchored on it. According to the 2017 Report ‘Stockholm World Water Week 2017’, the world is facing water crisis with one in nine people already lacking access to clean water .60% of people live in areas of water stress, where the water supply cannot or will not continue to meet the demands. (Water Aid, 2017). Furthermore, it’s the poorest and least powerful that are most often without water.

The importance of water to life is underscored by this statement ‘Water is life’. (UNDESA, 2014). Water is one of the most important resources with great implication for Africa’s development. Africa faces massive underdevelopment, endemic poverty and food insecurity. This is exacerbated by a lack of human, economic and institutional capacities that have proved to be a challenge in enabling African countries manage sustainably their water resources. Whilst North Africa is considered to be achieving the millennium development goal on water, Sub-Saharan Africa is off the track with only 60% of its 789million population with access to water (UNDESA, 2014). In Sub-Saharan Africa it is reported that women spend a total of 16hours each day collecting drinking water (Water for Life, 2017).

At regional level, there are three relevant institutions with policy documents that encourage member states, partner states to put in place policies, frameworks and programmes that will promote the realization of water accessibility for all people. In particular, there is The New Partnership for African Development (NEPAD) that emphasizes the need for water for it to be able realize its objectives successfully (Africa Water Journal,2003). In addition, The African Water Vision 2025 echoes the principles of equity in the provision of water.

At the national level, there is in Kenya, the Vision 2030 which spells out the objectives of the government in reducing poverty and improving quality of life through health, education, governance and environment (GOK, 2007). One of the key sectors that could contribute to achieving the envisioned improved quality of life in health, education and environment is the management of the water sector.

The Kenya Constitution 2010 brought into force a two-tier governance structure to administer social and development functions in the country. The constitution envisions that the devolved functions at the county levels should increase the effectiveness of administration in public services. The constitution further identifies the devolved functions to promote efficiency in access to resources and accelerated social and economic development (GOK, 2010). With devolved county government services, it is projected that the lives of Kenyans especially in the rural areas should quickly benefit in service delivery and equitable distribution of water resources.

The water services management in Kakamega County is overseen by the Lake Victoria North Services Board (LVNSB). The LVNSB is one of the decentralized agencies of the Water Services Board (GOK, 2002). The role of the LVNWSB includes that of infrastructure development and water resources management to ensure efficiency in water access in Kakamega County. The devolved governance should therefore be instrumental in promoting human development by affording households with water access to contribute towards sustainable livelihoods (UNDP, 2003). Furthermore, LVNWSB enforces agreements with Water Service Providers (WSPs), in this case Kakamega County Water and Sanitation Company limited (KACWASCO) is the Boards agent to ensure water and sanitation in the County. (Devolution Hub,2016)

## **1.2 Statement of the Research Problem**

The Bill of Rights under the Kenya Constitution 2010 is cognizant of the importance of the water resource and codifies access to safe water as a human right (GOK, 2010). The Water Services Providers (WSP) are bound to advance the constitutional obligation of water access rights both at national and county levels. The Water Services Providers

in Kenya are presently observed to lack the capacity to equitably and sustainably supply water as envisioned in their mandate (WRMA, 2015). Water access in Kenya thus continues to be erratic and unpredictable and therefore exposing the society to hardship in water procurement and access. The devolved governance has been publicized to be an instrument of advancing human development through closer administration of among others the water services to individual households. At the county levels, water access is expected to improve livelihoods (UNDP. 2003). While the county water resource administration should be grounded on efficient water infrastructure, there is still wide inequity and unsustainable water supply in most counties.

In the past five years, the Kakamega County Government has been receiving devolved funding for development programs that include the water sector development. The devolved development funding for water sector should attest to expanded water access to the majority residents in Kakamega. However, the current water access rates in Kakamega demonstrate that there is inadequate water access to most households. The majority of the residents have to contend with fetching water from sources that are far from their homesteads and that do not guarantee hygiene and sustainable supply. The continued struggle by the county residents to access the water commodity from supplies that are not reliable and sustainable raises gaps in the following key areas; firstly, the structure of the governance system in the water sector, secondly, the kind of policies effective to facilitate water access and thirdly the nature of initiatives/projects to facilitate sustainable water accessibility in the county.

### **1.3 Research Questions**

The overall question of this study was to understand the effect of devolved government system on water access for sustainable rural development in kakamega county.

Specifically, the study was informed by the following set of Specific Questions:

- i. What is the Governance Structure of the Devolved Water Sector in Kakamega county?
- ii. What Is the Devolved Government Policy on Water Access?
- iii. What Are the Devolved Government Initiatives (Programs and Projects) Geared Towards Sustainable Water Access for Human Development?

### **1.4 Research Objectives**

This research sets the following objectives:

- i. To Describe the Governance Structure of Devolved Water Sector Kakamega County.
- ii. To Analyze the Devolved Government Policy on Water Access.
- iii. To Examine the Devolved Government Initiatives Geared Towards Sustainable Water Access for Human Development.

### **1.5 Justification of the Study**

This study has both academic and policy justification.

#### **1.5.1 Academic Justification**

Most of the literature on the provision of water services to rural population is from the perspective of water governance. For instance, the OECD Water Governance Initiative is a platform for various stakeholders including private, public and non-profit organizations that converge to discuss issues on water governance across different

levels of the government. (OECD,2018). In addition, there are OECD Water Principles on Water Governance that are employed as a tool for the mentioned stakeholder dialogue.

The Principles, having been adopted in 2015 provide a common thread across to feed both theoretical and conceptual frameworks and draw practical lessons in water governance reforms. This simply means there is a gap in academic literature on accessibility of water to rural population by the devolved governance study. Therefore, this study fills this gap which is important at this juncture as several countries such as Kenya are implementing the devolved governance system. For instance, the 2010 Kenya Constitution that introduced the devolved governance system makes water a devolved function.

The implementation of the devolved governance system in Kenya began in 2013 following the first general election under the new Constitution. Therefore, this means that the devolved governance system has been in operation for the last five years per the constitutional requirement. Thus, this study offers an opportunity to assess the performance of the county governments in relation to the provision of water services using Kakamega County as a case study. Such information and knowledge are very crucial for the policy makers both at the county and central government to help improve water service delivery to the rural population in this second term. In addition, researchers will use the literature to examine water service provisions in other counties in Kenya with the intention of extracting lessons.

From an academic standpoint, this study is going to situate the question of water accessibility to rural population within the Institutionalism Theory. Therefore, at the end of the study, it will be possible to indicate whether the theory of institutionalism is best suitable to explain water accessibility to rural areas under the devolved government. If not, the study will be able to raise the gaps in the theory and probably propose revisions for further study.

### **1.5.2 Policy Justification**

In the development sector, the study will provide relevant information on the links between devolved government structures and water access to rural households. This information will facilitate effective design and funding of water projects in rural areas in the future. The research findings proposed a wide range of policy interventions for effective implementation for water access.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

This sub-section of the study presents a case for Theoretical Framework on devolved governance and water access in the society. It further presents an overview of the study variables and reviews discourses on water access and on devolved governance system. The section critiques the previous studies made by other scholars on devolved governance in addition to water access in rural households.

#### **2.2 Theoretical Literature Review**

The study on devolved governance and water access is embedded on the arguments of Institutional Theory (North, 1990). North argues that where development is sought to be achieved, accepted norms should be entrenched in a policy framework and established set of institutions to regulate the social and economic environment. Devolved governance aims to establish functional institutions that are efficient for public service delivery. In his view, North seeks to explain what development is in a sector in this case, the water sector.

The Institutional Theory is grounded on, norms principles and rules that guide human interaction. North (1990) further argues that productivity and efficiency are the core premises that define the role of formal institutions in advancing service delivery in the society. The formation of the county governments in Kenya was designed with the aim of increasing efficiency of devolved services through resource distribution in the society (GOK, 2010). The presence of the county governments in the Kenyan society implies that water services should be widely distributed through sustainable provision

of water development infrastructure. The county government should formulate necessary policy regulations that are effective in guiding and facilitating water distribution and access to rural households without any discrimination.

North (1990) concludes that the differential performance of a social or economic sector over time is influenced by the way public institutions are structured and administered. It can be inferred from the foregoing assertion that the water services delivery while anchored on the national tenets (GOK, 2002), the devolved units are agents that should initiate water management programmes to ease water access in the rural households. The objective of the decentralization of water services is to sustainably support water delivery services through extended infrastructure, setting up affordable tariffs, licensing of water distribution agents, and resolution of conflicts emerging in the market.

### **2.3 Global Discourses on Water Access to Rural Population**

Water resources make a major contribution to the society's social and economic development. Water is useful at the household level for drinking, preparation of food, maintenance of health and hygiene, and in supporting agricultural activities. In this view water is an essential input in supporting life and sustaining socio-economic activities in households especially in the developing world. The significance of water in the society's socio-economic progress is however faced with multiple challenges arising from the water resource management, distribution and access to satisfy the perpetual increase in demand both in quality and quantity.

Ballabh (2008) observes that water supply in urban areas is segmented between the urban rich and the rural poor. In this regard, the poor households are faced with water shortages as a result of competition where the weaker population entitlements to the

resource is eroded by those who influence water policy and implementation. The approach of water supply through regulatory institutions has led to inequitable water access. The water supply deficits and struggle for water access is observed to contribute to extraction and distribution of water resource by individuals, private companies and community associations to the urban poor households at a cost. The above mode of water supply in the society is short-term and therefore contributes to a higher cost of water, poor water quality and unpredictable supply. The urban poor households are perennially exposed to costly and erratic water supply systems that threaten their lives and survival. The public policy on water has partly contributed to water infrastructure to meet the demand and supply in urban areas but the degree of water access has not yet improved in poor households.

Global statistics indicate that there are large differences in water access between the rich and the poor countries with Sub-Saharan Africa having the lowest water coverage rates at 55% (UNDP,2006). The largest number of people without clean water is found in South Asia. The statistics also show that about 40 developing countries provide clean water to less 70% of their citizens. These figures indicate that water access increases if the income levels of the society increase. The third world countries where income levels remain low and economic growth is slow will continue to grapple with water access as they struggle to improve their economic performance.

The water resource access deficits are estimated to get wider in the society as a result of climate change, urbanization, industrial activities and rapidly growing populations (Jordaan et al, 1993). It is further observed that the declining capacity of states to satisfy water demand in the society could potentially trigger an access crisis since the water

catchment and drainage patterns are static while population growth is always increasing. To address water resource access in the contemporary society, the international community, governments and states are devising strategies through which water resources could be managed to sustain social and economic requirements.

