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An Investigation of the challenges in sustainable finance for water and sanitation in Kenya.

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AN INVESTIGATION OF THE CHALLENGES IN SUSTAINABLE FINANCE FOR WATER AND SANITATION IN KENYA

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DECLARATION

I declare that this work has not been previously submitted and approved for the award of a degree by this or any other University. To the best of my knowledge and belief, the thesis contains no material previously published or written by another person except where due reference is made in the thesis itself.

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ABSTRACT

Water and sanitation are critical to achieving the Sustainable Development Goals in addition to having an impact on health, particularly that of children under the age of five. Economic losses prevalent because of increased household expenditures on health-related expenditures and decreased productivity because of water and sanitation-related diseases, translate into additional budgetary allocation requirements for curative health that could otherwise be used for developmental initiatives and projects in a country's economy. The study set out to investigate the challenges that impede sustainable financing of water and sanitation, as well as to investigate solutions that will aid in bridging the gap in the sustainable financing of water and sanitation in Kenya. The sustainability theory and stakeholder theory formed the foundation of this study. A qualitative research design was used for the study, with the respondents comprising of officials from the Ministry of Health (MoH) (national and county), the Ministry of Water, Sanitation, and Irrigation (MoWSI), developmental organisations, and financial institutions. The study gathered qualitative data from 30 experienced key informants and an interview guide was used to guide the interviews. Content analysis was used to analyse qualitative data, and the results were presented in prose form. The challenges impeding sustainable finance in water and sanitation including inadequate financing, dependency syndrome, rapid urbanisation, affordability, and knowledge gaps were examined, and solutions to bridge the gap in water and sanitation financing were discussed. Financial innovations such as blended finance, institutional arrangements, improvement of the regulatory framework, promotion of accountability in water and sanitation financing were among the solutions. Alignment of the solutions brought out the fact that water and sanitation sector harmonisation was crucial for its sustainable financing to aid in enhanced intersectoral monitoring and knowledge harmonisation, which would not only improve information exchange for improved sector monitoring and informed investment choices for the sector's sustainable finance for water and sanitation but also aid in the development of the water and sanitation sector financing governance framework. With these a market that attracts sustainable finance for the sector because of increased transparency, readily available information, and a market whose risks have been evaluated, mitigation measures developed, and information made available to all stakeholders, would result in the development of suitable financial solutions, and enhanced access to sustainable finance.

Key Words: *Sustainable Finance, Sustainable Development Goals, Stakeholder*

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LIST OF ABBREVIATIONS

CDCP	Centers for Disease Control and Prevention
EC	European Commission
ESG	Environments, Social, Governance
GDP	Gross Domestic Product
GLAAS	Global Analysis and Assessment of Sanitation
JICA	Japan International Cooperation Agency
JMP	Joint Monitoring Programme
MoH	Ministry of Health
MoWSI	Ministry of Water, Sanitation and Irrigation
NGO	Non-Governmental Organization
OECD	Organization for Economic Cooperation and Development
PWRF	Philippines Water Revolving Fund
SDG	Sustainable Development Goals
SWA	Sanitation and Water for All
SHF	Sanitation Hygiene Fund
UN	United Nations
UNEP	United Nations Environment Program
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
WASH	Water, Sanitation and Hygiene
WBG	World Bank Group
WHO	World Health Organization

DEFINITION OF TERMS

Sustainable Development Goals	Global Goals, were adopted by the United Nations in 2015 as a universal call to action to end poverty, protect the planet, and ensure that by 2030 all people enjoy peace and prosperity. They recognize that action in one area will affect outcomes in others, and that development must balance social, economic and environmental sustainability.
Sustainable finance	The process of taking due account of environmental, social and governance (ESG) considerations when making investment decisions in the financial sector**,** leading to increased longer-term investments into sustainable economic activities and projects (European Commission).
Stakeholder	Person, organization or entity that represents different interest interests and interest groups who can affect or are affected in the process of value creation.

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DEDICATION

I dedicate this project to my family, particularly my mother, who has always been my biggest cheerleader, always encouraging me to go forth and conquer whatever I desire, to my late father, whose belief in my abilities keeps me going to this day, and to my children for being my driving force.

CHAPTER ONE

1.0 INTRODUCTION

1.1 Background of the Study

Sustainable finance is a subset of traditional financing and investing that seeks to place capital into projects that reinforce sustainable development. According to the European Commission (EC), sustainable finance incorporates environmental, social, and governance (ESG) factors when making financial investment decisions, resulting in greater long-term investments in sustainable economic activities and projects. This is achieved on a variety of levels from the private sector, pension funds, central banks, and non-profit organizations from around the world, with the main financial instruments for a sustainable finance being equity and debt. The Debt financing comes in two different forms: loans and bonds. Some examples of sustainable financial instruments include green loans or green bonds, renewable energy equity financing, carbon credits, public institutional equity investing and so much more.

Water and sanitation is one of the focus areas of the sustainable development goals (SDGs), specifically SDG 6 which calls out for clean water and sanitation for all. It is one of the two SDGs that focuses on the people's quality of life, the other being SDG 7 on clean energy, and is directly related to access to essential infrastructure and resources i.e., water and sanitation. Goal 6 has goal 6.1 specifically calling out for universal and equitable access to safe and affordable drinking-water, while goal 6.2 aspires for access to adequate and equitable sanitation and hygiene for all, as well as the end of open defecation.

In as much as it is appreciated that access to water and sanitation is key in enhancing health in society and contributes both directly and indirectly to the economic welfare of a countries citizens, public funding into the sector remains limited as compared to the required budgets.

The finance gap to finance the to achievement of SDG 6 continues to widen. The World Bank estimates that $114 billion per year in overall global investment is needed to meet SDG targets 6.1 and 6.2 (World Bank Group and UNICEF, 2017). Close to these estimates is the breakdown provided by Hutton and Varughese (2016), outlining the composition that the annual costs of safe water is $37.6 billion, basic sanitation is $19.5 billion, and safe fecal waste management is $49 billion, plus hygiene $2.0 billion. It also includes an estimated 50 percent of households first having basic water and simple pit latrines before investing in the higher-level service.

Inadequate and inefficient mobilization of financial resources to meet these financial requirements have been identified as key constraints to universal and sustainable water and sanitation and thus the call for sustainable financing mechanisms into the sector (World Bank Group and UNICEF, 2017).

The OECD Environment Policy Paper No. 11 acknowledges the growing recognition of the crucial contribution of water-related investments to climate resilience and to delivering on the Paris Agreement and shows that beyond environmental concerns, sustainable and collaborative management of shared water resources also strengthens international peace and security (OECD, 2018).

1.2 Effects of Poor Access to Water and Sanitation

According to the WHO/UNICEF Joint Monitoring Programme (JMP) data for 2021, an estimated 2 billion people still need access to properly managed water and improved drinking-water sources, while more than 3.6 billion people lack access to improved and safely managed sanitation. The significance of water and sanitation in achieving the SDGs cannot be overstated, as a lack of it has been shown to contribute to unnecessary deaths, chronic disease, missed schooling, and lower productivity (United Nations, 2018). Furthermore, Duflo et al. (2012) state that, in addition to severe health problems, a lack of access to clean water and sanitation facilities is a leading cause of girls dropping out of school after puberty due to a lack of access to enclosed, safe toilets for privacy, particularly during menstruation. It is also seen that poor water and sanitation leads to about 675000 premature deaths annually, with estimated annual economic losses of up to 7% of GDP in some countries (World Bank, 2016b). Socially, it is seen that in households that lack water, women often are forced to collect water from an outside source, and this diverts time from market-oriented work, reducing their (women's) contribution to household income, contributing to economic losses at the household level (Ilahi and Grimard, 2000).

Further, water-related losses in agriculture, health, income and property could result in a decline by as much as 6% of GDP by 2050 and lead to sustained negative growth in some regions of the world (World Bank, 2016a). The situation in most of sub-Saharan Africa and Asian countries is that to meet the scale of this challenge, governments will need to ensure that the right a multi stakeholder approach is embraced by all players as a means of attracting sustainable financial solutions into the sector.

The human right to water and sanitation is enshrined in Article 43(1) of Kenya's 2010 Constitution, which states that everyone has the right "to accessible and adequate housing and to reasonable standards of sanitation," as well as the right "to clean and safe water in adequate quantities." It provides recognition that water and sanitation is a citizen right and thus the government is under the obligation to provide such to the citizens. In line with this, the social pillar of Kenya's vision 2030, aims to improve the quality of life for all Kenyans by targeting a cross-section of human and social welfare projects and programmes with water and sanitation being one of the eight key social sectors addressed (Government of Kenya, 2013). This means that the government is obliged to ensure that its citizens have access to clean and adequate water and sanitation, this being despite the limited resources available for the same. With competing, limited resources, it is paramount that sustainable financing mechanisms for the sector are explored reducing the overall burden from the government and reducing the lead time that will be required for the access to clean water and sanitation to be achieved countrywide.

The Kenyan government has set an ambitious target of universal access to water and sanitation by 2030, which will necessitate greater financial resources to put in place the utilities and equipment required to make this available to all Kenyans. The Kenya Vision 2030 national development plan seeks to make basic water and sanitation available to all by 2030.availability The total investment needed to reach universal access by 2030 is estimated at $12.9 billion dollars. However, the current available government budget for water and sanitation is $5.6 billion, leaving a $7 billion gap. This gap could be partially filled through private sector lending to utilities, typically for revenue- generating investments with a shorter payback period. However, commercial lending to water utilities is in its nascent phase (Siele & Tibbs, 2019).

1.3 Global Trends in Sustainable Finance in the Water and Sanitation Sector

To achieve Goal 6 of the Sustainable Development Goals (SDGs) and ensure the availability and sustainable management of water and sanitation for all, there is an immediate need to address systemic service delivery inefficiencies and build strong institutions capable of professionalising the water and sanitation sector and attracting substantial public and private financing. The main task of the financial system is to allocate funding to its most productive use (Schoenmaker, 2017). As a result, finance takes a very strategic position in deciding which usage will be (further) facilitated and which usage will be discouraged. Consequently, finance plays an increasingly important role in achieving sustainable development. Whereas

traditionally, the ‘most productive use’ of finance has been defined as creating the largest shareholder value, a shift is taking place towards a broader model of creating the largest stakeholder value, therefore the emergence of sustainable finance (Schoenmaker& Schramade, 2018).

Sustainable finance takes an integrated approach, looking at economic, social and environmental returns (Schoenmaker, 2017). A concept that is often intertwined with sustainable finance is responsible investing, being defined as ‘an approach to investment that explicitly acknowledges the relevance to the investor of environmental, social and governance factors, and of the long-term health and stability of the market. Moreover, it recognizes that the generation of long-term sustainable returns is dependent on stable, well-functioning and well-governed social, environmental and economic systems (WHO/UNICEF Joint Monitoring Programme, 2015). Other approaches involve impact investing, ethical investing or faith-based investing. Simultaneously, some call it green investing (WHO, 2016), inclusive finance, SDG finance or development finance.

Following the discussions prior to the launch of the Sustainable Development Goals (SDGs), a renewed focus on the need to involve the private sector in addressing the SDGs were coupled with a strategy to attract the private sector by shifting from aid and ‘North-helping-South’ to aid to trade, with ‘all countries working collectively’. In addition to addressing a formerly more neo-colonial approach, this meant that instead of investing more (public) finance, (private) finance streams would be allocated differently and more effectively to create impact (World Bank & UNICEF, 2017). In other words, whereas previously development finance consisted mainly of donations, now a shift is taking place of doing good whilst also developing a business case.

Recent trends show a development where (financial) return and (social and environmental) impact are being combined to reach the great impact on all dimensions, financially, socially, ecologically. In the same way, various financing mechanisms and combinations of financing mechanisms can be found, of which blended finance is most common, as it combines public and private capital to mobilize additional finance towards sustainable development (Bisaga & Norman, 2015). What is bringing each of these approaches together is that to ignore the ESG factors is to ignore risks and opportunities that have a strong influence on investment returns (Fonseca & Pories, 2017). In other words, whilst some investors are pro-actively investing using a sustainable (responsible, integrate) approach, other investors gradually come to realise

that the only way forward to have a long-term vision for their own financial flows is to take into consideration the environmental, social and governance factors, thereby transitioning into active players for sustainable finance.

Aid commitments have decreased from USD 10.4 billion to USD 8.2 billion globally, and from USD 3.8 billion to USD 1.7 billion in Sub-Saharan Africa. Comparatively, available data on national budgets and expenditures indicates that government allocations and expenditures for water, sanitation, and hygiene (WASH) are increasing (WHO, 2017). However, more than 80% of countries report that current financing levels will not be adequate to meet national WASH goals or the higher service standards outlined in SDG 6.

In Ecuador, the National Strategy for Water and Sanitation set a ten-year target in 2014 of 100% coverage for water and sanitation services, which requires a total estimated investment of US$ 7.3 billion. The National Strategy indicates that the state is currently investing US$ 350 million per year, which means investments will need to be doubled. For drinking-water, US$ 2.4 billion is needed and for sanitation US$ 4.9 billion is needed (including for wastewater treatment in the 10 largest cities representing 38% of the population). Urban needs are US$ 5 billion, while rural needs are US$ 2.3 billion. Bangladesh reported an increase in its government budget for WASH from US$ 308 million to US$ 548 million from their financial year 2013 to 2015. The Department of Public Health Engineering and four large Water Supply and Sewerage Authorities: Dhaka, Chittagong, Khulna, and Rajshahi, are responsible for water supply and sanitation facilities throughout the country. These five institutions alone reported a combined budget increase from 20.2 to 30.3 billion taka (US$ 259 to US$ 389 million) from 2013 to 2015 (WHO/UNICEF Joint Monitoring Programme, 2015).

