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Water Governance for Sustainable Development

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An assessment of water governance for rural supply and the nexus of agriculture production and socio economic demands in Malawi

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Abstract

The world is facing critical water risks in relation to water availability, yet the competing demand for water supply is increasing in most countries. To respond to these risks, some governments and water authorities are reforming their governance frameworks to achieve convergence between water supply and demand and ensure freshwater ecosystem services are sustained. Water is recognized as the only natural resource that has the capacity to influence socio-economic growth and poverty alleviation across the globe.

Malawi is generally rich in both surface and ground water resources, however, the pressure on water resources is increasing as a result of a growing population, and competing demands for water for energy generation, agriculture, industrial and domestic purposes. Water is part of the country's identity, because of its inclusion in the definition of the country's name and because it is another natural resource in abundance in the country occupying 20% of the surface area in Malawi. Malawi's economy is dependent on agriculture and it contributes 37.6% to GDP and 80% of the labor force in rural areas. Agriculture is entirely dependent on seasonal rainfall and is accountable for 86% of water withdrawal in Malawi. Now with the effects of climate change and environmental degradation, the country has been experiencing unpredictable weather patterns characterized by poor distribution of rainfall, causing dry spells, droughts and floods in recent years. This is negatively impacting the water supply for domestic use and economic activities, and as a result the country's economy is extremely vulnerable. Effective policies and governance strategies are therefore important for the sustainable development in Malawi. Successful management of freshwater resources also requires the integration of the different sectors that use this resource. Therefore, water resource management policies should have an

integrated approach that involves social, economic and environmental factors

This study therefore, investigated the current water governance system by assessing the legislative and policy frameworks in Malawi. The study also analyzed policy gaps in the existing legislation. This was done through semi-structured interview qualitative data with relevant stakeholders in the water sector.

The results show that there are multiple challenges to water governance in Malawi and that the existing laws are not effectively addressing the current water challenges, because the country is using outdated water laws that are inconsistent with policy frameworks. Other critical gaps identified in this study were weak stakeholder coordination leading to fragmentation of organization in the sector, low national budget financing, weak decentralization and political influence leading to top-down management, failure by government to enforcement water regulations, and failure by government to enact policies to adapt to climate change and natural disasters.

Based on the study results, there is overwhelming evidence that the water governance, regulatory systems and policy frameworks in Malawi have some critical gaps. This poses a great concern for sustainable water supply for future generation and development in Malawi. Therefore, there Malawi needs to consistently review and update the current water laws and policies to ensure they create adaptive to the emerging climate change, natural disaster and rapid population growth challenges. This study therefore, has led to initiation of a project whose main aim is to advocate for policy reforms by influencing the government to update and enact new water laws and policies in Malawi.

***Keywords*: Water policy, Reforms, governance, Advocacy, Malawi**

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Acronyms and Abbreviations

MDP	Master of Development Practice
UNDP	United Nations Development Program
UNICEF	United Nation Children's Funds
UNESCO	United Nations Education Science and Culture Organization
GDP	Growth Domestic Product
UN	United Nations
JICA	Japanese International Corporation Agency
SDG	Sustainable Development Goals
MoAIWD	Ministry of Agriculture Irrigation and Water Development
MWSIP	Malawi Water Sector Investment Plan
WASH	Water, Sanitation and Hygiene
FY	Financial Year
FAO	Food and Agriculture Organization
GoM	Government of Malawi
NGO	Non Governmental Organization
CSO	Civil Society Organization
WESNet	Water Environmental and Sanitation Network
USAID	United States Agency for International Development
MGDS	Malawi Growth and Development Strategy

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Chapter 1

The study

1. Background

1.1. Problem Statement

The importance of water goes beyond domestic use. Water is recognized as the only natural resource that has the capacity to influence socio-economic growth and poverty alleviation across the globe (World Bank, 2017). Malawi is generally rich in both surface and ground water resources, however, the pressure on water resources is increasing as a result of a growing population, and competing demands for water for energy generation, agriculture, industrial and domestic purposes (FAO, 2018). Malawi's economy is dependent on agriculture and it contributes 37.6% to GDP and 80% of the labor force in rural areas (The World Bank, 2017). Agriculture is entirely dependent on seasonal rainfall and is accountable for 86% of water withdrawal in Malawi (FAO 2017). Now with the effects of climate change and environmental degradation, the country has been experiencing unpredictable weather patterns characterized by poor distribution of rainfall, causing dry spells, droughts and floods in recent years (Mwaluwafu, & et al, 2018). This is negatively impacting the water supply for domestic use and economic activities, and as a result the country's economy is extremely vulnerable (Global Water Partnership, 2016). It is predicted that Malawi will be water stressed by 2025 (World Bank, 2017). While the government has made significant progress by developing the National Water Policy in 2005, some studies have shown that the country is still using an outdated Water Resources Act of 1969, which lacks a clear sense for water governance (Chiluwe and Nkhata, 2014). Neither of these acts provides clear