The experiences of governments and states in addressing water access are varied from one region to another according to the level of industrial and economic development. Water access in the developed countries is more enhanced in comparison to the developing world. In the United States of America (USA), all systems for the allocation of water are anchored on a regulatory structure established through a politico-legal process (Kenney,2005). It is observed that in the USA context, the rules governing water resources within basins are different from those that apply between basins. However, surplus waters in the USA are subject to market allocations, while at subsistence levels they are governed by political allocations. In crisis situations water resource allocation in the US is determined by a different set of rules, for example emergency water banks, expropriation of water for priority uses and endangered species protection. The above set of rules and regulations seek to entrench water availability and access to households irrespective of the occasion or season while protecting the environment and promoting sustainable water access to all households (Kenney, 2005).

In Europe, water management is conceived as a set of complex activities to meet the imperatives of economic development. According to Albiac & Murua (2009) water management institutions in the European Union countries seek to create an optimum living environment through conservation, protection and deterioration of water resources (Albiac & Murua, 2009). The water regulatory institutions in the EU

contribute to the rational management of water resources for social and economic development. In this context water resources whether in low or high population density, social and economic requirements are satisfied by activities of local water regulatory organizations. The regulatory organizations have set to achieve a higher degree of production and improved water utilization as outlined in a given social and political framework, the legal regime and the availability of water. River boards and water authorities are therefore established to ensure there is a higher degree of efficiency in the management of water development, coordinate the multipurpose utilization and protection of the water resources.

According to the Joint Monitoring Program Report, approximately 278million people lack access to water in rural sub-Saharan Africa; a figure that makes it the least globally. (Joint Monitoring Program,2010a). These low levels of access have been attributed to inappropriate system designs, poor management of water resources, rent seeking behavior and a low-level institutional capacity. In the developing countries, the poor people are observed to strain in accessing safe water at home and find it difficult to buy the recommended 50 litres a day per person since it is a huge drain on their meagre income (WHO,2003). As a result, many people in developing countries use much less water or resort to collecting water from unsafe sources which threaten human health. In India it is observed that the number of people without access to safe drinking water is about 76 million most of which are poor and live on about £3 a day (World Bank,2014). The majority of these people buy water from tankers at an estimate cost 1 rupee (£0.01) per litre. The report concludes that major the problem undermining water access to majority of the population in India relates to management issues.

In Ethiopia, with a population of 42.2million people without water ranks fourth in the global economy and is observed to have an eschewed water distribution access in favour of the urban centres (WASH, 2016). In the country side such as Oromia, water runs three or four times a month in the taps. The households in these areas therefore resort to purchasing water from vendors at 3 birr (£0.10) for 50 litres at the point of sale, or 30 birr (£0.98) for 50 litres to be delivered to their house; which for low income earners it depletes 15% of their salary. And the percentage rises to 150%of their income if it delivered. As a result, many people are compelled to collect water from nearby rivers whose quality is not ascertained (WASH, 2016).

The United Nations (UNEP, 2005) asserts that the objective of sustainable water distribution and access could be achieved if the water resource management strategies governing the way people live and interact with the environment support conservation, protection and sustenance of water catchment areas. In this view sustainable water distribution and access is attributable to the sound interaction with the environment. The United Nations estimates that by the year 2030, up to 40% of the world's population shall be living in water scarce areas (UN, 2015). This view denotes that scarcity of freshwater is not likely to be addressed in the short run but there would be an ever-rising demand that would generate water resource depletion and pollution. It is observed further that with the anticipated increase in population without augmenting the water sources and the desire for better living standards, a greater strain on sustainable fresh water supply is an inevitable outcome. The reality of diminishing water resource in the society has compelled governments and states to institutionalize water regulation and distribution systems to ease universal access to all members of the society.

## **2.4 Empirical Literature Review**

Kenya is said to have a smaller portion of water resource bodies relative to its landmass (KNBS,2015). It is observed that with a total landmass equivalent to 582,646 km<sup>2</sup> only 2% or 11230 km<sup>2</sup> is composed of water bodies such as lakes and ponds that hold fresh water. These figures demonstrate that water sources are scanty in comparison to the land mass for human settlement and wildlife. In this regard, Kenya is under the category of water scarce countries. It is projected that the 500m<sup>3</sup>/year per capita that was available in 2007 could drop to 359m<sup>3</sup>/year per capita by the year 2020 (GOK, 2007), which is far below the globally recommended value of 1000m<sup>3</sup>/year per capita level (UN, 2016). According to the UN, a country is said to be under water stress when renewable water supplies goes below 1,700m<sup>3</sup> per capita per year. The population in the society is said to be in a chronic water scarcity when water supplies go below 1,000m<sup>3</sup>/year per capita and absolute scarcity below 500m<sup>3</sup>/year per capita.

Globally, Kenya is ranked as 9<sup>th</sup> in regard to population without access to safe water with an estimated figure of 17, 205, 557 in 2015. These figures indicate that more people in Kenya are vulnerable to poor health, hygiene and are exposed to food insecurity due to lack of water. The people of Kenya are estimated to spend more time and more resources to access water which makes poor households struggle to access and benefit from quality water resource in the desired quantities. The poor households that cannot access water experience higher poverty levels and their situation could be improved if the water access is made efficient and sufficient among the poor households (UN Water, 2005-2015).

Water access in Kenya is being pursued through various institutional and policy interventions. The constitution of Kenya (GOK,2010) acknowledges water as a basic human right and emphasizes the right to clean and safe water in sufficient supplies. The water regulatory institutions in the country are meant to protect and conserve water resources so as to enhance availability of good quality water to all Kenyans as a right and not a commodity for sale.

The Water Act 2002 (GOK,2002) articulates some of the institutional structures to effect quality water resource management, protection and access. The Water Act 2002 dictates that the institutional approaches towards water availability are embedded in ascertaining equity in water distribution and access, standardised design to offer the society long term sustainable access to water resource for household use and socio-economic livelihoods. The National Water Act thus sets up a platform for Kenya to initiate water sector reforms through establishment of institutions that will oversee the mandate of water access by setting up standards for water sector regulation, mitigate disputes, provide oversight among stakeholders in water sector and conserve and protect the water resources.

The Water Resource Management Authority (WRMA) is placed as the overall supervisory body for water resources management in Kenya (GOK, 2002). The WRMA is empowered to develop the guidelines and procedures for the water allocation in Kenya. In addition, it is authorised to monitor and re-assess the water resources management strategy that would ensure equity and safe utility of water. The WRMA is further mandated to determine the procedures for the issuance of permits for water use

in the country. This is conceived as a measure to ensure the water resource is regulated, protected and quality guaranteed in its distribution and use.

The Water Act 2002, purposed to achieve wider objective of quality water distribution and access through the Water Services Regulatory Board (GOK, 2002). The Water Services Regulatory Board (WASREB) is mandated to set rules and enforce standards that direct the sector towards ensuring that consumers are protected and have access to efficient, adequate, affordable and sustainable services. The WASREB therefore was thus established to regulate water services through licensing and supervision of the water services boards.

The Kenya Water Act 2002 further contemplated for the establishment of the Water Services Board (GOK,2002). A Water Services Board is responsible for issuing licences to ensure efficient and economical supply of water services under WASREB. Provision of the water services is in this context carried out through an agent categorised as a Water Services Provider (WSP). The Water Services Board (WSB) is thus empowered to acquire premises, plant, equipment and facilities to assist the water services providers with quality and sufficient water for supply to users. The Water Services Providers are the immediate stakeholders in ascertaining the water resource is supplied and consistently made available to households, institutions and enterprises.

The Water Act 2002 further provided for an establishment of the Water Services Trust Fund (WSTF) whose objective is to help in financing the supply of water services underserved areas. Funds to run the operations of the WSTF are appropriated by parliament, received from donations and grants, and payable to the institution as prescribed by any other act. The WSTF aims to support the development of

infrastructure for water distribution and access to reduce the high numbers of persons vulnerable to water shortages.

Eventually the Water Act established the Water Appeals Board (WAB) which is set to hear and determine grievances that emanate from discontent over decisions made by the WASREB on issuance of water permits (GOK, 2002). This provision guarantees communities seeking to utilize any water resource an opportunity to claim priority access and use. However, if there would be any inconsistency observed to arise from the use of the water resource then fairness in access and use could be addressed through WASREB. Therefore, the society is expected to benefit from a water resource in an environment with the oversight of the WAB.

## **2.5 Devolved Governance System**

Devolved governance is a concept that applies in a wide range of disciplines including political science, geography, public administration and organizational theory (Burns et al. 1994). Peckham et al. (2008) notes that devolution has been defined along spatial and organizational lines with regards to administrative and political decentralization. However, there is consensus among many scholars that devolution is a process of transferring authority, management and decision-making responsibilities from the central government to lower levels of local government (Mills et al., 1990; Litvack et al., 1998).

Rondinelli (1981) identifies functional and area decentralization as forms of devolution. Functional devolution refers to the transfer of power to perform specific tasks to specialized organization that operate nationally whereas area decentralization is transfer of responsibility to organizations within well-defined political boundaries such

as districts to perform functions strictly within their boundaries. Devolution is the creation of autonomous and independent units of government with clear and legal boundaries within which they exercise power and perform duties. He further adds that devolution is the absolute form of decentralization and is regarded as unique from decentralization because of its autonomy in the structure of the government. Moreover, countries like Kenya, utilize two degrees of decentralization; delegation and devolution (Mills et al., 1990).

According to Mills (1990), devolution in most developing countries was notable in the 1970s (Mills et al, 1990). This was attributed to the fact that some countries were not happy with the overcentralized development planning while others, saw it as a way of marshalling support for national development plans by creating awareness at local level while others regarded devolution a means to bring about equity in the allocation of government resources (Rondinelli & Nellis, 1986). Ultimately, scholars argue that decentralization was engineered by development partners (Regmi et al., 2010) who introduced structural adjustment policies meant to steer growth for sustainable development (World Bank, 2004).

Homedes and Ugalde (2005) argue that decentralisation has not contributed much to service delivery because the policies do not pay attention to the prevailing situation of the state. Moreover, most of the African countries embraced these policies without considering their challenges (Mutizwa-Mangiza, 2000). According to Rondinelli (1981), these challenges often lead to issues of noncommitment from the central government which is normally unwilling to fully devolve functions that give them a foundation for political and financial stability. Lastly, devolution in public service

would be an occasion of inequalities as some regions that seek to sustain water services have a noticeably small revenue base that can't sustain their operations (Litvack et al., 1998).