A Water Sector Infrastructure and Investment Framework in South Africa found that in 2016, a total annual capital investment of 82 billion rand (US$ 6.4 billion) was required for WASH over the next 10 years, but currently available funding is only about 46 billion rand (US$ 3.6 billion) a year, i.e., only 56% of capital needs are currently funded. Also, lack of investment in operations and maintenance (O & M) is cited as a particular problem causing several schemes to not function properly. There is an estimated annual sector maintenance shortfall of 44 billion rand (US$ 3.4 billion) (World Bank & UNICEF, 2017).

Papua New Guinea (PNG) has estimated that the sector needs US$ 100 million for capital expenditures and US$ 20 million for operations and maintenance (O&M) per year. PNG has only about 34% coverage of the population in the areas that have been declared Water PNG

districts. In Peru, the Ministry of Housing, Construction, and Sanitation budget increased from 914.3 to 1 358 million soles (US$ 287 to US$ 427 million) from 2013 to 2015. While regional government budget allocations for WASH decreased from 489.2 to 363.3 million soles (US$ 153 to US$ 114 million), local government budget allocations increased from 2 882 to 3 797 million soles (US$ 906 million to US$ 1.2 billion) from 2013 to 2015 (WHO 2017).

In Lesotho, the Water and Sewerage Company budget allocation increased from 107.9 to 157.7 million loti (US$ 8.5 to US$ 12.4 million) from 2013 to 2017. During this same period, the Department of Rural Water Supply increased from 107.1 to 217 million loti (US$ 8.4 to US$ 17 million). In Bhutan, district budgets increased from 290 to 410 million ngultrum (US$ 4.5 to US$ 6.4 million), while the budget of the Ministry of Works and Human Settlement increased from 393 to 430 million ngultrum (US$ 6.1 to US$ 6.7 million) from 2013 to 2016. The Ministry of Education and the Ministry of Health reported decreases in WASH budget allocation from 93 to 51 million ngultrum (US$ 1.4 to US$ 0.79 million). Overall government budget allocation increased from 812 to 905 million ngultrum (US$ 12.7 to US$ 14.1 million) from 2013 to 2016; however, this nominal increase in WASH budget was offset by inflation to show a decrease in WASH budget in real terms (WHO 2017).

In Kenya, budget allocations for water supply infrastructure of 33 billion Kenyan shillings (US$ 340 million) per year are a quarter of the required investment needs of 120 billion Kenyan shillings (US$ 1.3 billion). In addition, major gaps were reported in sewerage funding, where out of more than 200 urban centres in Kenya, only about 30 have sewerage networks and treatment plants. Lack of non-capital expenditures and support for counties, service providers, and necessary systems leads to high rates of non-functionality, ineffective services, and coverage stagnation. Sanitation in Kenya is particularly behind schedule for achieving SDG 6, highlighting the need for a study to investigate the difficulties in securing sustainable financing for the water and sanitation sector.

Previous research has tended to focus on the long-term viability of water and sanitation facilities rather than getting to understand the financial mechanisms utilized to fund these initiatives. This is discussed in further depth in Section 2 of this study and is summarized in Table 2.1.

1.4 Statement of the Problem

The Joint Monitoring Programme (JMP) of WHO/ UNICEF, statistics in 2015 show that an estimated that 660 million people still lack access to improved drinking-water sources, while over 2.4 billion people lack access to improved sanitation. Official Development Assistance

(ODA) commitments are decreasing, and many countries rely heavily on external financing, with some countries receiving over 50% of their water, sanitation, and hygiene (WASH) financing from external sources.

Under the Millennium Development Goals (MDGs), the international community had relied on foreign aid budgets and debt relief to tackle the development goals, but these tactics are already estimated as inadequate under the SDGs. As traditional strategies and sources of finance are not enough, and with the World Bank Group and UNICEF (2017) emphasising that the financing needed to meet the global SDG WASH targets greatly outweighs the available financing from traditional sources, closing Africa's infrastructure financial gap requires innovations on the part of the public sector, development partners, and the private sector.

It is also seen by the United Nations (2018), that the water sector official development assistance (ODA) has remained constant at around 5 per cent as a proportion of the total ODA disbursements, despite the growing total water sector ODA disbursements increasing from US$7.4 billion in 2011 to US$9.0 billion in 2016. The situation is worsened by tough global economic times buoyed by global recession which have shrunk donor funding.

Access to water and adequate sanitation remain a significant challenge in Kenya. Currently, just over half of the Kenyan population has access to clean water, and only 16 percent has access to adequate sanitation. In Kenya, the financial gap shows that the total development expenditure on water and related services was projected to increase by 47.3 per cent from Ksh. 31.1 billion in 2018/19 to Ksh. 45.8 billion in 2019/20 (KNBS, 2020).

Numerous studies have been done that relate to sustainability and/ or financial sustainability of water and sanitation projects in Kenya. However, previous research has tended to focus on the long-term viability of water and sanitation facilities rather than getting to understand the financial mechanisms utilized to fund these initiatives. This study is therefore important as it aimed to identify the challenges in the sustainable finance for water and sanitation and outline practical solutions by sector practitioners that would aid in enhancing the sustainable finance for water and sanitation. This was discussed in further depth in Section 2 of this study and was summarized in Table 2.1. Stephen (2021), for instance examined the influence of blended finance options on water and sanitation project investments. Her research examined the impact of blended finance techniques on project investments in Kenya's water and sanitation sector, focusing on one of the sector's sustainable financing mechanisms as a steppingstone to commercial financing. This study, on the other hand, focused on identifying challenges that

would otherwise obstruct sustainable finance for the sector, as well as solutions that would increase financial flows into the sector, thereby increasing both public and private investments and ensuring that the sector has access to sustainable finance.

1.5 Research Objectives

1.5.1 General Objective

The study aimed to investigate the challenges in sustainable finance in the water and sanitation sector.

1.5.2 Specific Objectives

The specific research objectives were:

i. To investigate the challenges that hinder sustainable financing of water and sanitation in Kenya.
ii. To explore the solutions that aid in bridging the gap in sustainable water and sanitation in Kenya.

1.6 Research Questions

The following were the research questions that guided the study.

i. What are the challenges that hinder sustainable financing of water and sanitation in Kenya?
ii. What are the solutions that aid in bridging the gap in the sustainable finance for water and sanitation in Kenya?

1.7 Scope of the Study

The study was based on Kenya focusing on institutional stakeholders in the water and sanitation sectors and those financial institutions that are already financing the sector. The purpose of this was to learn from sector experience and expertise and provide an understanding of local challenges faced by these key experts in addressing the financing gap in sanitation. Further to this, they were an instrumental population on sharing possible ideas that would lead to the sustainable finance of water and sanitation based on their sector expertise and global exposures. The selected scope was convenient in respect to the time and financial constraints and was instrumental in informing on strategies to enhance sustainable finance for the water and sanitation sector in Kenya.

1.8 Significance of the Study

The private sector including financial institutions, impact and social investors willing to invest in water and sanitation finance would benefit from the study are keen to know that their investments they make are being utilized specifically in the ways agreed on. In this case they are keen to understand issues surrounding accountability for them to be able to evaluate their investments and the partners involved.

The findings will further be useful to researchers as they will form a basis for further research. The issues identified in this study on sustainable financing are paramount in exploring the potential solutions to sustainable finance for water and sanitation therefore giving an opportunity for further research into the sector as to how the financing gap in water and sanitation can be addressed.

This study is useful to policy makers in the sector as they are critical in coming up with policies that support innovations for sustainable finance was the water and sanitation sector and in ensuring these policies are anchored into the national systems. With this, the policy makers also have a role in ensuring the adherence and enforcement of these policies and regulations.

Additionally, this study is useful to practitioners in carrying out other studies that would fill in the gaps left out in this study for the purposes of providing sustainable solutions towards increasing financial flows into the water and sanitation sector.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Introduction

This chapter dealt with the review of the relevant literature with specific reference to literature on the sustainable finance for the water and sanitation sector. The process of literature review involved the review of literature from academic sources such as books, journals, electronic library, national policy papers, past research studies and other sustainable finance scholarly works published. This chapter also focused on conceptualization in a bid to identify the nature, subject, purpose and broad content of the research problem.

2.2 Theoretical Literature

To understand the concept of sustainable finance for in the water and sanitation sector, two key theories were reviewed which include the sustainability theory and stakeholder theory.

2.2.1 Sustainability Theory

The emphasis on sustainability is motivated in part by the world's many economic, social, and environmental stresses, as well as a desire to better understand human-environment relations and social-ecological systems (Harrington, 2016). Among the first uses of sustainability as a concept to help integrate response to related environmental and social problems was the 1975 program of the World Council of Churches (WCC) for a “just, participatory, and sustainable society.”

According to Bettencourt and Kaur (2011), the “concept of sustainable development now pervades the agendas of governments and corporations, as well as the mission of educational and research programs worldwide.” Concerns about the health of social-ecological systems, as well as the increasingly visible human dimensions of global change, are linked to the intertwined concepts of sustainability and development (Vitousek et al. 1997; MA 2005; Kareiva et al. 2007; Steffen, Crutzen, and McNeill 2007; Steffen et al. 2015a, 2015b).

The 1987 report of the World Commission on Environment and Sustainability, Our Common Future, popularly known as the "Brundtland Report", gave the word "sustainable development" international prominence. It gave the well-known definition that "Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs." The 1974 Cocoyoc Declaration (the outcome of a United

Nations-sponsored symposium in Mexico) declared that sustainability is a relationship between the "inner limits" of human needs and the "outer limits" of Earth's resources. Sustainability brings society's ecological dependency into moral relation with its social and financial requirements.

Economic models advocate for the preservation of opportunity, which is typically in the form of money. We should think of sustainability as an investment dilemma, according to the economist Robert Solow's classic concept, in which we would use returns from the use of natural resources to generate new opportunities of equal or greater value.

Climate change mitigation and adaptation, as well as the environment in general, such as biodiversity protection, pollution control, and the circular economy, are examples of environmental concerns. Examples of social factors include inequality, inclusiveness, labour relations, human resources and community investment, as well as human rights concerns, while the governance of public and private institutions, including management structures, employee relations, and executive remuneration, is critical to ensuring the inclusion of social and environmental considerations in decision-making.

This theory was therefore relevant to this study as sustainable finance is the process of considering environmental, social, and governance (ESG) factors while making financial investment decisions, resulting in longer-term investments in sustainable economic activities and projects, in this case water and sanitation. Climate change mitigation and adaptation, as well as the environment in general, can be included in environmental considerations.

2.2.2 Stakeholder Theory

Stakeholder theory was first proposed by philosopher Edward Freeman in 1984. From a sustainability science perspective, Lock (2017) argues in his article that sustainability could also be considered the center around which societal actors are grouped, because everyone, individuals as well as stakeholders, have a stake in a 'common future' that is built on the transformative concept of sustainability. According to Nilsson, 2007, Stakeholders represent different interest interests and interest groups who can affect or are affected in the process of value creation for the existence of financiers.

The stakeholder theory was relevant in this study because it is critical to broaden corporate objectives from shareholder value, which focuses on maximizing returns, to stakeholder value, which integrates financial, social, and environmental value for a sustainable economy

(Schoenmaker & Schramade, 2019). It also provides a normative framework for analysing stakeholders' obligations to contribute to, advance, promote, and achieve sustainability. Financiers, for example, have similar responsibilities to all their stakeholders, that is, to all the people who are affected or affected by the agents' decisions (Freeman et al., 2010). This implies that financial agents have obligations to, for example, customers, creditors and local communities, as well as to shareholders. The interests of all these groups need to be put under consideration as is seen when Mr. Utermann in the article "How asset managers turned into business agitators" (The Financial Times, 2019) agrees that the focus from investors on ESG had changed the investment indust1y stating that when shareholders started engaging with companies on issues to do with the environment or other ESG issues, that gave them an opportunity to take their gaze away from short-term metrics and look at how they could differentiate themselves.

2.3 Empirical Review

Empirical review was discussed in relation to the two research objectives focusing on the challenges that hinder sustainable financing of water and sanitation, and the solutions that will aid in bridging the gap in water and sanitation financing in Kenya. The discussion was guided by the conceptual framework.

2.3.1 Challenges that Hinder Sustainable Financing of Water and Sanitation

The GLAAS 2017 report brings out the financial challenges of meeting the SDGs including which options and opportunities exist to bridge funding gaps, the nature of financing mechanisms, such as using a mix of public and private financing, how to increase financial efficiency in infrastructure development, service delivery, and asset management, and viable tariff approaches. Despite being a critical determinant of public health and economic development, the Water and Sanitation sector faces significant challenges in attracting sufficient resources to meet its investment requirements. The availability of funds is critical to the success of Water and Sanitation projects. From the research conducted some of gapping challenges that hinder sustainable financing for the water and sanitation sector are outlined as below.

Inadequate sector financing priorities in the sustainable financing in water and sanitation sector

Looking at country financing strategies for the sector one finds that financing is often the weakest component of national plans and mostly in reference to water and sanitation with

majority (79 out of 107 plans analysed in one recent study) lacked specific costings or details about how they would be financed. Strategies and plans that do contain a financing component often focus on the annual government budget as a source of investment, sometimes incorporating on-budget development assistance or public-private partnerships. Most plans lack explicit guidance on how to link broader policies, such as those targeting private investment, with planning processes. The Kenya Environmental Sanitation and Hygiene Strategic Framework (WSP.org) 2016 - 2020 shows that for the case of Kenya, it is difficult to determine the annual national and county budgets allocation for water, sanitation and hygiene as it is not delineated but is estimated to be between 0.1% and 0.5% of GDP, lower than the national target of 0.9%.

In his findings, Savelli, Schwartz, and Ahlers (2019) stated that inadequate funding and finance was a critical failure in many development projects in Nigeria. A similar confirmation was by Weststrate, Dijkstra, Eshuis, Gianoli and Rusca (2019) who mentioned that apart from community participation, funds availability has a bearing on sustainable financing of a project. Further, researchers have confirmed the idea of funding as a pillar of sustainable financing of projects. A sustainable approach to cost funding is necessary for operation and maintenance of projects. For instance, Yang and Jackson found that financial uncertainties were a limiting factor for many projects in their study of stalled pumped-hydro energy storage in the United States (Weber & Finance, 2018).