guidelines for allocating water between competing uses or taking into account the scale of potential changes in water availability under climate change. Achieving The United Nations' Sustainable Development Goals 6 (SDG 6) 'Water for All' while ensuring the sustainable management of water resources is a national and global priority (Oates, et al, 2018). Therefore, an effective water governance system is important for water resources development and management. It is against this background that, this study has been designed to examine the existing water governance system in Malawi, by specifically analyzing the current water policy framework and regulations, and how these are aligned with an effective rural water supply for domestic and economic activities. The results of this study are expected to influence policy change on water resource for future generations and will lead to the establishment of an advocacy and policy development organization called "Water for Generations." This organization will work with the government and other stakeholders to continuously review and update water policies, regulations and governance systems to ensure the country is sustaining water supply for domestic use and economic purposes.

1.2. Executive Summary

Water is a basic need for all livings. Despite Malawi being rich in both surface and ground water resources, there is growing pressure for water supply due to the growing population, and competing demands for industrial and energy generation, agriculture, and domestic purposes in the country (World Bank, 2017). Many rural areas in Malawi still lack clean water sources for domestic use and agriculture economic activities (Oates and Mwathunga, 2018). According to a 2018 report written by Oates and Mwathunga, the lack of water supply in rural communities in the country can be attributed to frequent breakdowns of water point sources. The pressure on limited water supply is exacerbated by climate change and environmental degradation challenges. In a few decades, Malawi will be at risk of water crisis if appropriate measures to mitigate these challenges are not dealt with effectively.

Therefore, this study has been designed to review and evaluate policies and strategies for water resource allocation and management in Malawi. The study has been initiated based on personal experiences obtained over the years implementing water projects in this sector. The study will assess and analyze the policy and governance context for sustainable water supply and demand management in Malawi. The study will begin with a critical literature review of policy documents and water resources in Malawi, followed by the analysis of interviews with different water governance stakeholders in Malawi. The study concludes with the description of a program for influencing policy change on water governance for sustainable supply and economic development.

Chapter 2

Literature Review

2. Introduction

This section of the study will review literature related to water resources and demand management by reviewing Malawi's water sources, current water policies and legislative environment, institutional frameworks and strategies. This chapter will also briefly discuss water uses and competing demands for supply coupled with key challenges facing water sector in Malawi. The stakeholders and their roles in water supply and management will be discussed in this section.

2.1. Water Resources in Malawi

Malawi is relatively rich in water resources, which are stored in the form of lakes, rivers and ground water aquifers across the country. The country has not yet experienced absolute water scarcity or lived beyond its water barrier, however, the prospects of either happening in the near future is real (FAO, 2017). The country's water resources can be classified into two categories namely surface water resources and groundwater resources.

Sources: Map of Malawi; showing main water sources in the country

The surface water resources, which consist of a network of rivers and lakes across the country, cover more than 20% of the country's territorial area. Large quantities of surface water resources are stocked in Lake Malawi, which is the third largest lake in Africa and has great influence on the water balance of the country (Mwaluwafu, & et al, 2018). The lake is on average 474.7 meters above sea level, with 706 m being its deepest point and less than 400 meters the lowest (MoAIWD, 2016). However, according to some studies, the water levels from the Lake Malawi have dropped from 474.7 meters to 472.7 meters in recent years (MoAIWD, 2016). The drop in the water levels is largely due to persistent dry spells caused erratic rainfall patterns. In general, evaporation (Chavula, 2016) on the lake influenced by global warming and climate change is contributing to more than 80% of the water loss from the lake (MoAIWD,

2016). In general, the surface water resources have been declining in recent years especially during the dry season of extreme drought conditions. The national surface water resource availability is estimated to be approximately 42,500 MI/d (MoAIWD, 2016).