## **2.6 Conclusion**

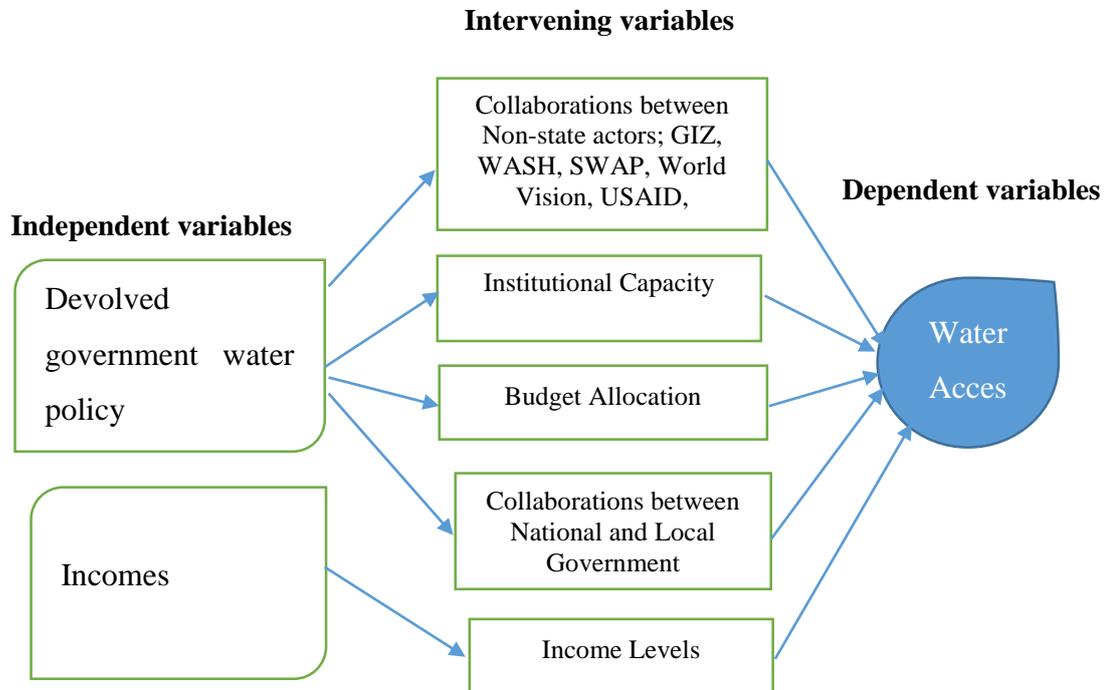
From the above literature review, it appears that devolution is well intended in its operation but it has not yielded the benefits desired in the society. It is important to note that devolution if implemented in the correct pace, it might achieve the desired goals set out in water policy documents. While the literature review has highlighted the foundational objectives of devolution, water access elements in the rural households has not been evaluated to determine if there is a correlation between the devolved governance and water accessibility. This presents the main gap for this study to undertake.

The literature on Kenya demonstrates that the devolved governance structures in the country are still in the infancy stage. As a result, there are significant policy, structural and operational challenges that undermine effective provision of water to rural households. However, there are also progressive measures such as development of county specific policies and institutions on water.

## **2.7 Conceptual Framework**

A conceptual framework lays out the structure of the entire study depending on the literature review and the researcher's beliefs. Miles and Huberman (1994) and Robson (2011), describe the conceptual framework as a graphical or a narrative depiction of the entire study. The key elements in a conceptual framework are variables and the postulated relationship among them.

**Figure 2.1: Conceptual Framework Depicting Factors Determining Water Accessibility to Rural Population**



**(Source: Researcher's conceptualisation)**

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 Introduction**

This section of the study describes the research design, the target population, methods of sampling, data collection procedure, and analysis of data.

#### **3.2 Research Design**

According to Saunders (2007), the research design is the broad guideline of how the researcher conducts the study (Saunders et al., 2007). A case study design was used to illustrate the effect of devolved governance system on water access for sustainable rural development. The suitability of a case study is that it involved a complete observation of a social unit with emphasizes in depth the analysis (Robson, 2002).

Moreover, the case study met the needs of qualitative research to; describe, understand, and explain (Yin, 1994). According to Gray (2004), the case study method was appropriate in cases when a ‘how’ or ‘why’ question was being asked about a current situation over which the researcher had no control.

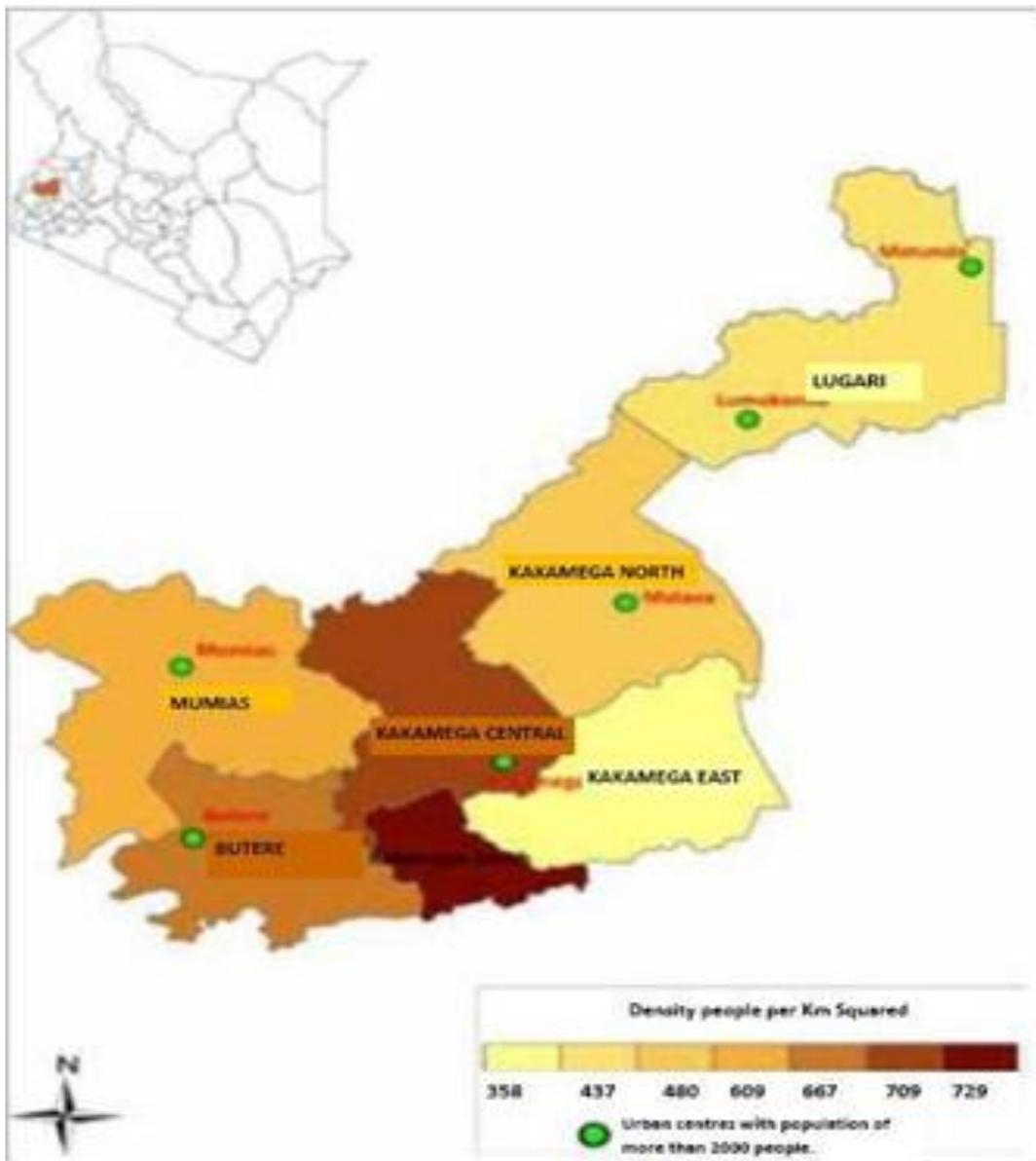
#### **3.3 Study Site**

This study was undertaken in Kakamega County, Shinyalu Constituency specifically in Isukha South Ward and Isukha East. Kakamega County is one of the 47 counties with a population of 1,812,320 people. The county is subdivided into 9 constituencies (County Statistics, 2015), namely, Lurambi, Ikolomani, Khwisero, Matungu, Butere, Mumias, Malava, Lugari and Shinyalu Constituencies. The county covers an area of 3,051.2 km squared. Kakamega County lies in the Western part of Kenya and enjoys a tropical rainforest climate with an annual rainfall range between 2212.1mm and

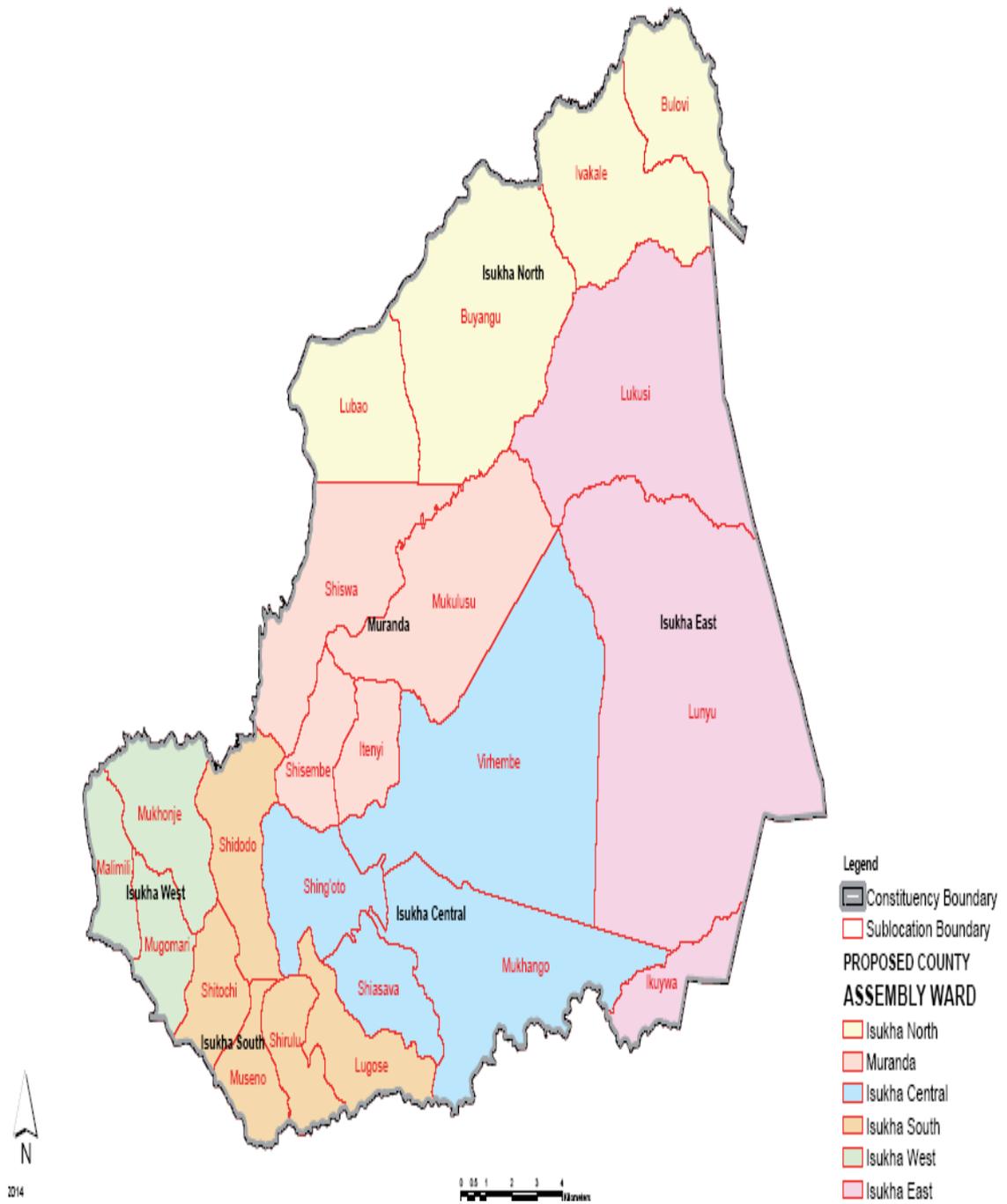
1280.1mm per year (Kakamega County Development Profile, 2013). The County has high amounts of precipitation that qualifies it as a water catchment area. Farmers in Kakamega county mainly grow; maize, beans, sorghum and finger millet. Kakamega County has a natural forest covering parts of Shinyalu and Lurhambi Constituencies. The gazetted natural forest covers an approximate area of 188.7km squared. While the non-gazetted forest occupy an approximate area of 26.5km squared (Kakamega County Development Profile, 2013).