Dependency syndrome and sustainable financing in water and sanitation sector

Research on financial sustainability conducted by Bak et. al., (2017) explain the dependence on donor financing of most water and sanitation projects as being a major challenge to sustainable finance for water and sanitation projects with little utilization of internal resources which is further augmented by the poor return rate of services. Financial resources for public investments in the WASH sector are limited, and to date, there is overreliance on the Consolidated Fund and external sources such as loans and grants (World Bank, 2016a).

Private, domestic, and international sources, including output-based grant-financing, commercial debt, tariffs, and internally generated revenue such as household contributions, equalisation funds, and trust funds, offer additional innovative avenues for resource mobilisation that have not yet been thoroughly explored. In addition, the sector has not utilised alternative international climate and concession financing mechanisms. Water abstraction revenues have not been appropriately allocated to the preservation and conservation of surface

and groundwater sources on which water harvesting and storage rely. Ring-fencing strategies for revenues in the sector are also weak and the sector continues to face other resource mobilization challenges, including weak operational and governance performance by utilities, which undermine solvency and commercial viability; inefficiency in revenue collection; and high levels of non-revenue water - all resulting in low-cost recovery (Schoenmaker, 2017).

Rapid urbanization and sustainable financing for water and sanitation

In the year 2000, the level of urbanization in Kenya stood at 33.4% and projections showed that it could hit 50.8% by the year 2020. The annual growth rate is at 3.76% (World Bank & UNICEF, 2017). The Kenyan urban centres continue to receive high number of immigrants with little or no investment in the housing sector. This has led to the continuous growth in the number of the informal settlements. This coupled with the high foreign debts and the world's economic recession development programmes have been crippled in many ways thus the poor settlements in the urban centres continue to languish in poverty.

As a water-scarce nation with a rapidly growing population and consumption demand, Kenya requires clear and well-coordinated water and sanitation investment planning. Vision 2030 of Kenya aims to make water and basic sanitation accessible to all by 2030. The total cost of investment required for water supply services investment to attain this target is estimated at Ksh. 1.7 trillion, or just over USD 17 billion (WHO, 2016). According to the Kenya National Water Masterplan 2030, the available government allocation is Ksh. 592.4 billion (around USD 6 billion). This leaves a shortfall of USD 12 billion. This gap could be bridged through improving sector efficiency, increasing consumer payment through tariffs, and encouraging private sector financing (World Bank & UNICEF, 2017).

Kenya lacks the infrastructure necessary for adequate water resource management, harvesting, and storage in order to meet universal water and sanitation goals. Weak coordination between national and county governments, national and regional sector institutions, and other stakeholders, particularly regarding investment planning, is a significant barrier to sector advancement (OECD, 2018). In the water sector, this kind of planning has not been properly linked with national and county economic planning and budgetary processes. Further, county and cross-county sector plans have not been adequately developed to integrate with national investment planning. Overall, Kenya is characterized by disjointed infrastructural investments, a lack of synergy, and poor targeting to address different needs and inefficiencies. This is

mainly due to lack of a comprehensive national investment planning to support implementation of the national water master plan (United Nations, 2018).

In Kenya, government allocations for WASH sector investment have increased marginally from approximately USD 400 million to 450 million. However, the sector has not been able to generate enough revenue to plug the additional gap. In addition to water subsector funding disparities, the sector continues to face additional financing difficulties. Low levels of financial resource utilisation are attributable to insufficient project execution capacity, cumbersome procurement procedures, and ineffective contract management. The sector has not optimised the ratio between recurrent and capital expenditure, with the majority of utilities retaining historically bloated workforces to appease political forces. According to the National Water Master Plan 2030, the Kenyan water sector development budget is around 2.8% of the total national budget. However, in terms of GDP, water sector development expenditure accounts for less than 1%. There are also challenges regarding financial leakages and wastage, duplication and unpredictable flows (Fonseca & Pories, 2017).

The cost of exploiting a water resource depends on whether current extraction rates are sustainable. Water usage is said to be sustainable if the net usage of water now, and in the future will be less than the inflow (Bisaga & Norman, 2015). Tariffs should be based on the full price of water, which includes source development, purchase of raw water, treatment, and distribution costs (Weber & Finance, 2018).

Affordability constraints at the household level and sustainable financing for water and sanitation

According to the GLAAS 2017 report, the financial challenges of meeting the SDGs raises many issues such as which options and opportunities exist to bridge the funding gaps, the nature of financing mechanisms, such as using a mix of public and private financing, how to increase financial efficiency in infrastructure development, service delivery and asset management, and viable approaches to tariff-setting and subsidies that address the dilemma between cost recovery and affordability from economics and human rights perspectives.

Knowledge gaps among the different stakeholders and sustainable financing for water and sanitation

There is limited understanding of the financial instruments suitable for financing water and sanitation, coupled with limited knowledge on water and sanitation-based business models. This is further aggravated by a lukewarm regulatory framework where the regulation of the

financial sector does neither sufficiently discourage non sustainable business models nor reward sustainable business practices which take into account adequate ethical standards which should go beyond the legal minimum. This does not necessarily mean that more, but better regulation is required. Improving regulation includes many controversial issues at the technical level. However, the key challenge to improve regulation will be to win support of taxpayers and governments to overcome political resistance.

The OECD report of 2016, highlights that the existing challenge is that of fostering country collaboration and transfer innovations in water security to developing economies (OECD, 2016). Institutions, government and other stakeholders are found to work in silos and lack collaboration thereby discouraging information flow and sharing and curtailing innovations that would otherwise arise from collaborative efforts. Beyond regulation an effective implementation of agreed voluntary standards and principles for sustainable finance by individual banks and service providers is a key challenge. Many financial institutions sign sustainability declarations to secure their reputation but are neglecting implementation. Good governance, determined leadership, ambitious policies, appropriate incentives, effective accountability, and transparency at all levels matter and are a prerequisite for a real change (Gerster, 2012).

2.3.2 Solutions that Aid in Bridging the Gap in Water and Sanitation Financing

Institutional arrangements for sustainable financing for water and sanitation

An institutional framework for sanitation and water management consists of a variety of different organizations in place (or that need to be in place) to develop and manage water resources as well as the delivery of water and sanitation services at various levels of society. They include service providers, regulatory and enforcement bodies, local governments, the private sector, civil society institutions, community-based organizations, and non-governmental organizations (NGOs), among others (GWP 2008). Success is likely to be achieved with regards to sustainable finance for water and sanitation when available resources are optimally utilised under an institutional arrangement that makes the resources work effectively for the sub-sector for the maximum benefit of all stakeholders.

According to SWA (2020), attracting the necessary investment to the sector is dependent on a country's ability to reform the sector by strengthening or otherwise addressing a set of key foundational elements: the regulatory environment, the governance structure, the financial/technical/commercial performance of service providers, and the resulting perception

of risk by investors. Good institutional arrangements are essential to liberate and to develop resources further; for example, to make more finance available by increasing the willingness of customers and citizens to pay for services and provide technical assistance (WHO/UNEP , 1997).

Mercadier and Brenner (2020) on their study emphasized the fact that to ensure sustainable financing in water and sanitation projects, institutional framework must be improved which is based on enough funding. The water and sanitation sector must build up reliable systems to enhance good reputation to the implementing body. There is need to foster good will on people and support development plans for sustainability (Goksu et. al., 2017). Institutional arrangements also ensure that sector development plans are programmatic rather than project based, thus ensuring more efficient use of existing resources and alignment of interventions between the government, private sector, and communities (World Bank Group and Unicef, 2017).

Financial Innovations such as Blended finance for sustainable financing for water and sanitation

The OECD and World Economic Forum define blended finance as "the strategic use of development finance and philanthropic funds to mobilize private capital flows to emerging and frontier markets." with Goksu et al (2017), defining it as the strategic use of public taxes, development grants, and concessional loans to mobilize private capital flows to developing markets. Blended finance plays a key role in maximizing value from existing public funding by incentivizing sector performance, improving subsidy targeting and promoting better sector planning and management as is seen in the case of the Philippines Water Revolving Fund (PWRF), established in 2008 with support from USAID and JICA (Japan's Development Agency).

The goal of blended finance is to maximize the impact of those traditional sources and to crowd in new potential sources, such as commercial banks, pension funds and impact investors. Available data from The World Bank Private Participation in Infrastructure (PPI) database suggests that private WASH investments in the least developed countries (LDCs) are limited to a handful of large-scale infrastructure investments. Domestic private finance is not always available in many emerging markets, and where it is available, it is usually limited to microfinance (UNICEF, 2017).

Traditional suppliers of finance to water and sanitation in developing countries, mainly for capital expenditure, include development banks, bilateral and multilateral agencies, NGOs and governments through budget allocations.

Traditional suppliers of finance to the WASH sector, therefore, need to coordinate to support initiatives that can be applied to strengthen the sector at government/sector and service provider levels to make it more attractive. These initiatives and innovations will help attract new sources of finance into the sector (Ramani, SadreGhazi & Gupta, 2017). USAID's Water, Sanitation and Hygiene Finance (WASH-FIN) programme sought to do this through a collaboration with national governments, development partners, service providers, local financial institutions and other stakeholders to close financing gaps and improve governance structures that enable target-countries to access reliable sources of capital for sustainable, climate resilient water and sanitation infrastructure (Sachs, Woo, Yoshino & Taghizadeh-Hesary, 2019).

Some governments and development actors explored incentives to open up local financial markets to the WASH sector. However, some of these initiatives can give rise to market distortions and impede progress towards sustainability (Zuin et al, 2019). One approach to opening WASH markets was to encourage actors to target new WASH loan products to low-income clients. While permitting this new market to flourish, governments and other stakeholders sometimes strive to protect low-income borrowers from being exploited by predatory lenders. One protection mechanism has been to set limits upon the interest rate margin charged on micro lending. While this margin cap may be well-intentioned, there is still not enough evidence for the long-term impact of this action on the larger objectives of making local finance more readily available or opening WASH markets (Schwartz, Tutusaus & Savelli, 2017).

In conclusion, blended finance contributes to sustainable finance solutions by mobilizing more funds from both the public and private sectors and establishing a variety of cross-subsidization options. It also increases repayable domestic finance through mechanisms that reduce perceived risks and pool finance at the national, municipal, and household levels. Finally, it encourages innovation, concessional financing and less-explored new approaches, such as climate funds and social impact bonds, which the water and sanitation sector rarely has access to.

Align financial institutions appetite to sector financing priorities for sustainable financing for water and sanitation

In 2015, the Government of the Netherlands funded a five-year project in Ghana aiming to boost WASH services for households and small/medium enterprise (SME) WASH institutions in-country. The project budget was six million Euros, of which four million were allocated to a revolving fund for lending and two million for TA to financial institutions, SMEs and households to accelerate private sector involvement in WASH. The main financial instrument used was the revolving fund, which lent funds to micro-finance institutions (MFIs) willing to on-lend for WASH at an interest rate of 10 percent, as opposed to the 30 percent that was locally available (Roaf, de Albuquerque & Heller, 2018).

Financial transparency and information sharing for sustainable financing for water and sanitation

Lack of data is also often cited as an impediment to financial planning and performance tracking. For WASH investment planning, data needed to estimate future needs and resources can include information such as: coverage levels and targets, predicted population growth, an up-to-date inventory of assets and their current condition, cost and performance data, availability of external funds, domestic budget execution performance, and estimated trends in demand for services (Al'Afghani et.al., 2019). The availability of information for decision-making was cited by countries as relatively good, with nearly 70% of countries indicating that data are available, analysed and used (at least partially) for decisions regarding resource allocation for sanitation and drinking-water (Jiménez et. al., 2017). However, countries did not report on the quality of the information or whether it was used specifically for decisions in rural or urban areas.

Countries are also using data in decisions regarding WASH and health. Over 70% of countries indicated that data are available, analysed and used (at least partially) for identifying public health priorities for reducing WASH-related diseases, and for decisions regarding response to WASH-related disease outbreaks, over 80% of countries report using data in their decision-making (Hahm, 2019).

Facilitate partnerships and international collaborations for sustainable financing for water and sanitation.

In order to finance sustainable development, partnerships with domestic and international private businesses and financiers are crucial. Nearly three-quarters of the countries in Asia and

the Pacific have established public-private partnerships for infrastructure investment, with China as a model. There are encouraging signs on the capital market front. Fiji and Indonesia, for example, have become the first developing-country issuers of sovereign green bonds, while Thailand has successfully launched the Thailand Future Fund as a new way to raise private capital for infrastructure investment (Tientip & Zenathan, 2019).

Sector development plans should be programmatic rather than project based, to ensure more efficient use of existing resources. (World Bank Group and Unicef, 2017). Consider alignment in interventions between government, private sector and communities. An exploration of domestic financial sources and instruments for WASH such as Official Development Aid (ODA), Government Contributions such as South Africa's Equitable Share System, crowding in of private sector finances and Align interventions between government, private sector and communities need to be explored to provide a blend of different instruments that can be applied to the sector giving options and a variety of sustainable financial solutions.

2.4 Summary of Literature Reviewed and Knowledge Gaps

2.4.1 Summary of the literature review

Investing in public goods such as water and sanitation is a wise and efficient use of government funds. This opens the door to private funding and improves risk/reward profiles. Other tools that combine public and private financing must be investigated to help governments meet their SDG targets. Identifying effective risk management strategies is a major barrier that could be overcome by developing new applications and updating existing tools, such as establishing mechanisms to provide guarantees, risk insurance, and structuring emerging debt/equity vehicles or co-investment platforms at the multilateral, national, county, or WSP levels to reduce costs (Fonseca & Pories 2017). Increased resources and political will is required to track public spending flows and understand their final destination, as well as the populations who benefits and why some are not reached (Bertomeu & Serebrisky 2018).