The groundwater resources in Malawi have for a long time been developed predominantly for rural domestic supplies through boreholes. In Malawi groundwater is required to serve the majority of the rural population by providing potable water for domestic supply across the country. Generally, the borehole water is considered to be safe and free from microbiological effects compared to surface water sources. There are two types of aquifers responsible for high yielding water supply in the country namely, the alluvial and fluvial (Global water partnership, 2019). The annual groundwater recharge is dependent on the rainfall and can range from 100mm across the country, and 200mm along lakeshore areas and the along the Lower Shire Valley (Chavula, 2009). However, recent studies on the status of water resources shows that these two aquifers are potentially declining (Chavula, 2016), basically due to the effects of climate change (MoAIWD, 2016). The Water Sector Performance report of 2016 indicated that the average groundwater table has declined from 8 meters to 12 meters in the last 4 decades (MoAIWD, 2016). Another separate study conducted by Water Aid in 2018 shows further decline of groundwater to 15 meters deep (Water Aid, 2018). The Global Water Partnership in their report of 2018 alarming revelation on the ground water sources and they predict that the water table will decline further to 20m by 2025 (Global Water Partnership, 2019). The total renewable water resources in Malawi are estimated at 17.28 km^3/year (Mwaluafu, et al, 2018) with less than 1,700 m^3 of freshwater available per capita per year. This poses a big threat for ground water resources, which is the main source for rural water supply in Malawi.

The indispensable water resources in Malawi have proven themselves to be greatly resilient, but they are increasingly vulnerable and threatened due to a growing population, and its growing demand for economic activities coupled with pollution, climate change and environmental degradation challenges (World Bank, 2017). Therefore, with limited water resources, equitable distribution under changing patterns of supply and competing demand is often becoming a daunting challenge for the country. For example, the water sector Joint Monitoring Performance report by JICA and UNICEF predicts that the freshwater resources will drastically fall to less than 1,400 m3 from the current 1,740m3 by 2025 (JICA and UNICEF, 2017). In another development, and the ministry responsible for water development confirmed in their 2018 sector report that the water per capita is declining and shows that, freshwater resource will be less that 1000 m3 per year in Malawi by 2030. Looking at these frustrating figures shows that Malawi is already water stressed.

The water sector is facing daunting challenges in meeting the needs of the users. With increased population growth, agricultural activities both for food production and for commercial purposes are intensifying; causing increased demand for water supply and this is causing potential threats to the availability of water resources. Climate change, coupled with deforestation, is causing environmental degradation of catchment areas for water supply that is rendering quantity of water to be insufficient (Oates and Mwathunga, 2018).

2.2. *Water Quality issues*

Declining water quality has become a global issue of concern as human populations grow, industrial and agricultural activities expand, and climate change threatens to cause major alterations in the hydrological cycle (UN Water Report, 2011). Surface and ground water quality

in Malawi has been negatively affected by environmental degradation; agriculture land husbandry practices, industrial and poor sanitation services both in rural and urban centers (Malawi Environmental Affairs, 2014).

The quality of surface water resources in Malawi is mainly affected by agricultural activities coupled with environmental degradation challenges, especially in areas under heavy cultivation (MoAIWD, 2018). This is supported by FAO (2018), which concludes that due to human population growth land is becoming a challenge, and as a result people are forced to cultivate on marginal lands, and eventually this leads to soil erosion causing sedimentation to build up in surface water sources (FAO, 2018). The other common water quality challenge is pollution due to industrial discharges. Lack of enforcement of the waste management and industrial discharge laws particularly in cities and towns across the country, has led to surface water contamination due to high levels of suspended solids and chemical contents deposited in rivers and other water reservoirs (Chavula, 2009). This is very common and worse during the rainy season.

While groundwater resources in the alluvial aquifers dominated by alkaline earths and more mineralized is generally acceptable for human consumption in Malawi, (Chavula, 2009) high concentrations of sulfur in bedrock and high salinity in lower water table has raised serious ground water quality concern (Malawi Environmental Affairs, 2014 and MoAIWD, 2018). Chavula and colleagues (2009) argue that groundwater with high salinity caused by evaporated concentration along Shire Valley affects water supply for human consumption (Chavula, 2009).

2.3. Water Resources use, Supply and Demand

Water is used for human consumption and other basic social services, and plays a central role as catalyst for socio-economic development and poverty alleviation in Malawi. The provision of sustainable water contributes significantly to the citizenry public health, as well as positively impacting household economic productivity (The World Bank, 2017). However, only 75% of rural people in Malawi have access to an improved water source, a statistic that is likely to be highly optimistic due to a lack of monitoring and evaluation. In general, Malawi's economy is dependent on agriculture and the sector contributes 37.6 percent to the country's GDP and 80% of the labor force in rural areas (FAO, 2017). Agriculture in Malawi is entirely dependent on seasonal rainfall and is accountable for 86% of water withdrawal (FAO 2017).