The main two Rivers are Yala and Isiukhu, with several streams and springs. However, Kakamega County is one of the counties experiencing unequal access to clean water. These challenges are mostly attributed to an increasing rate of population, lack of protection of water catchment resources, underdeveloped water infrastructure and poor adoption of appropriate water facilities (Devolution Hub, 2015-2019). According to KNBS & SID (2013) only 61% of the residents in Kakamega County have access to improved water sources, while the rest rely on unimproved water sources. Mumias West constituency is ranked at 78%, with the highest residents using improved water sources, while Shinyalu Constituency has the lowest number of residents with access to improved water sources (KNBS & SID, 2013). Shinyalu constituency is made up of 6 Wards namely; Isukha Central, Isukha East, Isukha South, Isukha North, Isukha West and Muranda (figure 1) with a population of 159,475 (Fact Sheet, 2011). The six wards are further sub divided into 23 sub locations whose residents depend on streams, rivers, boreholes, wells, piped water and the rain water for their domestic and agricultural activities.

Figure 3.1: Kakamega County Map



**Figure 3.2: Shinyalu Constituency Map**



**Source. Internet [www.googlemaps.com](http://www.googlemaps.com).**

### 3.4 Target Population

Mugenda & Mugenda, (2003) describes the population as an aggregate of all that conform to a given characteristic. Unit of Analysis was rural households in Shinyalu Constituency, those with improved water sources and those with unimproved water sources for domestic use. Thus, the research focused on devolved structures of water governance and the household water accessibility. The aim was to provide insights into the role of devolution in water provision.

**Table 3.1: The Distribution of the Population of Study**

<b>County Ward</b>	<b>Sub-locations</b>	<b>Approximate Ward population</b>	<b>Area in Sq. Km</b>
Isukha South	Shitochi, Museno, Shirulu, Lugose, Shidodo	<b>35,807</b>	<b>38.30</b>
Isukha West	Mukhonje, Malimili, Mugomari	<b>19,412</b>	<b>23.60</b>
Isukha Central	Shing'oto, Mukhango, Shiasava, Virhembe	<b>34,545</b>	<b>42.70</b>
Isukha East	Kakamega Forest, Lunyu, Lukusi Ikuywa	<b>17,930</b>	<b>262.60</b>
Muranda	Mukulusu, Shisembe, Shiswa, Itenyi	<b>28,285</b>	<b>36.00</b>
Isukha North	Lubao, Bulovi, Buyangu, Ivakale	<b>23,496</b>	<b>42.20</b>

Source: Kakamega County Government Development Plan (2015)

### 3.5 Sampling Design

This research adopted purposive sampling for both the Key Informants (KI) and the rural households. Purposive sampling was used to identify the Key Informants in a stratum across the various sections of the Water Services department in Kakamega

County. To get a representative sample, the population was separated into strata. (Saunders et al., 2007).

It is now six years since devolution took off therefore, the researcher interviewed Key Informants (KI) to provide not only the background history on water sources and provision, but also give an insight into the current situation of water supply, the water policy and strategic plans in place that facilitate water provision under the devolved government system. They further provided information on the various water initiatives, programmes and projects in place that facilitated water demand and supply. They also responded to the issue of budget allocation, water funds and amount released to partners and institutions in relation to water provision.

The KIs consisted of; (1) Water Executive officer, Kakamega County, (1) Chief Financial Officer, Kakamega County Office, (3) Water Services Board, (1) WRA, (1) Lake Victoria North Catchment Area, (2) KAWASCO- CFO & Technical officer, (2) LVWSB -CEO & Technical officer, (1) GIZ Endev Programme Kakamega office, (1) Safe Water and Sustainable Hygiene Initiative (SAWASHI), (1) USAID, (1) Ward Administrator, (1) MCA, (1) Woman Representative Kakamega county and (1) Chairlady of Maendeleo Ya Wanawake. A total of 18 KIs.

The researcher gathered information from two FGDs each with 10 members, one group from Shitochi and another group from Ikuywa Sub-location to find out the history of water demand and supply in these sublocations and the sources of water for domestic use. Shitochi sublocation receives water from two sources i.e. Isiukhu River and River Yala, and also its home to one of the major shopping centres thus was assumed to be highly populated. For the composition of the FGDs, the researcher selected

leaders/members/employees of Saccos, International, local NGOs and CBOs and religious leaders. Other members of the FGDs were drawn from water vendors, and community members with water projects making a total of 20 respondents. The first category of participants was either staff of the water services sectors while others directly or indirectly supported the provision of water to rural population and therefore had a relatively sufficient knowledge for this study. The second category involved participants who were working directly with water, but also consumers and therefore were affected by the dynamics within the water sector.

The third category were key stakeholders from the rural households of Shitochi and Ikuywa sub-locations. The researcher used purposive sampling and snowballing to deliberately select the respondents. Snowballing is a non-probability sampling method that helped the researcher to ask for leads to households using water from particular water sources. The use of snowballing was relevant to help identify other respondents that were not identified at the onset of the study.

Shitochi Sub location is a densely populated area compared to the other sub locations in Isukha South. The offices for the Ward Administrator, the MCA and LVNWSB are located at Khayega Market thus giving the researcher an opportunity to observe any effort from these offices with regards to water supply. Ikuywa sub-location has a wide forest cover with two major rivers Isiukhu and Yala and their tributaries so it was assumed that the households depend on streams.

The study targeted 75 households; 40 households from Shitochi and 35 households from Ikuywa. For the household survey, factors considered for the interview included homesteads with corrugated iron sheets that harvest rain water, households who get

water from water pipes, households fetching water from boreholes, rivers, streams and those who buy from vendors.

### **3.6 Data Collection Methods and Instruments**

#### **3.6.1 Data Collection Methods**

This research used the following data collection methods: Interviews, Observation, Telephone and review of published literature on water access.

#### **3.6.2 Research Instrument**

To collect primary data, the researcher used questionnaires and focused group discussions. The questionnaires contained open-ended questions (Bryman, 2008). Although the open-ended questions have a disadvantage of generating voluminous information, the advantages of adopting them in this study seemed to outlay the disadvantages. The open-ended questions allowed the informant/respondent to freely express themselves without the limitations of closed ended questions. They allowed the respondent to talk about issues that maybe not have been anticipated in the closed ended questionnaires.

The questionnaires were structured to ensure that each objective of the study was sufficiently addressed (Mugenda & Mugenda, 2003). The questionnaire method according to Kothari (2004) is free from influence from the researcher and also makes it easy to get in touch with other respondents who were not available at the time scheduled interviews.

Interviews on the other hand are considered a purposeful discussion between two or more people (Creswell, 1994). Interviews can be structured, semi structured or unstructured. For the purpose of this study, structured questionnaires were used to collect information from key informants. According to Heritage (1984), its advantageous to record and transcribe interviews because it gives room for thorough examination of what people say (Bryman, 2012).

Focused group discussions are basically group interviews of at least four participants in addition to the moderator or facilitator (Morgan,1998). Socio-demographic factors such age, class, gender, income levels do influence the stratification of focused groups. The researcher also considered opinion leaders as from women groups as key informants since women are the prime users of water and are most vulnerable to water disasters (Women & Water, 2005). However, some of them were included in the focused group discussions Morgan (1998) suggests the selection of fewer numbers of groups especially when participants have a lot to say on the chosen topic and are emotionally invested. Also, in agreement with Morgan is Peek & Fothergill (2009), who argues that focus groups with 3-5 participants run more smoothly than the large groups they conducted.

### **3.7 Data Collection Procedure**

This research sought to gather both primary and secondary data from the field. Households survey, key informants, and focused group discussions were used to collect primary data. A harmonious relationship was created between the researcher and the respondents. The researcher ensured personal distribution of the questionnaire that resulted to higher return rate. Regarding observation, the researcher being a native of

the Kakamega County scheduled time to be in the selected sub-locations to observe how the devolved governance has advanced water infrastructure for water access.

Annual reports and policy documents were relevant sources of secondary data. The researcher reviewed relevant annual reports and policy documents from the Department of Water Services in Kakamega County and also from the Central Government in Nairobi.

**Table 3.2: Data Needs Table**

Research Questions	Data Needed	Source(s)	Instrument(s)
1) What is the devolved government policy on water provision in the county?	Background History of water Policies-formal and informal Other policies are in place related to water provision Relevance and suitability of the water policy for water supply Challenges and opportunities of the water policy	Key Informants  Policy Papers  Official Pronouncements	Questionnaires  Interviews  Secondary data
2) What is the devolved government system for water services in Kakamega County?	Structure of the devolved government system for water services in Kakamega County The relationship between the County Water Services, the Headquarters in Nairobi and the Wards. Laid down procedures for water availability, supply, demand	Key Informants  Documents  Official Pronouncements	Questionnaires  Interviews  Secondary data
3) What are the devolved government initiatives geared towards sustainable water provision and accessibility?	Source of funds NGO Contribution Relevance of these initiatives to water access. Number of water initiatives in each constituency Challenges and opportunities of these initiatives The role of devolution in water access in Kakamega county	Key Informants FGD Survey Respondents	Questionnaires Interviews

### **3.8 Scoping**

The researcher made a reconnaissance visit to Kakamega County offices and specifically visited the Shitochi and Ikuywa Sub-locations. The visit was important because of familiarization of the study site. It allowed the researcher to acquaint herself with some of the respondents and overall planning of the research. A comparatively small sample size was taken from the population through purposive sampling. The sample was derived from the relevant County Water Services bodies including WARMA, WASREB, LVNWSB, LVNCA, KACWASCO, Non-State Organizations- GIZ, WASH, World Vision, etc Administration and rural households. Which enhanced the validity and reliability of the questionnaires where necessary adjustments were made before the actual study.