To achieve SDG6, information on financial flows must inform public policy to ensure that public allocation and spending is efficiently directed and targeted toward sustainable water and sanitation services.

2.4.2 Knowledge Gaps Identified

Numerous studies have been done that relate to financial sustainability and water and sanitation projects in Kenya. These include: Tifow (2013) who studied the factors influencing

sustainability of rural water supplies in Kenya: (case of UNICEF supported rural water projects in lake Victoria south and lake Victoria north water services board regions); Lillian & Mutiso (2019), looked at the determinants of sustainability of water projects at Machakos county in Kenya; Omeri (2015), who studied the factors influencing financial sustainability of non-governmental organizations: a survey of NGOs in Nakuru county, Kenya; Milelu (2018) who determined the factors affecting financial sustainability for non-governmental organisations in Nairobi, Kenya; and Kanyanya (2014) established the factors influencing sustainability of community water projects in Shianda division, Kakamega county - Kenya. However, the gap is seen in that none of these studies done in Kenya have looked at the aspect of sustainable finance for water and sanitation from the financing aspect rather they focus on operational sustainability of the projects after they have been financed. In addition, Stephen (2021) examined the influence of blended finance options on water and sanitation project investments. Her research examined the impact of blended finance techniques on project investments in Kenya's water and sanitation sector, focusing on one of the sector's sustainable financing mechanisms as a stepping stone to commercial financing.

Thus, this study sought to fill this gap by addressing the sustainable finance mechanisms for the sector as a prerequisite to financial sustainability of the sector.

Table 2. 1: Summary of Knowledge Gaps

Author	Topic	Methodology	Findings	Research gaps	Focus of the Study
Tifow (2013)	Factors influencing sustainability of rural water supplies in Kenya: (case of UNICEF supported rural water projects in Lake Victoria south and Lake Victoria north water services board regions)	Descriptive research design	On the extent of sustainability of the facilities, all the household respondents responded in the affirmative, while 96% of the WASH committee respondents had a similar observation, with only 4% of the water, sanitation and hygiene (WASH) committee respondents indicating that the water supplies were not sustainable.	The research did not focus on the sustainable financing of the water and sanitation sector	The study focuses on an investigation of the challenges in sustainable finance for the water and sanitation sector.
Lillian and Mutiso (2019)	Determinants of sustainability of water projects at Machakos county in Kenya	A descriptive research design was adopted	The study concluded that project management capacity had the greatest determinant of sustainability of water projects in Machakos County, followed by resource support, then monitoring while government	The variables chosen for this research were not similar to the ones in the current research	The study focuses on an investigation of the challenges in sustainable finance for the water and sanitation sector.

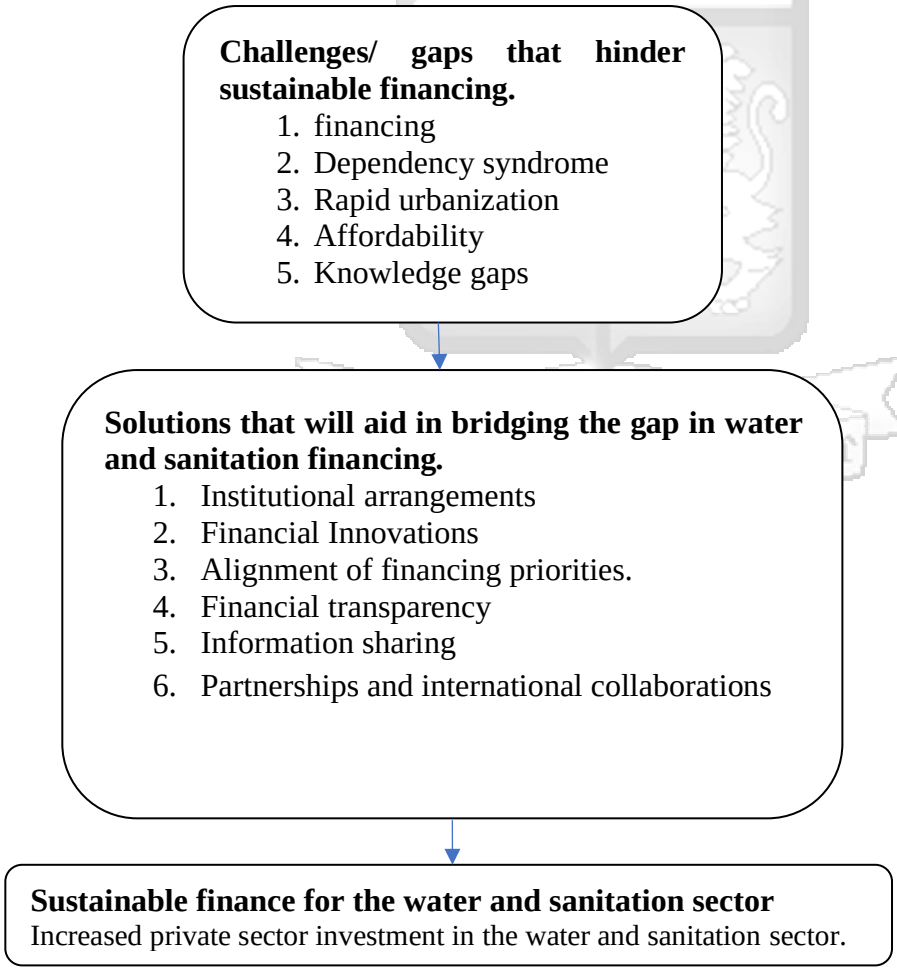
			policy had the least determinant of sustainability of water projects in Machakos County.		
Omeri (2015)	factors influencing financial sustainability of non-governmental organizations: a survey of NGOs in Nakuru county, Kenya	Descriptive survey research design	The findings revealed that diversifying sources of funds ($r = 0.787$, $\alpha = 0.05$); Competence levels of the staff ($r = 0.478$, $\alpha = 0.05$) and Strategic financial planning ($r = 0.435$, $\alpha = 0.05$) had significant effects on financial sustainability of NGOs. The results indicated that the competence level of the NGOs' personnel in charge of the projects was the most important factor.	Financial planning was funded to have the least effect on financial sustainability	The study focuses on an investigation of the challenges in sustainable finance for the water and sanitation sector.
Milelu (2018)	Factors affecting financial sustainability for non-governmental	descriptive research design	The study further concluded that financial management systems played a critical role in the financial sustainability of NGOs located in Nairobi Kenya	This study is limited to non-governmental organisations only	The study focuses on an investigation of the challenges in sustainable finance for

	organisations in Nairobi, Kenya		as evidenced by the assertion that the organizations had proper financial policies that guided how they managed their funds.		the water and sanitation sector.
Kanyanya (2014)	Factors influencing sustainability of community water projects in Shianda division, Kakamega county - Kenya	Descriptive survey	The findings further revealed the need for project initiators: to involve CMs at all levels of the project cycle as this will build ownership of the project,	The research investigated community funded water projects	The study focuses on an investigation of the challenges in sustainable finance for the water and sanitation sector.
Stephen (2021)	Influence of blended finance options on water and sanitation project investments	Descriptive survey research design	The research is ongoing	The research is focusing on only one sustainable financing mechanism, i.e., blended finance	The research focuses on examining the impact of blended finance techniques on project investments in Kenya's water and sanitation sector

2.5 The Conceptual Framework

The conceptual framework provided the structural relationship between the different variables forming the basis of the study. This study sought to comprehend the issues faced in the water and sanitation sector's sustainable finance as a prelude to developing solutions that would lead to the sector's sustainable finance. This was based on the prelude that understanding the challenges inherent in the sustainable financing for water and sanitation would support in coming up with solutions for the same thus enhancing the availability of sustainable finance solution for water and sanitation. The input from the interviews was interpreted and understood using content analysis. The same was also utilized to find correlations and patterns in the input obtained on the challenges and solutions in sustainable finance for water and sanitation as revealed in the interviews.

Figure 2.5 The Conceptual Framework



Source: Authors own

CHAPTER THREE

3.0 RESEARCH METHODOLOGY

3.1 Introduction

The chapter outlined the research methodology adopted for the study. It contains the paradigm, research design, target population, which in this case was the institutional players in water and sanitation, sample size and sampling procedure, instruments for collection of data, validity and reliability of instruments, procedures of data collection and data analysis techniques, ethical considerations and operationalization of the variables.

3.2 Research Philosophy

A research philosophy is belief by the researcher about the manner in which information on a phenomenal issue should be collected, analysed and utilized to attain objectives of a study (Bajpai, 2011). The interpretivism research philosophy has been associated with meaning adapted based on an individual's perception or their experience of it. Being a qualitative study and the data collection being primarily interviews conducted most responses were based on their experiences and industry practice, the researcher found that the interpretivism research philosophy was most suited for this study.

3.3 Research Design

The study being qualitative research adopted an exploratory research design aimed at determining the challenges in sustainable finance in the water and sanitation sector in Kenya as a precursor of identifying and coming up with the solutions. Exploratory research designs sought to gain opinions and experiences, and this made this approach suitable for the study since the study intended to gain a richly detailed understanding of the topic based on first-hand experience.

3.4 Population and Sampling

The study population was institutional players (from 11 institutions working) in water and sanitation and a stratified and purposive sampling method was used to select a minimum of 30 respondents. These were stratified from the different institutions directly involved in the water and sanitation sector including the Ministry of Health (MOH), Ministry of Water, Sanitation, and Irrigation (MoWSI), development partners in water and sanitation and financial institutions

already focused on to water and sanitation financing. All the participants were senior and experienced in the organizations they represented which served to enrich the study through their in depth knowledge and rich perspective to the subject matter. According to Yin (2017), purposive sampling ensures that the people selected for the study have features, expertise and experience that the researcher is interested in. According to Creswell, J. W. (2003), a sample size of 30 can be sufficient in some circumstances, depending on the research design and data analysis approach. He notably states that for some types of qualitative research, such as phenomenology, grounded theory, and ethnography, where the focus is on in-depth examination and understanding of a small group of participants, a sample size of 30 can be sufficient.

The targeted sample size is as shown on Table 3.1.

Table 3.4: Sample of the Study

Target Respondents	No. of respondents
1. Ministry of Health	4
2. Ministry of Water, Sanitation, and irrigation	4
3. Development partners in water and sanitation	4
4. Investors in water and sanitation	4
5. Family Bank Ltd	2
6. Faulu Microfinance Bank	2
7. KWFT Bank	2
8. National Bank of Kenya Ltd	2
9. Sidian Bank Ltd	2
10. Bimas Microfinance	2
11. Meru Microfinance	2
Total	30

3.5 Data Collection

Data was collected using interview guides schedule and administered using an interview guide to the select sample of the study. Once the project was approved by the University academic panel, the researcher commenced the data collection process by obtaining an introduction letter from the university which was presented to each respondent to be allowed to collect the

necessary data from them. The researcher booked appointments with respondents at least three days before visiting them to administer the interview.

3.6 Data Analysis

The information gathered during the interviews was analysed using qualitative content analysis and presented in prose in the study's findings section. After the data was collected, a descriptive analysis of the respondents was done and presented in tables and graphs in chapter 4. Next, the qualitative data collected was classified into two primary thematic areas these being the challenges and solutions in the sustainable finance in the water and sanitation sector. NVIVO software was used to support the analysis after which the findings were presented in prose based on these themes and sub-themes, with the necessary conclusions drawn in relation to the study's objective of evaluating the challenges in sustainable finance in the water and sanitation sector. Further to this, key statements made by respondents during the interview were highlighted during the data presentation and discussed in chapter 4.

3.7 Research Quality

To ensure research quality, the researcher assessed both the validity and reliability of the research interview guide that was to be deployed for data collection. To assess both the validity and reliability, the interview guide was pretested on 5 respondents each representing the different clusters of respondents in the study. These five were the government through the Ministry of Health and the Ministry of Water, Sanitation and Irrigation, the development partners and the financial institutions split between the commercial banks and microfinance institutions. The interview guide was first, self and peer evaluated to ensure the questions met the study objectives and that they made sense in relation to the study. The same was further evaluated by my supervisor on its appropriateness and clarity of meaning, ascertaining it fulfilled the study objectives as part of the study proposal approval. The other measure involved obtaining opinion from a panel of experts in the field of study during the pretesting stage with as few respondents. This was to ensure the questions relevance, effectiveness and to ascertain that the constructs of the questions were appropriate, clear and could be effectively deployed to the respondents. Results from pretest of the data collection tool were excluded from the final report to avoid distorting the results as the interview guide was further finetuned at this stage.

To ensure the research instrument was reliable, the interview guide was pretested on a few select respondents during which time the interview guideline reliability was evaluated, and amendments made as required. This was then followed by the full administration of the

interviews with amendments to the interview guidelines incorporated. Yin (2017) suggests that the role of pretesting is to gain knowledge on how the interview questions would be interpreted by the respondents. Pretesting is important for testing the appropriateness of measures, to gain insight as to whether the same questions were answered consistently in the same way.

3.8 Ethical Consideration

The researcher assured the respondents of the confidentiality of the information given and the non-disclosure of their identity. The researcher first sought clearance from the university to conduct the study. This was then followed by getting an ethical approval from the Strathmore University Institutional Scientific and Ethical Review Committee (SU-ISERC) and the National Commission for Science, Technology, and Innovation (NACOSTI). The researcher in the process of collecting data sought informed consent, ensuring the respondents did it willingly and assured them of utmost confidentiality.

CHAPTER 4

4.0 PRESENTATION OF FINDINGS

4.1 Introduction

This chapter aimed to focus on the presentation of the findings from the interviews conducted. The chapter respondents' feedback which was analyzed using content anallysis as the qualitative technique was used for the study.

4.2 Response Rate

The study aimed at interviewing 30 respondents organized clustered into 4 main sectors these being government institutions i.e. The Ministry of Health (MoH) and the Ministry of Water, Sanitation and Irrigation (MoWSI), development partners and four financial institutions involved in WASH financing. The desired response rate of 100% was reached

The table 4.2.1 below shows the response rate.