Water in Malawi plays a central role for power generation for industrial activities and also transportation on the Lake Malawi (Mwaluafu, et al, 2019). In Malawi 95% of energy is electricity generated from hydropower from Shire River, whose main source of water is from the Lake Malawi (Gamula, and et al, 2013). In recent years, due to low and erratic rainfalls patterns, water flows have dropped significantly and the lake is unable to support the normal flow of the Shire River, as a result the power generation has tremendously been reduced from a maximum capacity of 351MW to of 200MW (GoM, 2017). This is creating national stress on the availability of energy capacity in the country (The World Bank, 2017). The other important economic uses of water use may include transportation and navigation along the Lake Malawi, fisheries, eco-tourism and recreation services, boosting many small-scale economic activities in most rural communities, such as petty commerce (selling ice, packed drinking water), car washing, gardening, pottery and many others (The World Bank, 2017).

2.4. Water governance

While the concept of sustainable development refers to a link between economic growth and the environment management, the concept of water governance relates to the capability of developing and implementing suitable policies for water management (Cullet, P. 2012). The literature shows that population growth, economic development and technological improvement have raised the water demand globally. Moreover, natural hazards due to climate change like droughts and floods are intensifying the water stress (Chipopya, 2016), therefore, water governance is often highlighted as a crucial component of development efforts and there is a general consensus about the necessity for good water governance for water resources (Barreteau & Daniell, 2015). It is noted that water governance is crucial for sustainable development for all countries worldwide, in particular, for developing countries.

Over the last three decades scholars, donors, global bodies and international policy makers agreed that water governance holds the key to improve water security in countries in the Global South (Chiluwe, 2014). The water supply and demand challenges in developing countries are largely attributed to governance crises. Water governance deficiencies include failure to provide sufficient water for poor and marginalized areas, lack of enforcement and updating of water legislation and infrastructure, and an inability to balance competing demands between socio-economic needs and the environment. Water governance as described by UNDP (2013) is when political interest, socio-economic and effective administrative systems are in place, which promote efficient delivery of water service, use, development and management of water resources at different levels of society. The concept of water governance in this case, refers to the capability of a country to create a social system that can effectively mobilize its

resources and its stakeholders in a coherent manner, for the sustainable development of water resources (UNDP, 2013). This includes the ability to design public policies that are socially accepted and relevant policies that incorporate the goals for sustainable development and use of water resources, which can be implemented effectively by the different actors/stakeholders involved in the process (Rogers 2002). Therefore, water governance relates to the capability of the country in developing and implementing suitable policies and strategies for water. This calls for a holistic approach where decisions are affected and influenced by other stakeholders outside of the water sector (UNDP 2013). From this perspective, water governance must be transparent, accountable, participatory, communicative, sustainable, equitable, coherent, efficient, integrative and ethical (Solanes & Jouravlev, 2006).

Every country across the globe has its own set of water resource management and governance systems, stakeholder dynamics, institutional setting and ecological circumstances. From the literature, it is well recognized that transparency, accountability and stakeholder participation are key elements to sustainable water governance. Transparency shall mean government's commitment in creating an awareness of water policies and access to information water governance and management. Accountability refers to the obligation to account for actions, failures on water management challenges (Grigg, 2011). Transparency is therefore, a precondition for accountability and stakeholder participation. The presence of these key elements can lead to efficient management and protection of water resources. In general, institutional capacity, consideration of the cultural and socio-economic situation, political interest and the government's effectiveness in implementing the water policies and strategies are key success factors leading sustainable water supply (UNDP, 2013).

2.5. Water Resources Management And Policy

Water has a broad role in the economy of Malawi. Malawi has abundant surface water and groundwater resources. However, these resources are of variable quality and quantity, unevenly distributed across the country and are subjected to poor conservation and management. Therefore, the need for sustainable management of water resources and supply remains a priority issue in the poverty alleviation program being pursued by the Malawi Government (Mulwafu, et al, 2019). In view of this, the government of Malawi and its development partners in the water sector has enacted a considerable array of policy frameworks and strategies, which aim at addressing these key challenges the water sector is facing.