#### **3.8.1 Validity**

According to Babbie (2002) validity is the extent that a particular measurement gives data relating to the widely recognized meaning of a certain concept. Gall, et al., (1996) adds that specialists in content matter assist in establishing validity. The supervisor reviewed the researchers' questionnaires and a pilot study was conducted to enhance validity of the instruments.

#### **3.8.2 Reliability**

Reliability as described by Gay, (1992) is a measure of degree where a specific measuring procedure produces same results or data after a repeated trial. The researchers used Test-Retest Method that involved the administration of the same measure to the same group of respondents at two separate times.

### **3.9 Data Processing and Analysis**

The study collected mixed data. Quantitative data was analysed using the Statistical Package for the Social Science (SPSS). The software was efficient and effective in cleaning, coding and data entry. The results were computed to produce percentages, frequencies, measures of central tendency (mean, mode, medium) and standard deviation for efficient interpretation. Bell, (1993) argues that percentages are easy to fathom thus giving them an edge over other complex statistics. The data was then presented in forms of pie charts, frequency tables and percentage graphs. Qualitative analysis was sorted and analysed using content analysis method of research that systematically analyses content of verbal or pictorial nature. This type of analysis was applicable and relevant whenever there was qualitative data to explain the prevailing social status. Thematic approach was also be used where specific themes were identified and the data analysed based on themes.

### **3.10 Ethical Considerations**

To make this process formal, the researcher acquired a letter of introduction from the Director of the Institute of Development Studies which was presented to all the offices of interest to the study. However, a letter from National Commission for Science, Technology and Innovation (NACOSTI) was not a primary requirement. According to Saunders, it is proper for the researcher to make herself familiar with the respondents by explaining the reason for the research before administering questionnaires (Saunders et al., 2007). Appointments were sought by the researcher prior to visiting the Kakamega County Water Services Department. Confidentiality of the respondents was assured too during the process of gathering information by emphasizing the nature of research and its use in academic reference.

## CHAPTER FOUR

### WATER ACCESS FOR SUSTAINABLE RURAL DEVELOPMENT UNDER DEVOLVED GOVERNMENT SYSTEM IN KAKAMEGA COUNTY

#### 4.1 Introduction

This chapter presents the findings and discussions from analysis of primary data. It is organised as follows: a presentation of descriptive results of household characteristics, the results of issues on water provision, access and availability.

#### 4.2 Household Characteristics

The study was conducted in Isukha South and East Ward. Table 4.1 presents the descriptive results of the household characteristics.

**Table 4.1: Summary of Descriptive Results on Household Characteristics**

Item/Variable	Shitochi		Ikuywa		All	
	Frequency	%	Frequency	%	Frequency	%
<b>Head of household?</b>						
Head of household	27	60%	13	43%	40	53%
Spouse of head of household	18	40%	17	57%	35	47%
<b>Gender</b>						
Male	23	51%	14	47%	37	49%
Female	22	49%	16	53%	38	51%
<b>Education</b>						
No formal education	11	24%	2	7%	13	17%
Primary	13	29%	13	43%	26	35%
Secondary	16	36%	11	37%	27	36%
Post-secondary	5	11%	4	13%	9	12%
<b>Occupation</b>						
Farming	13	29%	8	27%	21	28%
Business	15	33%	13	43%	28	37%
Employment	3	7%	5	17%	8	11%
None	14	31%	4	13%	18	24%

Table 1 shows that the respondents came from two sub-locations of Shitochi and Ikuywa. The number of members in a household averaged five people and monthly

incomes an average of Ksh. 6,117. Three out of five respondents were from Shitochi and they were almost equally split in terms of gender. On educational attainment, about 2 in 10 respondents had no formal education, about 3 in 10 people had primary education and just about 4 in 10 had secondary education. Further, only about 1 in 10 respondents had post-secondary education. The results also show that more than half of the respondents were household heads. About 3 in 10 respondents were farmers, about 4 in 10 were business entrepreneurs and 1 in 10 were in employment. The main economic activity in Shitochi sub-location is subsistence farming. The main crops being cultivated include; maize, beans that is grown on acreages between 1 and 5 acres.

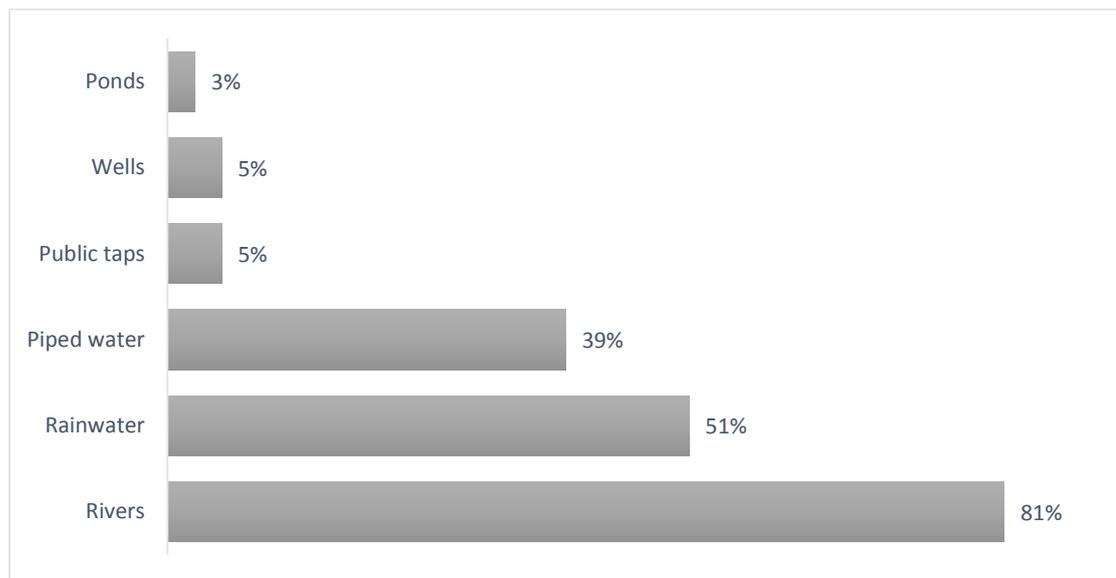
There are household members of the One Acre Fund social enterprise that help improve farm production by providing the households with agricultural training and assets hence translating to improved income levels for the households. Some of the households are currently practicing vegetable farming especially *sukuma wiki* and *kunde*.

Most of the households sell their farm produce at the local Khayega market to vendors while others have stalls for business at the market. Some of households keep domestic animals and practice poultry keeping for income by selling milk and eggs respectively. Households in Ikuywa sub-location practice large scale farming of vegetables, onions, maize, and major cash crops like tea and are traders in Chepsonoi and Mosop in Nandi County and even suppliers at Khayega Market. This was attributed to the presence of large farms and availability of water that was easily accessed from the rivers. Households in Ikuywa mostly get their water from rivers and rain harvesting and used it both for domestic and irrigation unlike in Shitochi where water was mainly for domestic purposes.

Business owners are majorly shop retailers of basic household items, butcheries, and greengrocers. The rate of wage employment is low in that the respondents in that category were either working as security guards, primary school teachers, social workers, and cart pushers. Lastly, some of the households with extended families depended entirely on other family members for support.

### 4.3 Sources of Water

The respondents were asked to state their sources of water. One was allowed to state more than one source. This was, therefore, a multiple response question. Figure 4.1 shows the results of multiple response analysis.



**Figure 4.1: Sources of Water**

The study found that most of the respondents used water from the rivers around them. Specifically, the results showed that 2 in 5 residents depended on the rivers as a source of water while 5 in 10 depended on the rainwater. Further, about 2 in 5 people depended on piped water. The high dependence on natural sources of water such as rivers and rain attributed to a lack of improved safe water sources in the area. Public tap is water

strategically located for accessibility of the residents. The water is purchased at a fee of between Ksh.10-50 20 litres per jerrycan. Pipe water in this study refers to the billing of homesteads/individuals at end of every month.

Findings from the research indicated that one of the main rivers found in Kakamega County is the Yala river, which has its origin from Nandi Hills, it flows westward through Kakamega forest. Shitiya, Kabkalet and Nurungo are some of the streams formed from the Nandi Escarpment. River Isiukhu is the main source of water supply in Kakamega County. There are two intakes one of which was constructed in 1956 and the other in 1992. However, both intakes are run down. Presently, the residents from Ikuywa get their water mainly from River Yala while those from Shitochi are served by water from both River Yala and Isiukhu.

The findings from the study showed previous piping done by KEFINCO (Kenya Finland Company) was more effective and efficient in the supply of water in Shitochi. In Ikuywa, the uptake of piped water is a recent development in the aftermath of the collapse of KEFINCO. In the early 1980s, FINNIDA a Finland development agency donated handpumps for the Rural Water Supply Development Project in Western Province. KEFINCO was a better water project that managed the installation of pipes and supply of water in various locations of Kakamega. The project had raised hopes of the Kakamega people to have access to clean and sufficient water in their homesteads.

However, due to poor governance on the side of the Government, KEFINCO collapsed. Currently, KACWASCO is the public limited company responsible in ensuring the supply and provision of water and sanitation services in various parts of Kakamega County. KACWASCO took over from LVNWSB after water became a devolved

function. The number of households with piped water is low at 39% because of the high costs incurred in getting this water. From high connectivity charges to high monthly bills. Some of the households complained that their taps are usually dry, and only get water twice in a week, which is normally during the first and the last week of the month that is followed up with a huge bill that they never understand how it is calculated. For those reasons most households prefer to collect rain water or get water from the rivers.

#### 4.4 Uses of Water

The respondents were asked to state how they used water. The descriptive results of the analysis are presented in Table 4.2.

**Table 4.2: Uses of Water**

Use of water	Shitochi		Ikuywa		All	
	Frequency	%	Frequency	%	Frequency	%
Domestic use	41	91%	30	100%	71	94%
Animal use	1	2%	4	13%	5	7%
Irrigation (crops)	7	0%	7	23%	14	19%

The study found that all the respondents use water for domestic purposes such as cooking, washing clothes and utensils, bathing, among other domestic uses. Further, just a small number of respondents used the water for animals (7 percent) or for irrigation in their farms (9 percent). This reveals that the residents have not taken up large-scale water use for agricultural production but use the water mostly for domestic purposes. This can further be explained by the abundance of rainfall in the area.