Target Respondents	No. of respondents
12. Ministry of Health	4
13. Ministry of Water, Sanitation, and irrigation	4
14. Development partners in water and sanitation	4
15. Investors in water and sanitation	4
16. Family Bank Ltd	2
17. Faulu Microfinance Bank	2
18. KWFT Bank	2
19. National Bank of Kenya Ltd	2
20. Sidian Bank Ltd	2
21. Bimas Microfinance	2
22. Meru Microfinance	2
Total	30

As shown on the table, the respondents were purposefully targeted, these being sector practitioners with extensive WASH and WASH financing expertise and experience, this being a major validation factor for the data analysis.

4.3 Participants Analysis

From the participants interviewed, 40% of the participants were WASH sector practitioners these being the Ministry of Health, Ministry of Water, sanitation and Irrigation, and Development partners in the sector. The remaining 60% were financial sector practitioners who were a mix between commercial banks and microfinance institutions. Due to the research's emphasis on finance, the number from the financial industry was greater. Of the seven financial institutions that were interviewed, 3 were commercial banks while 4 were microfinance institutions. For this study, no SACCO as interviewed.

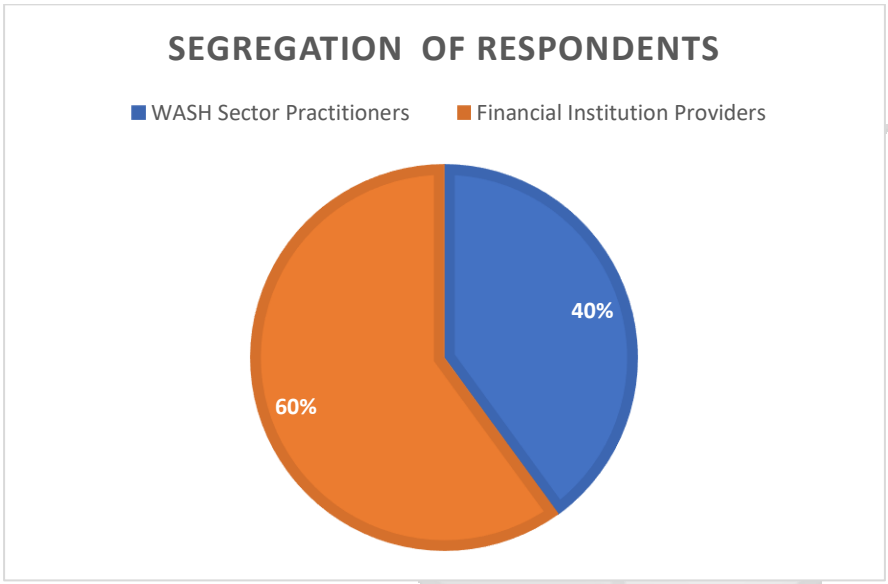


Figure 4.3: chart showing segregation of respondents.

Of the respondents, the WASH practitioners had direct mandate in WASH implementation activities including policy oversight for the Ministry of Health and the Ministry of Water, sanitation and Hygiene practitioners, with their experience in the sector spanning between 14 to 30 years' sector experience. This demonstrates that they have a high level of understanding and influence over sector trends, which increases the accuracy of their responses for this study. The respondents from the financial sector ranged in experience from 8 to 24 years, with 40% of them holding senior management positions within their organizations while the remaining 60% were middle management, providing an interface between their organizations and clients.

The diversity of respondents was instrumental in providing diverse information that not only looks into the financial institution perspective of sustainable finance for the WASH sector in Kenya but also insights based on their experiences during client engagements. Practitioners in the WASH industry and the finance sector who were interviewed both contributed greatly to a

thorough understanding of the gaps and potential solutions for sustainable finance for WASH based on their first-hand experiences in the sectors.

4.4 Thematic Analysis

Information collected from the study sought to gain experiences and opinions of sector practitioners from both the WASH and financial sector and thus thematic analysis was employed to analyse the information sets received. The table below provides an overview of the themes analysed and further expounded on based on the conceptual framework of the study and the interviews conducted.

Table 4.4.1 Showing Thematic Analysis Done

Theme	Sub-Theme
Challenges that hinder sustainable financing.	1. Lack of financing 2. Dependency syndrome 3. Rapid urbanization 4. Affordability 5. Knowledge gaps
Solutions that will aid in bridging the gap in water and sanitation financing.	1. Institutional arrangements 2. Financial innovations 3. Alignment of financing priorities. 4. Financial transparency and information sharing 5. Sectoral transformation 6. Partnerships and international collaborations

4.5 Challenges/ gaps that hinder sustainable financing.

The first objective of the study examined the challenges facing sustainable financing in water and sanitation sector in Kenya. Feedback from the respondents resulted to the following analysis.

4.5.1 Lack of Financing

One of the biggest challenges in the sustainable finance for water and sanitation is the lack of financing. The financing gaps due to limited fiscal resources, weak capital markets, and high

levels of debt. Financing came out as a major gap among all the respondents interviewed. Government officials interviewed brought out the fact that water and sanitation remains a public good meaning that it should be predominantly funded from the government budget. However, government has competing demands and thus the funding allocation for the sector remains low. One respondent was quick to highlight the numerous strikes that health workers undertake as a result of delays with their salaries.

Availability of finance specific for the WASH sector remained a challenge from both the public sector and the private sector. From the public sector, the government officials of the two key line ministries interviewed feedback can be summarised that budgetary allocations for water and sanitation have remained low in the country compared to the funding requirements for the sector.

In line with feedback given by the Ministry officials, the sector needs earmarked for sector prioritization and with budgeting, the allocations increased as the overreliance on donor support is not sustainable.

One Ministry official is quoted saying:

> *"We appreciate the support we receive through the donor community and development partners as this has especially helped to support access to safe water and sanitation in rural areas in Kenya which have high needs and yet receive minimal to zero infrastructure support from the government kitty."*

A different respondent representing the development agencies indicated that:

> *"Since Kenya became a middle-income country, the funding we are receiving for the water and sanitation sector has been on a steep decline. We have to defend proposals to support the sector 10 time harder than we used to do and even with that we are receiving minimal support budgetary wise. This is a clear indicator that the country and the sector needs to explore more suitable financing mechanisms as the sector financial needs are on the rise while available public funds and donor funds are on a decline."*

A second interviewee from the Ministry of Health indicated that:

> *"As a Ministry to execute our mandate in water and sanitation, we rely heavily on donor funding to drive our water and sanitation mandate as funding from government has its*

limitations. As a person I understand this is not a sustainable way of financing the sector especially as we have seen a significant decline in the available funding over the last 5 years. Further to this, population increase, and other factors are continuously reducing the per unit cost available for the sector as compared to what needs to be done to enhance water and sanitation in Kenya".

This feedback is a clear indication that as much as water and sanitation financing needs should be driven through the government, funding limitations make this a challenge.

4.5.2 Dependency syndrome

Responses received depicted there is high dependency within the sector by all stakeholders involved. From the WASH practitioners interviewed, it emerged that there exists national and county budgetary constraints as the WASH sector is underfunded.
One responded categorically stated:

"We are forced to lobby for donor funding and development partners support to facilitate our activities on the ground as funding from the national and county kittys is inadequate. Development partners have been supportive but anytime their support reduces or runs out, our work is also negatively impacted."

This comment was in relation to sensitization and support supervision work that is done by public health officers in the counties to check on the WASH status of the households within the counties they operate in. Further to this, the Ministry of Water highlighted that the main challenge they face is that most of the infrastructure available for water and sanitation is very old and can no longer meet the requirements of the number of people it serves. This means that their financing requirements supersedes the budget allocations they receive and the income they derive from water and sewer connections, since they need to invest in replacement and expansion of the available water and sanitation infrastructure if it is to serve the people adequately and efficiently.

For the financial institutions interviewed, it was interesting to note between the years 2012 to 2019 major strides had been made in the interviewed financial institutions using their own capital to provide financial solutions within the WASH sector. The tides however shifted 2020 with the COVID 19 pandemic where the same the financial institutions shifted to requesting for

guarantee funds and other funding lines to support their prioritization of WASH financial products from the donor community. Given the sector advancements that had taken place prior to 2020, sector deterioration can be said to have taken place. Follow up questions on this resulted to insights that with Covid 19, the financial sector had experienced its clients experiencing job losses, income reductions, business closures thereby impacting negatively on the bankability and ability to repay loans. With this the financial sector request for funding was mainly to buffer themselves against any eventualities on non-performance of loans specific to water and sanitation.

It is however debatable out of the responses received from one financial institution respondent who is quoted to have said:

> *"The development sector has been pushing for us to issue loans to the water and sanitation sector from our own funding sources which are relatively costly and yet the WASH sector is highly risky was its difficult and not always viable to collateralise water and sanitation infrastructure. This means that the risk return profile for WASH loans is low. For us to give priority to the WASH financial products, we as financial institutions would need to lower the risk and with that external low-cost deposits are a quick solution".*

A different respondent from the financial institutions further indicated that:

> *"Development organizations receive funding to support water and sanitation sector and it would be helpful for them to channel some of this funding to the financial sector to promote water and sanitation lending in the financial sector. Most of the time the financial sector that is expected to make the difference is the one that remains least supported"*

This kind of response brings out some of the challenges the sector faces because whereas the financial sector is being looked at as a vehicle to catalyse the financial requirements of the WASH sector, the financiers are also looking at how they could share the cake if funding received by the development sector.

A county public health officer (CPHO) interviewed provided positive feedback from the ground as he indicated that they were seeing a shift of dependence from the ground. This was mainly

attributed to how communication was being packaged to the communities. Where community members see an opportunity to get free things, they are quick to go with them and where the communication brings out the need for them to explore avenues where they can raise investments themselves, then they also look into that. From the CPHO's perspective, communication packaging is the key to mitigating the dependency syndrome that has been prevalent in the past.

4.5.3 Rapid urbanization

In seeking for validation of the contribution of rapid urbanization to the shortcomings in sustainable finance of WASH, it emerged that the rate of population growth is higher as compared to the rate of improving or enhancing the available infrastructure for the WASH sector. With urbanization however, the challenge lies a lot more on government and government bodies to come up with sustainable financing mechanisms to finance the water and sanitation. A case in point that emerged during the interviews was in Nakuru county where it would cost a household or a tenant close to Ksh. 100,000 to connect to the sewer network. This cost is just for the connection and has not taken into consideration the costs of putting up the WASH systems including water tanks, piping at the household level, toilet construction and the related toilet components. For a low-income household, this cost can be quite prohibitive.

Challenges with the sector related to WASH were worse in informal settlements as housing was not well organized and infrastructure considerations for water and sanitation have been overtaken by the massive population growth in those areas. Challenges related to rapid urbanization emerged also because of greed by landlords who also put-up houses without taking into consideration water and sanitation requirements. The unorganized infrastructure meant to deal with the rapid urbanization was straining existing infrastructure while at the same time blatantly ignoring the capacity and access to existing WASH infrastructure.

4.5.4 Affordability

The various respondents interviewed identified affordability as a major impediment to sustainable finance. According to feedback received from the respondents, affordability to financing on water and sanitation was looked at mainly from the perspective of accessing commercial money from Kenya financial institutions to invest in water and/ or sanitation. For a start, loans to water and sanitation mainly focus on infrastructure financing of various water

and sanitation infrastructure most of which are not income generating or even if they are the capital costs are high compared to the amount of time required for the returns to be made on the same. For example, loans to water at the household level would include water connections, water storage facilities such as water tanks, water purification systems while for sanitation these would include things like toilets construction, sewer connections and toilet emptying services.

For entrepreneurs this would include capital to either set up businesses in water and sanitation such as water treatment facilities, decentralised fecal sludge treatment services, waste recycling services and vendor services for various water and sanitation products and services. As the household level, loans sought for are normally to improve lives therefore do not have direct income generating streams. This ideally means that the households must repay the loans using a different source of income which is mostly already earmarked for other expenses. The status is made worse by the fact that the cost of living has been on the rise with inflation in Kenya constantly on the rise.

All respondents concurred that the cost of living in Kenya has hampered institutional, development partner, and financial institution investments in the water and sanitation sector. For example, a recurring theme in interviews with development partners was that their operating costs had increased significantly due to price increases, resulting in budget deficits, which meant they had to reduce their interventions with communities in enhancing community sensitization on water and sanitation.

One of the respondents interviewed from the financial institutions indicated that competing financial obligations at the household level was big challenge even from the other financial products. At some point he indicated:

> *"The current state of economy has reduced purchasing power. Basic prices such as that of flour have gone up and a basket that was previously filled by Ksh 1000 is basically empty holding two to three items that can barely feed the family for three days. . Thus, resources are currently dedicated to pressing issues".*

This response is a clear indication of how much cash constrained people are thus affecting affordability of not only basic items but other areas of need like water and sanitation.

Specific to the WASH sector, one respondent indicated that: *In our country we are challenged in accessing financing for development in water and sanitation sector. This is attributed to high cost of finance and unstable economic environment."* This comment affirms that the country's cost of living has negatively impacted the affordability for people and with this financing WASH is equally negatively impacted.

4.5.5 Knowledge gaps

The financial institutions respondents interviewed brought out the fact that one of the main challenges faced by financial institutions are skewed perceptions brought on by a lack of understanding of the WASH sector. This was more apparent when examining the sanitation component of WASH because the water component is simpler for them in terms of financial product structuring and profitability.

Of the 12 respondents from the financial institutions, one of the senior persons interviewed from the banks indicated that most finance institutions are reluctant to develop sanitation related financing products and services as they perceive it too risky. He further supported these sentiments with the fact that for the financial institutions, their managements are normally of the opinion that they focus on more straightforward, easy to collateralise and easy to appraise loans such as asset finance, salary loans and the likes. The interviewee however further clarified why knowledge gaps was the main issue and explained that for instance, a salary loan may be taken to cater for a WASH need but, in their books, it shows it's a salary loan. The same was reiterated by the microfinance banks interviewed who shared that they had realised that their members were taking loans under the group-based lending and put the money into use on improving their WASH status back at their homesteads. What this situation was doing is that the financial institution does not get the most accurate record of loans and misses out on a more important aspect of reporting the impact the loans they are issuing is making to the communities and clients they serve.