The Department of Water Resources and Development under the Ministry of Agriculture, Irrigation and Water Development is responsible for the country's water resources management. The ministry is responsible for sector policy formulation, and setting of technical standards and procedures for the provision of these services (Government of Malawi, 2019). The Water Department oversees the provision of water supply services to rural and urban communities, stakeholder coordination, maintaining the national water database and monitoring water quality in Malawi (MoAIWD, 2017).

In recent years, the water sector in Malawi has undertaken a number of reforms and these reforms aim at improving the access to water supply to meet the national needs for domestic use and competing demands for economic and agricultural use. The reforms are responding to the overall national development strategic plan called Malawi Growth and Development Strategy and comply with the United Nations' Sustainable Development Goal 6 which calls for

the equitable water supply across the global, and the need to build sustainable water resources management for future generations. These reforms include reviewing the Water Resources Act of 1969, developing new water policy and legislative frameworks, identifying priorities, developing new strategies and implementing the decentralized government functions at local and district level. While these reforms move in the right direction, they are insufficient for handling the diverse pressures the water sector faces.

2.5.1. The Water policy and Resource Act 1969

The Water Sector Policy was developed in response to the overall legal instrument of water resources management in Malawi called Malawi Water Resources Act of 1969. The act controls and regulates the acquisition of water resources and management in Malawi (Malawi Water Resources Act, 1969 2012). The Water Policy is national sector document that outlines the guidelines and government's commitment in the provision, utilization and sustainable water resource management in the country (Chiluwe, et al, 2014). The overall policy goal is to ensure that all people have equitable access to water supply of acceptable quality and in sufficient quantities for domestic use and for the advancement of the country's sustainable economic growth and prosperity. The policy also shows the country's commitment in complying with the requirement of international water resources management and supply standards expressed in the Dublin Principles and Agenda 21 and Sustainable Development Goal 6 of the United Nations (Global Water Partnership, 2017).

The success of policies depends on resources, skills and technical expertise of the responsible institutions. Malawi's water sector suffers from chronic underinvestment, particularly at the district level. The Decentralization Policy was introduced to localize the political and

administrative functions from central level to local government (O'Neil et al., 2014). This policy aims at promoting equitable distribution of government resources and other public services including water supply in a transparent manner in rural and underserved communities in each district (Chiweza, 2010). According to UNICEF (2018) and Water Aid (2017) the department has a 75% vacancy rate against of 350 establishments, due to inadequate funding. Without human resource capacity, assessments, monitoring, and protection of strategically important water resources cannot be carried out. This makes it difficult for the district staff to carry out their roles of supervising, training of water point committees and providing backstopping support to rural water supply services. This has therefore, led to numerous non-functional water source points being unattended to. This lack of capacity severely compromises the government's ability to ensure that water resources are adequate and sustained over time (Baumann and Danert, 2008).

2.5.2. The Malawi Water Sector Investment Plan

In recent years the Malawi government has established a strategic water sector investment plan, Malawi Water Sector Investment Plan 2016 – 20130 (MWSIP). This plan provides guidance on water sector financing, and asset management to maximize the investment to expand access to improved water supply in the country. Despite tremendous achievement in developing the key sector policies, guidelines and good plans, the current water policy focuses on water supply and lacks policy direction in monitoring and mitigating measures in disaster management of floods and droughts (Chiluwe et al, 2014), Global Water partnership, 2017). A critical analysis shows, that the water policy is silent on sustainable watershed management and environmental conservation measures (Mwaluafu, 2017). According to Chiluwe (2014), the

policy lacks commitment to implement the international agreements on water resources management to which Malawi is a signatory. Chiluwe (2014), and Laisi (2016) state that unfulfilled commitments in the water department are due lack of adequate funding (Laisi, 2016). From the analysis above, it shows that the department of water supply and development is not given much priority in terms of financing, literally because it is just a section under the ministry of agriculture (Laisi, 2008). For instance, the WASH sector **budget** was at 1.6% of national budget for the 2018/19 Fiscal year, down from 3.3% in FY2016/17 (UNICEF, 2019)

On the other hand, despite the government commitment to amend the Water resources Act of 1969 in 2012, some water experts have argued that the act does not reflect or incorporate the current water availability, demands and challenges; therefore, it needs full upgrading (NKhata, 2014). Chiluwe and Nkhata, argue that despite the amended in 2012, the Water Act still has some deficiencies, particularly on water rights and lacks clear penalties on non-compliances offenses related industrial water use and waste management (Chiluwe and Nkhata, 2014).