#### 4.5 Length of Use of Water Source

The respondents were asked how long they had accessed water from various sources. Table 4.3 is a presentation of the results of the analysis.

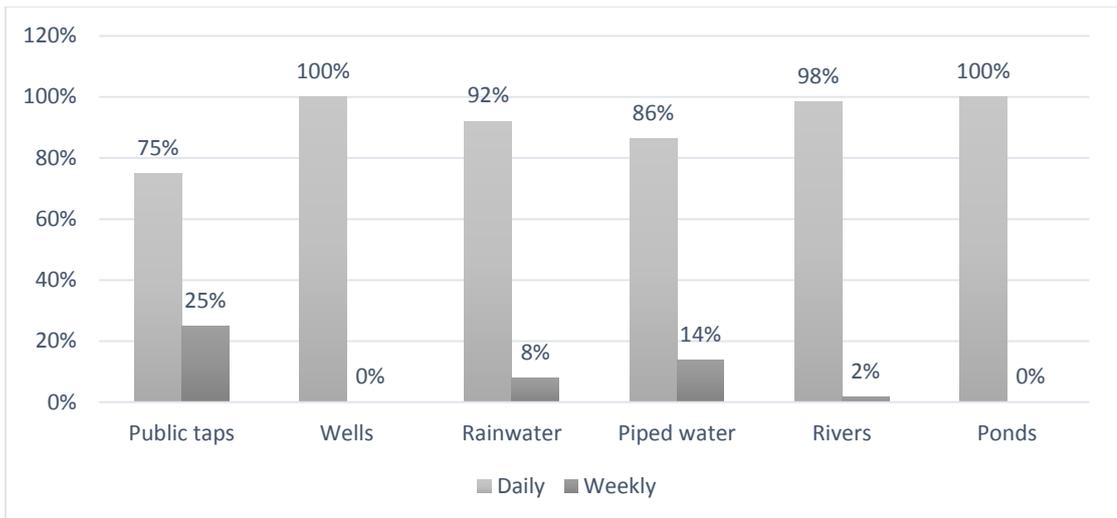
**Table 4.3: Length of Time the Residents had Accessed Water Sources**

<b>Period</b>	<b>Shitochi (%)</b>	<b>Ikuywa (%)</b>	<b>Total (%)</b>
1-3 years	8.9	46.7	24
3-5 years	4.4	13.3	8
5 years and more	86.7	40	68
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>

Table 4.3 shows that most of the respondents had accessed the water sources for a long period of time as about 7 in 10 people had accessed the water source for over 5 years while just about 1 in 5 had accessed the water for a period of 1 to 3 years. Given that the study site was a rural area, most of the residents had stayed in those areas since birth and that explains the longer period of access to the various water sources especially rivers. In addition, the use of piped water in Shitochi is traced back to 1980s at the time of KEFINCO, while in Ikuywa it is a recent project from 2012.

#### **4.6 Frequency of Water Access**

The respondents were also asked to state how regularly they accessed the water. The results of this analysis are shown in Figure 4.2. The presentation is done in terms of a cross tabulation between source of water and the frequency of access in order to capture the frequency of access of each of the sources of water.



**Figure 4.2: Frequency of Water Access by Sources**

Figure 4.2 shows the frequency of use of various water access by sources, the study showed that 93 percent of the respondents used the water sources daily while 7 percent did so weekly. For those who accessed water through the wells or ponds, they all did so on a daily basis. Of those who accessed the public taps, 75 percent did so daily while 25% did so weekly. There are 2 categories of households in Ikuywa and Shitochi that harvest rain water; the first category has water tanks with large storage that enable them to access water on a daily. The second category has small storage facilities that include jerrycans that limit water accessibility on daily basis. Furthermore, 86 percent of those who accessed piped water did so daily while the rest accessed it weekly. Almost all of the people that accessed river water did so daily basis. For 48 percent of the respondents, the frequency of access to water sources were replicated even in dry seasons but not so for 52 percent of the respondents.

#### 4.7 Storage Facilities

The respondents were asked to state whether they had storage facilities for water. The respondents could state more than one storage facility as people always have multiple storages. Table 4.4 presents the results.

**Table 4.4: Type of Water Storage Facilities**

Type of storage	Shitochi		Ikuywa		All	
	Frequency	%	Frequency	%	Frequency	%
Jerrycans	14	33	8	53%	22	29%
Tanks	13	30	8	53%	21	28%
Pots	19	44	4	27%	23	31%
Plastic containers	24	56	2	13%	26	35%

The study found that 4 in 5 respondents had water storage facilities. The most common storages were plastic containers (35 percent), followed by the pots (31 percent), jerrycans (29 percent) and tanks (28 percent). The tanks came in all forms including plastic, cement and metal tanks. The survey showed that most of the households are not well equipped with water storage facilities to enable them avoid frequenting water sources. This is because some households could not afford to buy the kinds of storage facilities like tanks that could enable them store large amounts of water for a long period of time.

#### 4.8 Water Expenditures

For the respondents with piped water, the study was interested in understanding monthly water bills. The results of the analysis are presented in Table 4.5.

**Table 4.5: Monthly Water Bill for the Respondents with Piped Water**

Monthly water bill (Shillings)	Shitochi		Ikuywa		All	
	Frequency	%	Frequency	%	Frequency	%
100 – 500	2	20%	14	64%	16	50%
501 - 1,000	0	0%	7	32%	7	22%
1,001 - 1,500	4	40%	0	0%	4	13%
Above 1,500	4	40%	1	5%	5	16%
<b>Total</b>	<b>10</b>	<b>100%</b>	<b>22</b>	<b>100%</b>	<b>32</b>	<b>100%</b>

Generally, in terms of the monthly expenditure on water, the study found that half of the respondents from the two sublocations, spent between Ksh 100 and Ksh 500, and about 1 in 5 spent between Ksh 501 and Ksh 1000. For about 7 in 10 residents, 20 litres of water cost them 20 to 50 shillings while for the rest, it cost them below 20 shillings. Given that the general use of water was for domestic purposes, the results on monthly expenditures reflect the same in terms of the large number of people paying less than Sh. 1,000 per month.

#### **4.9 Water Initiatives**

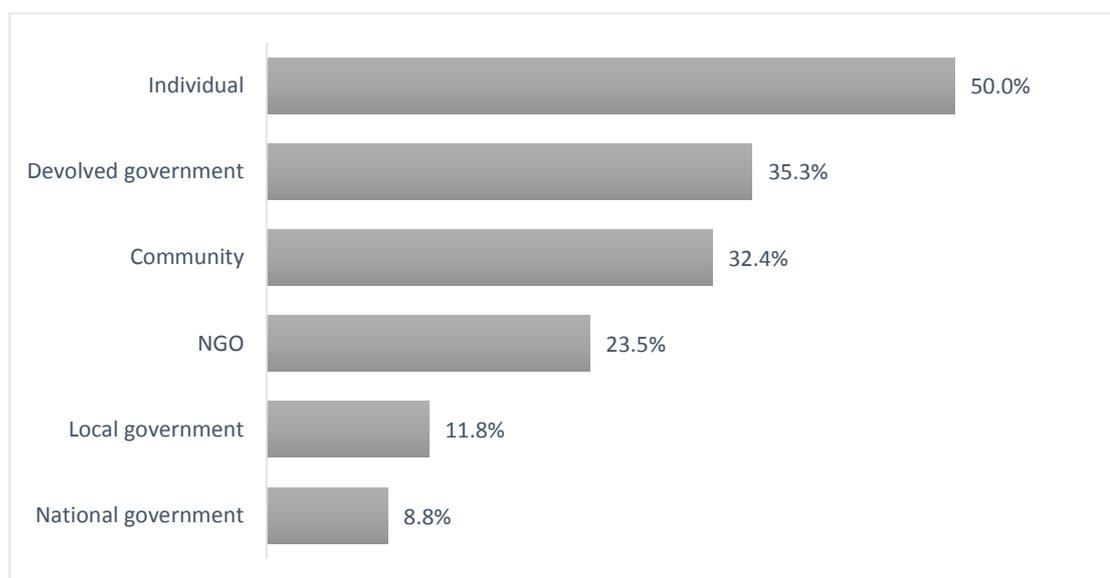
The study sought to understand water initiatives, programs or projects in the study site. The respondents were therefore asked to state whether there were any water initiatives, programs or projects in their areas. The study found that more than half of the respondents agreed that there were water initiatives in their areas. For the respondents that agreed that there were water initiatives, programs and projects in their areas, they were further asked to state which specific initiatives they were. The respondents were allowed to state whether there was more than one initiative hence this was a multiple response question. Table 4.6 shows the results of the analysis. The water initiatives

available were mostly developed rivers and piped water as noted by 53 percent and 44 percent of the respondents respectively which means that most initiatives were biased towards developing rivers sources for water access.

**Table 4.6: Water Initiatives in the Areas Where Respondents Live**

Water initiatives	Shitochi		Ikuywa		All	
	Frequency	%	Frequency	%	Frequency	%
Boreholes	7	37%	1	8%	8	26%
Hand pumps	2	11%	0	0%	2	7%
Developed rivers	4	21%	11	92%	15	48%
Piped water	6	32%	8	67%	14	45%

The respondents were further asked to state the initiators of the water projects. Again, a respondent could state more than one initiator given that multiple sponsors could initiate water projects in the area. Figure 4.4 shows the results.



**Figure 4.3: Sponsors of Water Projects in the Study Areas**

The results show that half of the respondents noted that the water projects in their areas were initiated by individuals. The results also show that about 2 in 5 people mentioned that the county government had initiated some water projects in their area and about one third of the respondents mentioned that some of the water projects were community efforts. The results further show that about 2 in 10 people mentioned NGOs as being sponsors of some water projects while just about 1 in 10 people mentioned former local authorities as being initiators of some projects. As the results show, the water initiatives in the area were mostly spearheaded by individuals in homes.

From Figure 4.4 the county government comes second in sponsoring water accessibility projects in the study area at 35.3% which is below the average. However, while this is the case, it is important to note that most of these projects by the national government or NGOs were in collaboration with the county government. The collaboration is terms of co-financing, and technical expertise.

Key Informants were asked what specific programmes and projects were in place to facilitate water accessibility to rural households in Kakamega County. The Water Services Provision Officer at LVNWSB, stated that a number of projects were under feasibility study and design stage. While there is none in the study area under feasibility and design, overall in Kakamega County there are the Kakamega-Bungoma Bulk Water Supply Project and Malava Water Supply Project. He added that a number of water supply projects currently being implemented included; the Kipkaren-Lumakanda Water Supply Project and Moi's Bridge -Matunda Water Supply Project.