Responses from MoH and MoWSI officials further showed that WASH practitioners have had relatively little interaction with financial institutions about WASH issues. One of the respondents stated that, despite the fact that two Kenyan banks have been active in WASH financing over the last decade, their participation in WASH sector stakeholder meetings and events has been minimal, contributing to information asymmetry between the two sectors.

Furthermore, the respondent stated that the financial sector does not take the time to educate WASH stakeholders on sector developments that may have an impact on collaboration between the two sectors. For example, one respondent stated:

> *"We only recently learned that one of Kenya's major banks has been holding a WASH guarantee fund for the last three years, but the same bank has not been offering loans to the WASH sector because they lack the modalities to execute the fund".*

This kind of situation shows that there is serious misalignment between the contract bearers, that is, the guarantee issuer and the banks i.e. the guarantee executor bringing out the fact sector knowledge gaps are disadvantaging the growth of sustainable finance to the sector.
Further to this, one of the development partner respondents indicated that:

> *"Although there are several financial institutions in Kenya, it is not clear on financing opportunities for water and sanitation investment. Further, it is clear despite of the financial institutions having loan facilities, they are not clear on procedures and modalities to be adopted while seeking for financial need".*

A respondent from the one of the financial institutions highlighted that: "*Leadership in banking is still on the brick and mortar- it remains quite traditional".* With this he explained that banks still have a preference of the traditional loans products they have always had such as the asset finance and are afraid of expanding the scope of the structures they have set for the long-standing products they offer.

The other major gap that was brought out during the interviews with regards to knowledge gaps is the fact that most financial institutions providing loans towards WASH look at the products in such a basic way and have failed to expand the scope of WASH loans for them to be all inclusive. Here we see that majority of financial institutions that claim to do WASH financing only focus on products such as water tanks and water filters. In relation to thus, one of the development partners interviewed shared that:

> *"This is okay but there is need for the financiers to understand the bigger scope of WASH that spans from the construction of water and sanitation infrastructure, their maintenance through to reuse and processes that take place such as the treatment of waste and recycling the same to biogas, briquettes and fertilizer."*

Sensitization on the expanded scope of WASH and it link to other sectors therefore remains untapped and yet this would widen the scope of the financial products on WASH and bring out the different business opportunities that would further make the sector more profitable even for the financiers. This argument was further supported by the confirmation by one of the financial institutions that has been successful in WASH financing that shared that their success in WASH financing was a s result of expanding their scope of WASH financing to cover WASH entrepreneurs thereby tapping into the WASH SME market.

4.6 Solutions in bridging the gap in water and sanitation financing.

The second objective of the study sought to examine solutions that would aid in bridging the gap in sustainable finance for water and sanitation. Based on the conceptual framework and the interview guide, solutions were broadly classified into institutional arrangements, blended finance, align financial institution appetite to water and sanitation financing priorities, financial transparency and information sharing, sectoral transformations and partnership and international collaborations.

4.6.1 Institutional arrangements

Institutional arrangements emerged as a critical requirement for improving the sector's sustainable finance. According to one financial sector respondent, institutional arrangements were critical in providing guiding principles for good governance. Good governance issues are primarily prevalent with water utilities, interfering with their credibility to receive commercial finance to support their WASH investments. For example, one respondent shared that a water utility in the country was about to receive a significant loan amount to expand water connections and the sewer line in its county of operation, but due to governance issues in which officials could not agree on the execution of the loan amount, the loan was yet to be disbursed 7 months after its approval.

Another respondent from the Ministry of Water, Sanitation, and Hygiene emphasized that with expanded infrastructure, there would be room for additional connections, which means additional revenue that would not only support loan repayment but also future infrastructure maintenance and expansion. One respondent plainly described the issue as *"Shareholders and management supremacy battles"* where they all want to have a say in the use of the money and

also want their preferred people and companies to acquire contracts without going through transparent tender processes.

Based on Al'Afghani (2019), the legal and institutional arrangements for community-based water and sanitation delivery in Indonesia, found four key issues: (i) absence of legal personality, (ii) lack of asset security, (iii) lack of financial security, and (iv) lack of a service. Their viewpoint was that these shortcomings could have implications not only in the long-term use of the infrastructure but also in terms of human rights. Accordingly, SWA 2017, posits that political leadership and support, the nature and extent of decentralization, fiscal policy, human resource management, public procurement, public finance management, anti-corruption measures, social norms relating to power relations and decision-making, and other context-specific factors such as quality assurance, equity, and sustainability, examples normally outside the WASH sector need to be institutionalised within the WASH sector as a means of attracting and regulating sustainable finance in it. The SWA 2017 confirms that achieving universal coverage will require more than just infrastructure funding. Other costs, such as the cost of operations and maintenance, the cost of capital, rehabilitation, taxes, and the costs of expansion and improvement, must be assessed in order for a service to be not only sustained but also expanded and improved to meet demand via sustainable finance. One of the respondents highlighted that:

> "*Institutional arrangements would provide clarity as to who the duty bearer for receipt of finances especially commercial money would be. Further to this, institutional arrangements provide for succession such that even if management changes, the office bearer bears that burden to ensure if it is loans they are repaid*.".

With such structures, repayment for any loans would be taken with seriousness as the lack of it would impact negatively on the performance of whosever is the office holders whether or not they participated in the application and issuance of a loan for the infrastructure within their jurisdiction.

4.6.2 Encourage Innovation in Financing

From the interviews conducted, additional information resulting from the 6 of the 30 interviewees was that financial innovations would support sustainable finance into the water and sanitation sector. One of the respondents indicated that leveraging on a mobile money platform like Safaricom's Mpesa would aid in reaching the masses especially when looking like small water and sanitation loans at the household level. He stated:

"Considering how basic a water and sanitation loan can be, like construction of a toilet, purchase of a water filter, payment for water connections, a partnership with Safaricom's Mshwari would support efficient access for these small ticket size loans for water and sanitation. We need to explore existing financial mechanisms that work for other sectors and integrate them to water and sanitation if we are to increase access to sustainable finance for the sector".

Views as this are a sign that to reach the mass market and ensure access to sustainable finance, the water and sanitation sector and the finance sector need to explore innovative mechanisms through which to increase access to sustainable finance.

Another respondent interviewed was supportive innovations for sustainable finance in water and sanitation and shared that with innovation, scale can be achieved as innovation will explore the efficiency with which funds are deployed to the sector and facilitate close monitoring and reporting of the financial flows into the water and sanitation sector. From the interviewees, it was clear that all respondents were in agreement that innovation would support sustainable finance as it would encourage pooling of funds from unusual sources, deployment of these funds through innovative mechanism and structures and even put in place repayment incentives to encourage good repayment of the water and sanitation loans. Such innovations as these are seen with the Actiam Sanitation, Water Impact Fund (SWIF) that is under development under the FINISH Mondial programme. With the SWIF, pension funds from Netherlands will be invested into the water and sanitation sector in the FINISH Mondial countries through local commercial banks for both a social return and a reasonable financial return. The social return is mainly looking into the impact created in the communities in terms of people reached, healthier communities resulting from improved water and sanitation and economically empowered people through water and sanitation businesses, while the financial return will be on the interest payable for the fund as it is commercial money. Innovation in this case is also out of the fact that with proper repayment of the loans by the clients, the financial institutions will receive an interest rate discount. An independent verifier will be deployed to establish the repayment rates for the financial institution to qualify for the interest rate discount. This is a clear example of how innovation can be deployed to the sector to not only increase liquidity but also encourage proper deployment of the fund to ensure high levels of repayment are encouraged.

A strong solution that was brought out by all respondents was the need for blended finance approaches for the sector. All respondents agreed that this was the one of the best solutions for sustainable finance of WASH and mainly because the different variations in terms of the available funding and the funding structures would mean that everyone would have a place where their WASH financial needs could be met. Blended finance looks into maximising traditional sources of funding while incorporating innovative and new funding mechanisms. Traditional finance sources especially for WASH are tariffs, taxes and transfers. Expanding this scope using blended finance means looking into more commercial means of attracting capital into WASH financing. One of the examples brough out clearly by one of the respondents is venturing into the capital markets for water and sanitation, i.e., issuance of a water and sanitation bond. This would call for different investors putting int their funds for water and sanitation financing and getting a commercial return for the same.

To integrate blended finance, six of the financial institutions respondent shared and agreed that there is need for the financial sector to understand barriers that prohibit blended financing approaches and the mitigation strategies that could be incorporated. One of the respondents here shared that for their institutions, funds received to support the water and sanitation sector have a soft grant element that is used to train staff in water and sanitation to enhance their knowledge of the sector. This brings out the fact that the blended finance can be a combination of both public and private funding or grant and commercial money to catalyse the water and sanitation and finance sectors.

Other mechanisms used to enhance financial sustainability through blended finance is the use of credit guarantees (funded or non-funded), revolving funds specially to catalyse small financial institutions to venture into water and sanitation financing or even issuance of incentives for loans issued for the sector. A microfinance respondent interviewed share that:

> *"As a microfinance institution we have been sceptical to venture fully into water and sanitation financing as we see the risk is for non-performing loans is high. We were however offered a back ended guarantee by one of the development partners in case the clients genuinely were unable to repay and this encouraged us to venture into the sector."*

This respondent further shared that:

> *"We are closely monitoring our processes, clients and the loans issued for water and sanitation to measure their profitability, their actual risks and returns and further to*

this the impact they create. We envisage that within a year we will be in a position to determine whether it is a sector we can fully venture into even without external support."

Impact investors interviewed indicated that blended finance was one of their avenues they use to raise funds for investments. One of them shared that the country needs to explore unusual sources of funds to finance the sector. One of the sources that has worked well in other countries and is underutilised in Kenya is the use of pension funds. The other option suggested was to build mutual funds and trusts that invest specifically in the development sector such as in water and sanitation and issuing not only a financial return but also a social return.

With blended finance, the responded were in agreement that the solution in pooling additional funds to the sector meant reducing the reliance on traditional sources of funding and thinking innovatively to bring in other funding sources.

4.6.3 Alignment of financing priorities

According to development organizations interviewed, the financial sector needs to earmark the WASH sector as a priority sector as has been seen with the renewable sector in the recent past. The Central Bank of Kenya in its press release dated 15th October announced the issuance of Guidance on Climate-Related Risk Management (Guidance) to commercial banks and mortgage finance companies. The Guidance is intended to enable banks integrate the opportunities and risks arising from climate change in their governance structure, strategy and risk management frameworks. Further, it will guide these institutions in disclosing climate-related information to their stakeholders. This mandated financial institutions to prioritise the climate change and renewable energy sector initiative. Considering the health impacts and economic development opportunities in water and sanitation, the water and sanitation sector would also benefit from such guidelines and requirements.

The sustainable financing markets need to mirror the sustainable developments in the real economy. Further to the reporting mandate by the Central Bank of Kenya, sustainable finance initiatives should ensure that the Economic, social and governance sustainability requirements are adhered to. With these basics like ensuring all financing initiatives are protective of the environment are necessary. A development partner respondent highlighted:

"Financial institutions need to evaluate the clients further to ensure that their businesses and the initiatives financed are protective of the environment, For instance,

financing a charcoal burner or financing a waste disposal company that disposes of the waste collected into rivers. Both businesses are profitable but degrade the environment in the process of carrying out their business."

The respondents' sentiments ideally submit that there should be alignment between financing priorities such as making profit and that of protecting the environment and other sustainability indicators such as governance and social indicators.

Financing priorities were further explained by the financial sector respondents who indicated that for WASH to thrive, it needs to be aligned with the structures within which the financial institutions structure their financial products. For instance, majority of loans are issued either to individual persons, groups, companies or SMEs. One respondent clarified that successful and effective uptake, any new developed water and sanitation products need to be aligned to their existing delivery mechanisms. The clarify this point, the respondent shared that:

"One of the min mistakes development partners looking into working with financial institutions make is attempting to replicate structures working with other financial institutions forgetting that what works for one may not necessarily work for another."

He shared that to him alignment means integrating with existing structures, existing delivery mechanisms and existing terms and conditions. This kind of thinking was shared by all financial institution respondents who shared on the fact that congruence in their modus operandi is what would make financing the water and sanitation sector sustainable as they would not be distorting their market in any way.

4.6.4 Financial transparency and Information Sharing

On information sharing, respondents unanimously agreed that to enhance sustainable finance in the WASH sector, transparency and information sharing was critical.

The respondents in different ways outlined that water and sanitation and financial sector players need regular round table discussions to deliberate and come up with strategies that would facilitate improvement in cross sector knowledge. One of the development partners interviewed in their response stated that: *"Increased understanding of the importance of integrating water and sanitation with the financial sector stakeholders will be a critical factor in increasing sustainable finance into the sector".* Further clarification by the respondent revealed that for them the main gap they see with the financial sector is the lack of knowledge on the role of the WASH sector in the economic development of the country and the ensuing financial benefits

that are derived from improved, safely managed and sustainable water and sanitation services. The opposite was also the case the case with the financial institution respondents unanimously bringing out the fact that they feel that the other water and sanitation players downplay the role the financiers could play in enhancing water and sanitation uptake in the country.

To mitigate these information asymmetries, regular consultations, review meetings and exploratory meetings were suggested as a solution where the two stakeholders would take time to understand each other. Further to this, 3 financial institution respondents indicated that it information sharing and transparency would be instrumental for novel programming for the water and sanitation sector incorporating sustainable finance from the onset.