The Director of Water Resources, explained that the Water Sector Trust Fund (WSTF), a semi-autonomous institution of the Ministry of Water, was established to fund the under-served areas with respect to water and sanitation. In this regard, CBOs, were encouraged to make proposals to WSTF for supporting water and sanitation projects in the rural areas.

#### 4.10 Devolution and Water Provision

The study was also interested in understanding whether the respondents were aware of devolution and whether it was working to ensure sufficient water supply for rural development. Table 4.7 presents the results of this issue.

**Table 4.7: Awareness of Devolution and Whether it is Functioning to Provide Water**

Devolution	Shitochi		Ikuywa		All	
	Frequenc y	%	Frequenc y	%	Frequenc y	%
<i>Have you heard about devolution?</i>						
Heard about it	42	93%	27	90%	69	92%
Not heard about it	3	7%	3	10%	6	8%
<i>Is devolution working to provide water?</i>						
Working	6	13%	12	40%	18	24%
Not working	39	87%	18	60%	57	76%

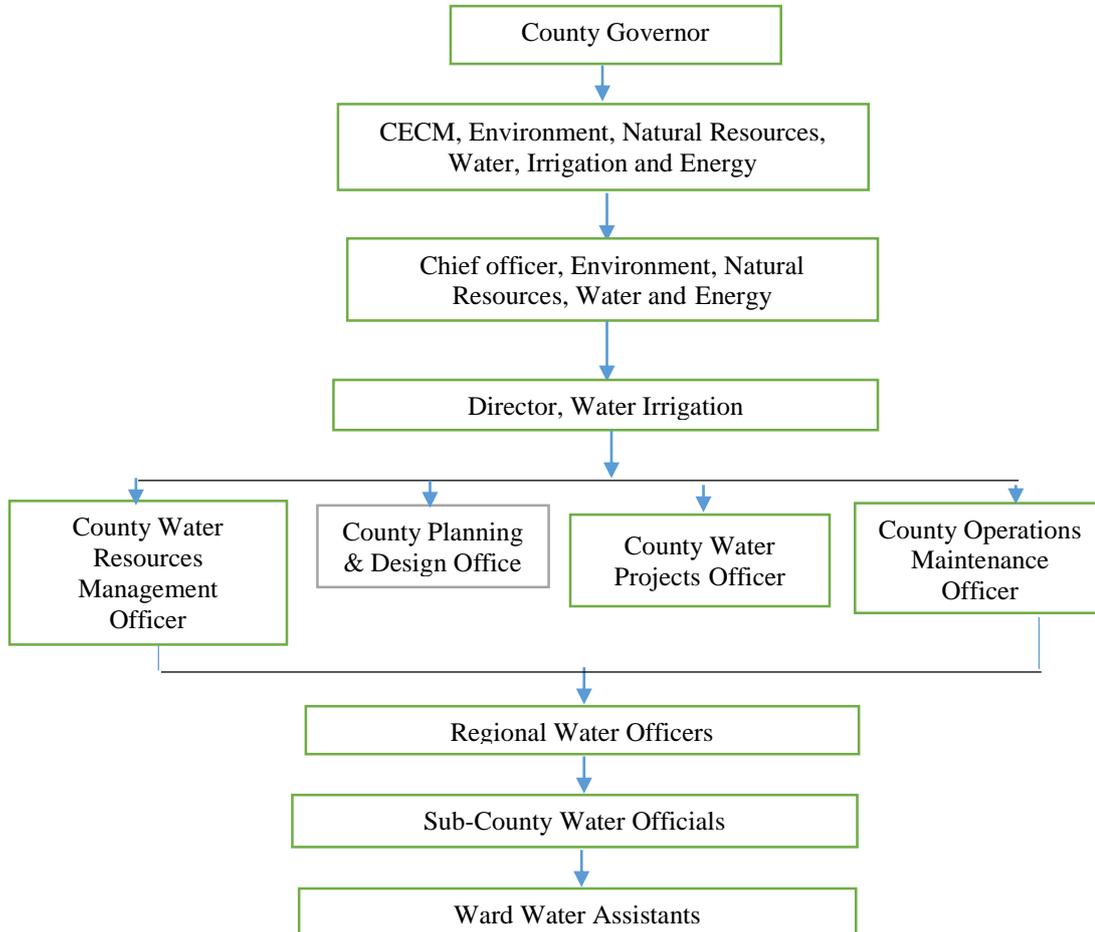
The results showed that over 9 in 10 people had heard about devolution. Most of the people associated devolution with the provision of mosquito nets to curb the spread of malaria in the area. Whether devolution was working in terms of providing water, the results showed that about 7 in 10 people felt that devolution has not adequately addressed the question of water accessibility for rural development. This can be partly

attributed to the fact that the water projects in the area are mainly associated with individuals and not the county government. Despite of the results indicating that there are significant water sources in Kakamega County, accessibility and supply is undermined by poor road network, damaged and sometimes unhygienic environment.

The National Government is developing more than 40mega dams throughout the country and once done, they are handed over to WSPs for the government initiative, dubbed 'last mile connection' to facilitate water connectivity to rural households. KACWASCO is an entity of the County Government, and by law they can borrow money for expanding water and sanitation services, however, the County Government must support the WSPs initially for them to be sustainable enough before approaching development partners. An example was given of the Nyeri Water and Sanitation Company that has already borrowed and repaid its loan that was used to expand their water system. Additionally, WSPs should be efficient and reduce on Non-Revenue Water, which at the moment is said to be at an average of 50% which translates to a loss of 50% of revenue that should be used to sustain and expand water and sanitation services.

#### 4.11 The Devolved Government System structure on Water Provision in Kakamega County

The Water Department Organogram shows that the office of the governor has the final decision maker on issues of water kakamega county.



The decision-making process can be broadly divided into three tiers namely; the lower, middle and upper tier. The lower tier consists of ward water assistants, sub-county officials and regional water officers whose main function is administrative in nature. The middle tier which is the technical part consists of county water resources management officers, planning & design office, water projects office and operations maintenance officers with multiple functions relating to management, planning and

design and maintenance. The Upper tier consists of the director water irrigation, executive office on environment, natural resources, water irrigation and energy which seem to suggest that it is the policy making organ on water issues.

Water is a devolved function therefore the county government is mandated by the national government to ensure water services in the county. The county policy frameworks and institutions are informed by the national government. A significant number of the staff were employees of the central government in the Ministry of Water.

According to the key informants interviewed, water management in Kakamega county is done in four levels; Community, Town, County and National Levels. For sustainable and reliable supply of water, there is need for technical expertise and human resource hence the incorporation of both public and private sector personnel to ensure service delivery. Water Resource user Association (WRUAs) and Water Consumer Groups (WCGs) were established to enhance awareness and participation to resolve water conflicts. However, not all users have their water grievances addressed.

#### **4.12 Water Policies in Kakamega County**

The study also sought to find out what water policies exist in Kakamega County. The study found that there is a mix of both local level water policies enacted by the county government and national water policies enacted and implemented by the national government. The Integrated County Government Development Plan (CIDP) provides for strategies to increase water availability within the county. The National Government is developing the National Water Policy to align with the COK 2010 as well as the Water Act of 2016. Meanwhile, the National Water Policy of 1999 is still applicable and relevant since it was the framework used to decentralize water and sanitation

services. The Water Act 2002 was instrumental in creating Water Services Boards and Water Service Providers. Besides the above frameworks, other policies on water include the strategic plans of various water governing bodies, the Kakamega County Water Bill and the SDG 6. This means presently, water provision by the county government is informed by a combination of national and county government policies some of which are still being developed.

#### **4.12.1 Water Act 2016 and the Kenya Water Policy 2012**

The National Water Act of 2016 and the Kenya Water Policy are the dominant national level water policies in the county. They have facilitated the incorporation of the Kakamega County government in the management of water resources. The water act is relevant in understanding water access in the context of devolution since it provides for the decentralization of water resources management through the creation of Water Services Providers (WSPs). Water Act of 2016 has provided an institutional framework to enhance local level participation in management of water resources (WIN, 2017).

The study also found that the Kenya Water Policy 2012 has been implemented by the national government as part of a broader effort to enhance water supply in the county. The policy has led to the establishment of a number of water supply schemes in the county including the Kakamega Water Supply Scheme, the Mumias Water Supply Scheme, the Shitoli Water Supply Scheme, the Tindinyo Water Supply Scheme, and the Butere Water Supply Scheme. For instance, the Tindinyo Water Supply Scheme provides water for the two sublocations All these five schemes are under the management of the national government. The national government has however started to hand over the management of some of these schemes to the county government after

the enactment of the Water Act 2016. For instance, the Malava Water Supply Scheme, Lumakanda Water Supply, and Soi Water Supply which were originally managed by the national government under the Kenya Water Policy 2012 are now under the management of the county government.

#### **4.12.2 The Kakamega County Water Bill 2014**

The county government has also established its own local level water policy. The Kakamega County Water Bill 2014 was created to organize the local water sector and ensure clean and sufficient water supply to all residents. The bill was established in recognition that there were many challenges facing the water sector in the county that hadn't been addressed within the existing national water management policies. The challenges include water mismanagement at the local level, waste and inefficient usage of water among the various users, pollution caused by both human and industrial activities, increasing population in the county, and climate change. The policy goals for the bill are to: guide efficient supply and utilization of water in the county and achieve sustainable water availability for the attainment of cultural and socio-economic development.

The Kakamega County Water Bill has the following provisions: guarantee the Right to water as per the constitution 2010, provide a legal framework for the County government to establish Water Service Providers (WSPs) or alternative provision arrangements for urban and rural areas with the view of enhancing the development and management of water services, provide a mechanism to distinguish between water infrastructure developments of national and strategic importance that cut across counties and county specific water infrastructure projects, enhance licensing options of

local Water Service Providers by the national regulator, management revenues generated from water supply for the purposes of operating and maintaining existing water assets in the county and facilitate the setting up of County Water Services Providers as companies under the Companies Act and the merging of multiple water companies in the county into one single water services provider.

The study also found that the county government in consultation with the national government is in the process of adopting three additional policies to improve water management. They are the following; National Irrigation Policy 2012, National Land Reclamation Policy 2012 and National Water Policy 2012. These policies have not yet been approved. Their goal is to align the priorities of the local county government in the provision of water services with the priorities of the national government. They are also aiming to reduce the institutional overlaps between county level water institutions and national level institutions. Despite water accessibility and provision being a devolved function, it is not an exclusive function of the county governments in terms of developing policies. The national government continues to lead the way in providing an overall water regime for the country.

## CHAPTER FIVE

### SUMMARY, CONCLUSION AND RECOMMENDATIONS

#### 5.1 Introduction

This chapter presents a summary of research findings, conclusions and makes policy recommendations including further areas for research.

#### 5.2 Summary

The background to this study emphasized the point that water is an essential need for the prosperity of mankind. MDG 7 set the target to halve, by half by the year 2015, the proportion of people without sustainable access to safe drinking water and sanitation (UN,2015). Furthermore, SDG 6 is not just a goal in itself, other goals are anchored in it.

The Institutional Theory (North,1990) on which the literature review is anchored on, proposes that for development to take place, relevant norms should be entrenched in a policy framework and an established set of institutions to regulate the social and economic environment.

The county government system in Kenya was put into place with the sole aim of establishing functional, efficient and effective institutions for public service delivery (GOK,2010). Thus, water being a devolved function, water services are to be distributed through sustainable water institutions and infrastructure. North (1990) argues that the performance of a sector is majorly influenced by how public institutions are structured and administered. In this study therefore, devolved units are to serve as agents that facilitate water access and provision.

The first objective was to describe the Devolved Government System for Water Services in Kakamega County. The main water service provider is the Kakamega County Water and Sanitation Company (KACWASCO). KACWASCO serves as the main agent of devolution. This company works in partnership with other institutions and stakeholders including the National government. The Water sector in Kakamega County is guided by the National Water Policy of 1999 that emphasizes provision of water services and Water Act 2002 that led to the establishment of Water Services Boards-LVNWSB. The National Government provides regulations, policies, and guidelines through Water Services Regulatory Board (WASREB) while Water Services Boards implements them. The role of LVNWSB is to identify water sources, perform feasibility studies, lay down designs and construction of water supplies.

Secondly, the study sought to analyze the devolved government policy on water access. Generally, there was very low knowledge about the water policy framework among the key stakeholders interviewed. The study found that the Kakamega County anchors its policies from the National Policy and that CIDP provides for strategies to increase water availability in the county. The 2002 Water Act was noted as being pro-poor and thus provided for a platform for participation between water providers and consumers.

Other policies mentioned included the Strategic plans of various water governing bodies, the Kakamega County Water Bill 2014, The Environmental Management and Coordination Act (EMCA 1999, Amended in 2015), The CoK (Schedule No.4) which stipulates that the provision of clean water and sanitation services has been transferred to county governments, MDG 7 & SDG 6. The Water Bill 2014 is a local level water policy put in place to organize the local water sector. This bill has the intention of

addressing water mismanagement, inefficient usage of water among users and pollution.

Lastly, the study sought to examine the devolved government initiatives geared towards sustainable water access for human development. The results showed that there are a number of water initiatives in the areas surveyed. However, a majority of the projects are initiated by individuals for homesteads and not the county government. From the analysis, half of the respondents mentioned that the individuals in their homesteads had initiated the projects they mentioned. Only about a third of the respondents mentioned that counties had initiated some water projects in their areas. In fact, over 70 percent of the residents rated the county government poorly in terms of ensuring water access to the residents.

### **5.3 Conclusions**

From the literature review it emerges that there are theoretical and practical linkages between devolved governance system and water access for rural sustainable development. However, the success of water accessibility and sustainable development is contingent upon the proper functionality of a devolved government system that is accompanied by among others an effective policy and institutional framework with qualified human resource.

On policy frameworks, the study established that efforts to provide water access in Shitochi and Ikuywa sub-locations is a combination of national and county governments policies. However, the study established that at the county level the development of policies is still at the nascent stage to suit the prevailing dynamics. KACWASCO is the main institution for water in the county. However, there are others

such as LVNWSB, the main problem with all these is that there is overlapping mandate occasioned by lack of clarity in their respective duties and responsibilities.

Finally, there are multiple stakeholders such as the National and County governments, NGOs and individuals involved in the provision of water to rural households. However, most of the efforts are made by the individual homesteads.

#### **5.4 Recommendation**

The study having found that the national government lays down policy frameworks for the county to adopt, the study recommends a need for various stakeholders, especially those in the county government, to familiarise themselves with the legislative and policy framework guiding water management in the county for efficiency in implementation. As it came out, some of the leadership in the county are unaware of the policy framework in the county despite their leadership positions. The study also recommends that stakeholders in the county formulate policies that suit specific water needs for rural development.

The study recommends that a platform for proper coordination among representatives from various water sector institutions to create an environment of workmanship and not competition, this will facilitate effective delivery of water services in the county.

The study also recommends a proper clarification of roles and responsibilities of various stakeholders in the water sector in the county to enhance efficiency in service delivery. Also, water institutions to be equipped with the necessary manpower in various capacities that hinders productivity.

### **5.5 Areas for Further Research**

There are significant works published on issues of water accessibility for rural development. However, when it comes to devolved function, the overall impression is that there is not much literature on this specific issue. Therefore, there is need for further research on how devolution has provided services in countries with federal states and the challenges they face e.g. Nigeria.

There is need for a comparative study on the impact of devolution on water accessibility specifically to look at pre and post devolution period.

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## APPENDICES

### Appendix 1: Interview Guide for Rural Households

The researcher is a post graduate student at the University of Nairobi, at the Institute for Development studies. Carrying out an academic study on Water Access for Sustainable Rural Development under the Devolved Government System in Kakamega County. The information acquired will help understand the role played by devolution in provision of water. This information will be put together with others and the treated very confidentially.

#### Demographic information:

1. Name of County Ward Assembly-Isukha South
  - Shitochi Sub-location
  - Kakamega Forest Sub-Location
2. Gender
  - Male
  - Female
3. Level of education
  - Non-formal
  - Primary
  - Secondary
  - Post – secondary but not university
  - University degree
  - Post-graduate

4. Relationship of the respondent to head of the family
  - Self
  - Spouse
5. What is the total number of the household members in your family?
6. What is your main Occupation?
  - Farming
  - Business
  - Employment
  - None
7. Level of monthly household income from your occupation?
8. Sources of Water
  - Public Taps
  - Wells
  - Rainwater
  - Piped Water
  - Rivers
  - Ponds
- a) state the use of these water sources?
- b) How long have you accessed water from these sources?
  - 0-12months
  - 1-3 years
  - 3-5years
  - 5 years and more

- c) How regular do you get this water?
- Daily
  - Weekly
  - Monthly
- d) Is this trend replicated during the dry season?
- Yes
  - No
- e) Do you have storage facilities? if yes, which ones?
- f) How much is your monthly bill for water? (for those with piped water)
- Kshs 100-500
  - Kshs 501-1000
  - Kshs 1001-1500
  - Kshs 1501-and above
- g) How much do you pay for a 20ltr jerrycan of water? (for those who buy from vendors)
- Kshs 20-50
  - Kshs 51-100
9. Are there Water initiatives, programs, projects within your locality?
- Yes
  - No
- a) If yes, how many are;
- Bore holes
  - Hand Pumps
  - Developed Rivers

Piped Water

b) Who initiated them?

- National government
- Devolved government
- Local government
- NGO
- Community
- Individual

c) Do you pay any fees to access water from these projects?

- Yes
- No

d) how much?

- 0-50
- 50-10

10. Have you heard of Devolution?

- Yes
- No

11. Do you think devolution is working to ensure sufficient water supply for rural development?

- Yes
- No

## **Appendix 2: Interview Guide for Focus Group Discussions**

The researcher is a post graduate student at the University of Nairobi, at the Institute for Development studies. Carrying out an academic study on Water Access for Sustainable Rural Development under the Devolved Government System in Kakamega County. The information acquired will help understand the role played by devolution in provision of water. This information will be put together with others and the treated very confidentially.

### **Demographic information:**

1) Name of County Ward Assembly-Isukha South (Tick appropriately)

- Shitochi Sub-location
- Kakamega Forest Sub-Location

2) Gender

- Male
- Female

3) Level of education

- Non-formal
- Primary
- Secondary
- Tertiary
- University degree
- Post-graduate

4) What is your main Occupation?

5) Level of monthly household income? (Kshs)

- 5000/--10000
- 10001-20000
- 20001-50000
- Above 50000

6) Sources of Water

- Public Taps
- Wells
- Rainwater
- Piped Water
- Rivers
- Ponds
- Tankers

e) Do you have storage facilities? if yes, which ones?

h) How much is your monthly bill for water? (for those with piped water)

- Kshs 100-500
- Kshs 501-1000
- Kshs 1001-1500
- Kshs 1501-and above

7) Are you aware of any government policies or strategic plans on water issues in

Kakamega county?

- Yes
- No

Which one?

8) Are there water initiatives, programs, projects in your area?

Yes

No

a) If yes, which ones are they?

Boreholes

Hand pumps

Developed Rivers

Piped Water

c) Who initiated them?

National government

Devolved government

Local government

NGO

Community

Individual

9) Have you heard of Devolution?

Yes

No

10) Do you think devolution is working to ensure sufficient water supply for rural households?

Yes

No

11) What do you think can be done to improve the water situation in the county?

### **Appendix 3: Interview Guide for Key Informants**

The researcher is a post graduate student at the University of Nairobi, at the Institute for Development studies. Carrying out an academic study on Water Access for Sustainable Rural Development under the Devolved Government System in Kakamega County. The information acquired will help understand the role played by devolution in provision of water. This information will be put together with others and the treated very confidentially.

#### **Demographic information:**

1) Gender

- Male                      Female

2) Level of education

- Secondary                      University degree                      Post-graduate

3) Name of Organization

4) Position held

- Director                      Technical                      Manager
- Administrative                      Finance                      Planning

5) Number of years in office

- 0-5years                      6-10years                      11-15years

6) Level of monthly income? (Kshs)

- 5,000/-10,000/=                      10,001/-20,000/=
- 20,001/-50,000/=                      Above 50,000/=

7) Briefly describe the history of water sources and water provision in kakamega county.

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8) What is the relationship between the National and the County government in the provision of clean water to rural households? (Institutional, Policy and Legislation)

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9) What systems are in place to identify people/areas in need of water?

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10) What percentage of the budget is allocated for the provision of water?

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11) What extra resources do the county require to ensure that its well equipped to provide reliable and affordable water access for its residents?

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12) What are the various policies guiding the supply of water in Kakamega County?

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13) What are the main challenges of implementing these policies?

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14) How does the 2002 Water Act facilitate provision of water to rural households?

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15) What actions are being taken to ensure that all urban centers in the county have access to water?

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a) How about the rural households?

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16) What are the specific programmes and projects to facilitate water accessibility to rural households in Kakamega County?

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17) What are the main challenges do you face in implementing these programmes and projects?

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18) What are the main opportunities for implementing these programmes and projects?

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19) Who are the collaborators and partners in terms of funding for the provision of clean water?

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