A case in point that was brought out was the Sanitation and Hygiene Fund (SHF) that had evolved from the Water Supply and Sanitation Collaborative Council (WSSCC), which was a United Nations hosted organization contributing to Sustainable Development Goal 6, Target 6.2 on sanitation and hygiene , according to the UN Water, WSSCC transformed to SHF which is an investment mechanism with an investment model designed to deliver sustainable impact at scale. Worth noting here and as clarified by the water and sanitation practitioners interviewed was that the SHF was geared towards providing catalytic funding in the water and sanitation sector. In layman terms, the fund aims to attract private sector funding into the water and sanitation sector. This kind of investment calls for transparency on the risk return profiles of water and sanitation financing and open information sharing between the different stakeholders.

4.6.5 Sectoral Transformation

From the interviews conducted, the focus on the circular economy came out as a major solution to the challenges in the sustainable finance of water and sanitation. The circular economy according to Geissdoerfer, M. et al (2017) is defined as a regenerative system in which resource input and waste, emission, and energy leakage are minimised by slowing, closing, and narrowing material and energy loops and that can be achieved through long-lasting design, maintenance, repair, reuse, remanufacturing, refurbishing, and recycling. With sectoral transformation, the sustainable finance of water and sanitation should not only be evaluated as stand-alone WASH but evaluated in relation to other related sectors such as agriculture, renewable energy, climate action and climate resilience interventions.

One of the development partners' representatives stated that they were shifting their WASH programming to consider WASH in relation to other sectors and development initiatives in order to provide holistic programming. The respondent, whose organization also has

intervention in semi-arid areas of Kenya where the people are predominantly pastoralists, shared that their organization, in addition to supporting access to household water and sanitation, was also supporting pastoralists with access to water for irrigation to encourage people to venture into agriculture not only for their own consumption but also for the consumption of their animals. According to the respondent, this approach would play a role in encouraging financial institutions to target these communities for their financial products. This is echoed by a financial institution respondent, who stated that the problem they face in some of the areas that have a high level of migration, making support of financial products in water and sanitation for those areas risky because people tend to move. He reiterated that financing in water and sanitation that touches on not only water and sanitation but also agriculture and energy provides an opportunity to improve the livelihood of the people wholesomely and thus mitigating the challenges they face in the high client risk profile due to migration, making the client attractive and suitable for the financial institution to support.

Intersectoral dialogue for sector transformation was also emphasized strongly in the interviews. Respondents from the different groupings were in agreement that different sectors need to talk to each other and find commonalities between them so that financing solutions can be designed in a crosscutting mechanism where the solution not only benefits one sector but multiple sectors. For instance, respondents agreed that water and sanitation matters touch on all areas of peoples livelihoods including the education of their children therefore other sectors such as education should also be involved. In short from the responses received, WASH affects people's lives in every way even on basics like good health as a result of access to clean and reliable WASH facilities.

A respondent from the Ministry of Health reiterated that: *"The highest cause of death for children under 5 years old in Kenya is diarhoea which is always as a result of poor sanitation."* This therefore makes water and sanitation a priority area for public health matter. A financial institution respondent indicated that their institution has a mandate of improving the livelihoods of its people and thus this kind of approach for them is a priority and they can do it with their own internal funds as they believe clients with improved livelihoods are better clients who will also repay their loans well.

4.6.6 Partnerships and international collaborations

Partnerships are instrumental in sustainable finance as they bring new ideas, new thinking into the financing spectrum. Different kinds of partners have different mandate as per their

organizational needs and thus integrating their different operational modes into finance is instrumental in providing financing solutions that can be marked as sustainable. A case in point is where development partners within a partnership and/ or collaboration provide technical assistance to the financiers for them to understand the water and sanitation sector and its players. A development organization respondent interviewed was categorical in explaining that partnerships between their organization and financial partners have enabled him to expand his thinking when it comes to financing sanitation. For instance, he asked:

> *"Just thinking, what if together with the financial institutions developed a water and sanitation loan product that is structured like a mortgage?".*

Further clarifications to this question was clarified with an example of: "What if a toilet loan was structured like a small affordable mortgage but this time for a sanitation facility?" This is an interesting thought process but it calls for partnerships and collaborations as the different stakeholders between the loan being issued, executed and repaid would have to be part of the loan from the time it is applied for to the time it is fully paid for. Partnerships and collaborations help sustainable finance to not only bring in additional funds but also structure the facilities in such an innovative way that they are attractive.

These views are further supported by the speech issued by the Managing Director of Aqua for All, Ms. Josien Sluijs, who during the launch of the partnership between Aqua for All and Kenya's Family Bank Limited said that:

> *"We consider Kenya a promising market for water and sanitation investments. However, we need to accelerate progress towards achieving SDG 6. This requires supporting scalable solutions and facilitating access to capital by unlocking private investments. Our partnership with Family Bank is an important step towards providing sustainable access to safe water and proper sanitation nationwide. By supporting community-based service providers, we can contribute to making the water and sanitation sector in Kenya more sustainable and inclusive."*

4.7 Chapter Summary

The chapter focused on analysing the responses received from the 30 respondents in relation to the challenges and the solutions in the sustainable finance for the water, sanitation and hygiene sector in Kenya. The next chapter will focus on discussions based on these findings.

CHAPTER FIVE

5.0 DISCUSSIONS

5.1 Introduction

The chapter presents the discussions of the study findings as per the study objectives to bring out a clear comprehension of the challenges in the sustainable finance for water and sanitation.

5.2 Discussions of the Findings

The study was anchored on the need to respond to empirical, conceptual, methodological and contextual gaps in the sustainable finance in water and sanitation. From empirical examination the study noted that there were contextual gaps since several studies were undertaken in developed economies whose social economic characteristics may have had effect on state of water and sanitation as compared to Kenya context. Conceptually, this study considered contribution of challenges and solutions in sustainable finance in water and sanitation sector inn Kenya.

5.2.1 Challenges that hinder sustainable financing.

The first objective examined the challenges associated with sustainable finance in water and sanitation in Kenya. The study documented that the sustainable finance of water and sanitation was negatively impacted by inadequate financing priorities, dependency syndrome, rapid urbanization, affordability, and knowledge gaps.

There was consensus from the respondents that inadequate financing for the water and sanitation sector played a major hinderance to the financial setbacks in the sector. This was brought out well by the government official who highlighted the funding limitations the government has hindering its ability to execute its mandate in water and sanitation. The respondents' observations resonate with the observations by Savelli et al., (2019) who brought out the fact that failure of water projects in Nigeria was associated with inadequate financing. To further support the funding inadequacies for the sector, an analysis of the Kenya country budget allocation for 2022/2023 which shows that a total of Kes. 110.7 billion was allocated for the Environment protection, water and natural resources, as broken down in the table below. It is however notable that from the allocation, sanitation is still not prioritised, and we can see only sewered sanitation has been catered for in the budget and the same is still lumped up with

water. These finding confirm that the financing gaps due to limited fiscal resources, weak capital markets, and high levels of debt many developing countries face including Kenya as a major hinderance to sustainable finance for development including water and sanitation.

Table 5.2.1 showing key allocations in Kenya's budget 2022/23

Key allocations
• KES 45.9 billion to water and sewerage infrastructure development to facilitate wide access to clean and adequate water for domestic and agricultural use
• KES 16.0 billion to water resources management
• KES 9.8 billion for water storage and flood control
• KES 8.5 billion for irrigation and land reclamation and KES 2.1 billion for water harvesting and storage for irrigation.
• KES 10.2 billion for forests and water towers conservation
• KES 3.1 billion for environment management and protection
• KES 1.5 billion for the Meteorological Service Department and
• KES 7.0 billion towards wildlife conservation and management.

Respondents from the study were categorical on the country's dependency on donor funding streams to support water and sanitation financing. The sector is seen to have received consistent support from donor agencies over a long period of time creating a significant dependence on these agencies. Bak et al., (2017) called for consideration of alternative sources of financing rather than depend on 100 percent donor financing as a means of building self-reliance and exploring local funding that would contribute to sustainable finance even as the sector experiences declining external funding. An exploration of local funding would come in handy to mitigate financial risks even as the World Bank (2016a) asserted that project financing is not only limited but also hurdled by delayed disbursement.

Rapid urbanisation continues to be a problem because the development rates are not commensurate with the financial flows required to upgrade the available water and sanitation infrastructure. As cities expand, so does the demand for these services, and insufficient infrastructure and funding can result in water scarcity, pollution, and public health issues. The rate of urbanisation has been increasing at an exponential rate that has not been matched by an increase in water and sanitation facilities. This sporadic growth has exacerbated the uprising of

informal settlements whose resource planning was not guaranteed, which was aggravated further by the fact that some landlords, particularly in low-income settlements, did not prioritise investments for water and sanitation while increasing low-income housing infrastructure for rentals.

Further to rapid urbanization, lack of adequate and affordable financing for the landlords has been a contributor to low investments in water and sanitation. This is further aggravated by the fact that low-income households cannot afford the cost of safe and reliable water and sanitation services, leading to a lack of demand for these services. Government official interviewed highlighted that their engagements with landlords showed that majority consider water and sanitation a public good and thus the low investments. This is line with the arguments of by Jadoon et. Al. , (2023) who argue that mechanisms through which people achieve access to improved water and sanitation vary depending on their location in ways that affect whether these goods may be considered more public or more private. For instance, in urban areas, access to improved water and sanitation depends on being linked into a municipal water supply with water piped into dwellings. Likewise, one's toilet or outhouse needs to be linked to a sewer system. This means that more collective action and coordination among government service providers and private actors are required to provide public goods in a manner that may be harder to exclude, calling for the sustainable financing for the same. In rural areas, where centralized systems are weak, whole communities may be more easily excluded from public works projects but also highlighted that affordable financial streams to the sector would encourage them to invest in water and sanitation too as that way it would be affordable. Sustainable financing would therefore be required, as this would be a public expenditure for which the source of funds would be affordable and on concessionary terms so as to be affordable for the target market.

The positive effect of this is that the other challenge of affordability would be addressed in the process but not only looking into the needs of landlords but also general sector gaps with regards to affordability. WHO (2016) called for coordinated and planned water and sanitation services if all are to optimally access water and sanitation. This would be instrumental in the reduction of revenue leakages in the sector thus lowering the costs associated with the revenue losses. This would further enhance sector efficiency improvement, increased revenue collection from customers and public private partnership (World Bank & UNICEF, 2017), which would then have a positive impact on enhancing affordability for the sustainable finance for water and sanitation.

This information shared by the different respondents shows there is clear Intersectoral knowledge deficiencies between the WASH practitioners and the financiers despite some deliberate effort in the Kenyan market to get the two sectors to talk to each other, learn from each other and collaborate to enhance the country's WASH status. This is supported by OECD (2018), which alluded that though Kenya has inadequate infrastructure for water and sanitation resources management there are challenges associated with poor coordination between County and National government. Regarding the level of information asymmetry in water and sanitation finance there are limited regulatory framework an aspect that have detrimental effect on water and sanitation business models.

5.2.2 Solutions to Sustainable Finance for water and sanitation

The second objective examined solutions to challenges facing water and sanitation in Kenya. The study found that institutional arrangements, blended finance, aligning financial institutions appetite to water and sanitation financing priorities, financial transparency and information sharing, sectoral transformation, partnership and international collaborations. The findings are in support of GWP (2008) who alluded that water and sanitation have heterogenous framework comprising of several organizations. They include service providers, regulatory authority, local and national governments, community-based organizations and non-governmental organizations. Owing to heterogeneity of these organizations' operational frameworks, there is need for institutional arrangements to enhance efficiency through partnerships and collaborations that call for them to work together and complement their various initiatives towards sustainable finance for water and sanitation whilst at the same time pooling resources for increased efficiency. Further, this would aid in adoption of relevant sectoral reforms that would strengthen regulatory environment, governance, financial, technical, commercial and risk perception (Sanitation & Water for All, 2020). Westgate et al., (2019) argued that community participation and funds allocation have positive association with sustainable project financing. Weber and Finance (2018) posited that financial uncertainties have inverse effect on water sustainability and implementation.

Moreover, Mercadier and Brenner (2020) argued that efficiency in the water sector is only achievable if there are institutional framework, improvement in the water and sanitation sector. Regarding contribution of blended finance in water and sanitation in Kenya, the results supported UNICEF (2017) that asserted that blended finance ought to adopted to complement traditional finance models. This would bridge gap in access to water and sanitation services.

Sachs et al., (2019) argued that collaborative development approach aids in understanding of community needs and deployment of the most optimal approach while responding to water and sanitation needs. Rajesh, (2016) posits that strategic grant funding or soft loans can help unlock additional capital through innovative financing mechanisms and structures, and development partners can support the scaling up of utility access to commercial finance by integrating commercial lending into their operations. Donor cofunding can significantly reduce the perceived risk of private lenders and lower the effective cost of borrowing for utilities to affordable levels through the use of blended financing mechanisms. This would grow the role of private finance in the water sector.

Furthermore, Roaf et al., (2018) posited that financial institutions should align their financial interest to water and sanitation sector. The need for information sharing cannot be ignored if water and sanitation are achievable. Al'Afghani et al., (2019) alluded that there is need for provision of current and forecasted data on coverage, population growth, asset inventory, cost and performance data, internal and external funds available and demand versus supply gaps. Jimenez et al., (2007) supported the role of information sharing in access to government amenities though they called for improvement in quality of information sharing.

CHAPTER 6

6.0 CONCLUSIONS AND RECOMMENDATIONS

The chapter presents the study's conclusions, recommendations, and opportunities for future research based on the study's findings.

6.1 Conclusions

6.1.1 Challenges that Hinder Sustainable Financing.

The purpose of the study was to investigate the challenges that stand in the way of achieving sustainable financing for water and sanitation projects in Kenya. According to the findings of the study, issues relating to inadequate financing priorities, rapid urbanisation, knowledge gaps, dependency syndrome, and affordability are associated with sustainable financing for water and sanitation. To address these challenges, governments, development partners, and the private sector will need to coordinate their efforts to develop sustainable financing mechanisms, integrate innovation into the sector, build institutional capacity, and improve the regulatory environment while promoting stakeholder accountability. Increased accountability attracts more sustainable finance and investments into water and sanitation as a result of increased trust and enhanced credibility in the sector.

To improve Kenya's ability to secure long-term funding for its water and sanitation systems, the country must first establish and then adopt a regulatory framework that will provide guiding principles for prioritising funding for those systems. In addition, the government must step up its interventions to the point where appropriate urban planning is implemented in response to rural-urban migration. This would help to reduce the strain on the existing water and sanitation infrastructure. Since this necessitates additional funding for the sector, it is necessary to explore affordable financing solutions designed specifically for the long-term financing of water and sanitation infrastructure.

Sector harmonization will not only go a long way in enhancing efficiency but will also ensure proper utilization of available resources. This conclusion is based on the feedback received from respondents, who indicated that different development partners structure different financial solutions with financial partners who do not communicate with one another. For example, one financial institution received a guarantee fund from a development partner for WASH; the same financial institution was also lending money received from a different donor specifically for WASH; and the same financial institution had partnered with yet another partner

as well as the two preceding ones for technical assistance. The challenge here was that all these support systems were being addressed in silos rather than consolidating them and developing a single strengthened WASH financial product that incorporates all of them. There are many ongoing initiatives being piloted in the country, but the key players are working in silos, denying each other the opportunity to learning from each other while increasing efficiency.

6.1.2 Solutions in Bridging the Gap in Water and Sanitation Financing.

The second objective of the study examined solutions to challenges facing sustainable finance in water and sanitation in Kenya. The study found that to respond to challenges there is need for institutional arrangements, blended finance, alignment of institution appetite to water and financing priorities, financial transparency and information sharing, sectoral transformations and partnership and international collaborations. Thus, it can be concluded that there is need for stakeholders in the water sector to develop cohesive working relationship that would optimize achievement of international acceptable water and sanitation standards. Rather than reliance with traditional financing arrangements there is need for adoption of blended financing approaches and consideration of financial partnership with financial institutions.

Integration of WASH financing with other development finance initiatives such as those in agriculture, renewable energy and climate related initiatives would also aid to strengthen the WASH nexus while also providing a wholistic sustainable solutions that meets the environmental, social and governance (ESG) sustainability guidelines. Innovative finance mechanisms such as blended finance contributes to sustainable finance solutions by mobilizing more funds from both the public and private sectors and establishing a variety of cross-subsidization options. It also increases repayable domestic finance through mechanisms that reduce perceived risks and pool finance at the national, municipal, and household levels. Finally, it encourages innovation, concessional financing and less-explored new approaches, such as climate funds and social impact bonds, which the water and sanitation sector rarely has access to.

The study also brings out the fact that institutional arrangements for sustainable water and sanitation financing will facilitate the integration of various frameworks, organisations, and systems that facilitate the creation, implementation, and regulation of new financial instruments and approaches. Institutional arrangements for sustainable finance in the sector should involve Development Finance Institutions (DFIs), which are specialised institutions that provide funding to support economic growth and development. Impact Investment Funds and social

stock exchanges, which allow companies and organisations to raise capital from investors interested in generating social and environmental impact in addition to financial returns, must be supported under a regulatory framework that promotes their existence and operations.

From the study, development partners and other water and sanitation entities, such as government line Ministries i.e., the Ministry of Water, Sanitation and Irrigation (MoWSI) and the Ministry of Health (MoH), together with the financial sector players could exert pressure on financial sector regulators to make water and sanitation a priority sector on which the financial sector should issue financial products to, monitor performance closely and report on the same. Sustainability reporting is becoming a key area for different market segments to report on, and the financial sector is not being left behind. Water and sanitation being a critical sector with regards to the country's development and the sustainable development goals, in addition to its health and economic impacts, should be earmarked as a sector in which financial institutions prioritise as part of their contribution to the sector.

6.2 Recommendations for sustainable finance of water and sanitation

The development of a sustainable finance strategy that identifies the financing needs for water and sanitation projects and develops a plan to mobilise resources from various sources, such as governments, development finance institutions, private sector entities, and philanthropic organisations, will go a long way towards enhancing the sector's sustainable finance. The strategy should also describe how the funding will be used to achieve sustainable water and sanitation outcomes, such as increased access to safe drinking water and sanitation services, decreased water pollution, and increased climate resilience.

Participation of the financial sector in the water and sanitation sector is one of the most important ways to improve the sustainability of water and sanitation financing. As the Kenyan central bank's regulator for financial institutions has prioritised climate and renewable energy finance, and as banks are required to report on the same, the study suggests that water and sanitation should be prioritised similarly to encourage financial institutions to invest in the sector. In addition, because water and sanitation have a direct impact on climate change, and because climate change is a CBK priority sector, water and sanitation could be required to provide more comprehensive reporting and ensure wholesome intervention in relation to environmental solutions sought under the renewable energy mandate.

To enhance policy formulation and its roll out with regards to sustainable finance for water and sanitation, the formation of a water and sanitation finance technical working group that will

continuously explore mechanisms through which to enhance sustainable finance for the water and sanitation sector. The working group being composed by different industry stakeholders would also explore different sources of funds to channel to for water and sanitation while also advising on its deployment for efficiency and effectiveness. This will highly borrow from other working groups in the sector that have managed to come up with policies and had them validated and published for the sector because of the collective, structured and iterative approaches that involve engaging with the various stakeholders.

Further to this, policy makers need to ensure adherence to a proper governance framework established through the regulatory process to support sustainable financing in the sector. This would for example include putting in place a reporting framework that is regularly evaluated by both the water and sanitation sector and the financial sector to check monitor, evaluate and control progress in sustainable financing for water and sanitation.

Collaboration among various actors such as development partners and government departments responsible for water and sanitation, financial institutions, and financial sector regulators such as the Central Bank of Kenya would be beneficial in establishing a framework that not only develops innovative financial solutions for water and sanitation but also ensures their effective implementation and monitoring. Tied to sector harmonization, partnerships and intentional collaborations, different institutions, partners and stakeholders are able to bring different solutions and expertise that will be useful in enhancing sustainable finance for the sector. For example, some of the partners could support in the securitization of the water and sanitation credit facilities offered by financial institutions by derisking the loans through guarantee funds, or through various incentives to the clients or the financial institutions such as output based payments kind of arrangements that would reduce their customers liability or the financial institutions risks. Other innovations such as digital water and sanitation loans can be explored, developed and rolled out in the market to ease the process of application and disbursement. This is in addition to various blended finance opportunities that can be developed and integrated to strengthen not only the business case for water and sanitation financing but to also crowd in financing to increase liquidity specific to the sector for enhance uptake of financial products for water and sanitation.

Furthermore, data modelling and estimation procedures must be implemented to improve decision-making quality for sustainable finance for water and sanitation. This will provide evidence-based solutions that can be utilised in advocating for increased budgetary allocations

to the government for sector financing needs. Extensive research into the risk return profiles of water and sanitation financing is required to provide evidence-based information and knowledge on the sector's performance in order to encourage more financial flows into the sector and to motivate financial institutions to make water and sanitation financing a priority sector as well as help investors make informed investment decisions by providing information on the environmental, social, and financial performance of water and sanitation projects.

Finally, there is a need for the development of platforms for information gathering and sharing among stakeholders in the water and finance sectors as improved information exchange, knowledge dissemination, and learning would be critical in strengthening the business case for WASH sector sustainable financing. Data can be used to track and report on the success of sustainable finance initiatives and with this stakeholders can assess the impact of sustainable finance projects and make informed decisions about future investments by tracking key indicators such as water quality, access to services, and resource efficiency.

6.3 Limitations of the Study

The research concentrated on institutional level participants in the water, sanitation, and hygiene, as well as financial, sectors. These included the government line ministries in water and sanitation and the that of health, development partners and financial institutions. The findings were therefore biased on service authority and service provision levels negating the views of the service recipient level.

6.4 Suggestions for Further Research

Further research is necessary in two key areas from the study conducted, these being the client perspectives with regards to the challenges in the sustainable finance in the water, sanitation and hygiene sector in Kenya and solutions from the client perspective. Additionally, as there is an obvious crossover between WASH financing and climate change mitigation when it comes to financing sustainable development, it would be vital to assess this relationship to come up with the intersectionality between the two and the sustainable financing mechanisms suitable.

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APPENDICES

Appendix I: Interview Guide

Section A: Participants details

1. **Name of interviewee (Optional)**.....
2. **Organization Represented:** .....
3. **Sector Representation:** .....
4. **Role in organization:** .....
5. **Years of experience in the sector:**.....

PART B: Interview Questions

Understanding of the water and sanitation sector in Kenya and the financing needs for the sector.

1. What is your understanding or knowledge on the state of sustainable financing of the water and sanitation sector in Kenya?
2. How does your organization relate to sustainable finance in the water and sanitation sector?
3. How does your organization influence investments in the water and sanitation sector? Is it a priority sector? Explain
4. Do you play a role in enhancing access to sustainable financial solutions in water and sanitation in Kenya? If so, describe what you do.
5. In your opinion will the understanding of the challenges and solutions in sustainable finance for the water and sanitation sector lead to an increased number of water and sanitation infrastructure in the country? Explain

Challenges in the sustainable finance water and sanitation financing in Kenya

1. As a sector practitioner, what are the sustainable finance barriers experienced in the water and sanitation sector?
2. Are there clear regulations on sustainable financing for water and sanitation?
3. What is the regulatory framework for sustainable financing of water and sanitation?
4. Who are the duty bearers for the sustainable finance of water and sanitation?

Solution for the sustainable financing of water and sanitation in Kenya

1. What are the current approaches / ways of dealing with these barriers?
2. What would be the role of your institution in these solutions?
3. What other stakeholders would be relevant to enhance the sustainable finance of water and sanitation in Kenya? What would be their roles and how do they benefit?
4. Are there other approaches you think should be employed to ensure sustainable finance in the water and sanitation sector in Kenya?

Appendix II: Letter of Transmittal

Ole Sangale Rd, Madaraka Estate,
P.O Box 59857 00200, Nairobi, Kenya.
Cell: +254 703 414/6/7, Twitter: @SBSKenya
Email: info@sbs.ac.ke or visit **www.sbs.strathmore.edu**

Strathmore UNIVERSITY
BUSINESS SCHOOL

Tuesday, 07 June 2022

To Whom It May Concern,

RE: FACILITATION OF RESEARCH - BUNDI, PAMELA KANANU

This is to introduce **Bundi, Pamela Kananu**, admission number **MDF/107108/2017** who is an MSc. in Development Finance (MDF) student at Strathmore University Business School (SBS). As part of our SBS MDF Master's Program, Pamela is expected to do applied research and to undertake a project. This is in partial fulfilment of the requirements of the Master of Development Finance. She would like to request for appropriate data from your organization to help her finalize her research.

Pamela is undertaking a research project on "**AN EVALUATION OF THE CHALLENGES IN SUSTAINABLE FINANCE FOR IN THE WATER, SANITATION AND HYGIENE SECTOR IN KENYA**" The information obtained from your organization shall be treated confidentially and shall be used for academic purposes only.

The MDF program seeks to establish links with industry, and one of these ways is by directing our research to areas that would be of direct use to industry. We would be glad to share our findings with you after the research, and we trust that you will find them of great interest and of practical value to your organization.

Any assistance you can provide to her will be greatly appreciated and we shall be willing to provide any further information required.

Yours sincerely,

Njoki Kiagiri,
Manager-Graduate Programmes,
Strathmore University Business School

Appendix III: Ethical Approval

Strathmore UNIVERSITY

24th August 2022

Ms Bundi Pamela,
pamela.bundi@strathmore.edu

Dear Ms Bundi,

RE: An Evaluation of the Challenges in Sustainable Finance in the Water, Sanitation and Hygiene Sector in Kenya

This is to inform you that SU-ISERC has reviewed and **approved** your above **SU- master's** research proposal. Your application reference number is **SU-ISERC1428/22.** The approval period is from **24th August 2022 to 23rd August 2023.**

This approval is subject to compliance with the following requirements:

i. Only approved documents including (informed consents, study instruments, MTA) will be used
ii. All changes including (amendments, deviations, and violations) are submitted for review and approval by SU-ISERC.
iii. Death and life-threatening problems and serious adverse events or unexpected adverse events whether related or unrelated to the study must be reported to SU-ISERC within 48 hours of notification
iv. Any changes, anticipated or otherwise that may increase the risks or affected safety or welfare of study participants and others or affect the integrity of the research must be reported to SU-ISERC within 48 hours
v. Clearance for export of biological specimens must be obtained from relevant institutions.
vi. Submission of a request for renewal of approval at least 60 days prior to expiry of the approval period. Attach a comprehensive progress report to support the renewal.
vii. Submission of an executive summary report within 90 days upon completion of the study to SU-ISERC.

Prior to commencing your study, you will be expected to obtain a research license from National Commission for Science, Technology, and Innovation (NACOSTI) https://research-portal.nacosti.go.ke/ and obtain other clearances needed.

Yours sincerely,

for: **Dr Ben Ngoye,**
Secretary; SU-ISERC

STRATHMORE UNIVERSITY INSTITUTIONAL SCIENTIFIC AND ETHICAL REVIEW COMMITTEE
(SU-ISERC)
24-Aug-2022
Email:ethicsreview@strathmore.edu
P.O BOX 59857-00200
NAIROBI-KENYA

Cc: Prof Fred Were,
Chairperson; SU-ISERC

Appendix IV: NACOSTI Approval

REPUBLIC OF KENYA

NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Ref No: **950513**

Date of Issue: **18/July/2022**

RESEARCH LICENSE

This is to Certify that Ms.. Pamela Kananu Bundi of Strathmore University, has been licensed to conduct research in Nairobi on the topic: AN EVALUATION OF THE CHALLENGES IN SUSTAINABLE FINANCE IN THE WATER AND SANITATION SECTOR IN KENYA for the period ending : 18/July/2023.

License No: **NACOSTI/P/22/18743**

950513

Applicant Identification Number

Director General
NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Verification QR Code

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