2.6. Institutional Framework

The Ministry of Agriculture Irrigation and Water Development is the key government institution responsible for water management service. The sustainability of water supply requires an integrated approach involving all relevant stakeholders such as government ministries, private sector, civil society and non-governmental organizations. The institutional roles may depend on capacity of institution and can range from policy formulation, supply and construction of water points, and operational maintenance of water supply system in Malawi. One important institution established by government in the management of water resources is the Water

Resources Board comprising of the members from the government, community leadership, civil society, faith based and non-government organization drawn across the water sector in Malawi. The role of the community leadership is basically to represent the beneficiaries and to provide long-term performance outcomes and feedback of the water resources distribution and management of water point's functionality at community level.

2.6.1. The Water Resources Board

The Water Resources Board is a committee responsible for the granting of water rights, abstractions and discharge of effluents, as well as for monitoring the adherence to the water rights (MoAIWD, 2018). The boards are comprised of independent members appointed by government, with representation from the non-governmental and civil society organizations (Malawi Water policy, 2012). However, one of the critical challenges of the board is the lack of coordination among members (Laisi, 2016). As an independent consultant on water resources management, Laisi observed that the committee does not have a well-coordinated secretariat and management unit. Therefore, it does not discharge its responsibilities effectively. It is also argued by Nkhata (2014) that political appointments o the board members defeats the purpose of the independence of the board, because it lacks membership of the non-governmental and civil society participation Chiluwe, 2014).

2.6.2. Donors and development partners

Both local and international non governmental organizations in collaboration with other bilateral and multi-lateral development partners are implementing various water development interventions complimenting the government's efforts in the provision of water supply to the underserved rural and semi urban communities in Malawi (Wasambo, 2011). Generally, the lack

of government's commitment to upgrade the water sector into a full ministry remains a key challenge of the water sector; as a result, the department is allocated meager funding from national budget (UNICEF, 2018). The sector survives on donor funding (Water Aid, 2018), according to UNCEF (2018) approximately 80% of water sector funding comes from donors. Some of the major development organizations working in the rural WASH sector in Malawi include Freshwater Project International, Water Aid, UNICEF, Water For people, Inter Aide and Water Missions just to mention few. Most water projects in rural Malawi are characterized by short-termism due to fragmentation of individual donors and other development partners in the sector. Coordination and information sharing among key stakeholders seems to be a big challenge (Chipopya, 2012). Generally, while NGOs are mandated to work with the government at all levels of in the water sector, due to government's appetite and demand for huge travel allowances from other development partners, most NGOs prefer to ignore working with them. However, the presence of several donors willing to support the water sector if well utilized, could be a great opportunity to enhance harmonization of the water sector. The local and international development partners, established the Water, Environmental and Sanitation Network in Malawi as a platform to share information and resources yet, the network has severe funding challenges and faces difficulties in executing their mandates. The other critical challenge of WES Net is that it does not have the national database for water sector in Malawi. In sum, according to Laisi (2008), there is inadequate stakeholder coordination in the water sector, which has resulted in the lack of harmonized service coverage, inadequate financing and uncoordinated water resource development and management.

2.6.3. Lessons from other countries

The increasing demands for water supply across the globe have created the impetus to regulate water resources for ecosystem and human benefit. Literature shows that despite rigorous technical, financial, economic and institutional investment undertaken in support of projects particularly in Africa, these water sector projects have not guaranteed sustainability on the continent (Global Water Partnership, 2017). In most African countries poor governance has been a major contributing factor to unsustainable water (Chiluwe, 2014). Most countries lack in Africa lacks effective legislative and regulatory frameworks, stakeholder coordination and sector-wide approaches, civil society participation, accountability and corruption.

However, in recent years water governance and policy has undergone considerable shifts towards greater emphasis on efficiency and managing water as an economic good in Africa (Chiluwe, 2014). Some countries like Tanzania, Rwanda, and Botswana have taken significant steps in water policy reforms by reviewing their water laws and creating conducive environment for policy reform dialog with their stakeholders. Like Tanzania decided to review and update all its colonial water laws and enacted new legislative policy reforms. Since the introduction of a decentralized system, the management of water resources has significantly been transformed; and as a result the country has improved its water governance system (Global Water Partnership, 2017). In general, these countries created an enabling environment for policy reforms in collaboration with their stakeholders by reviewing and updating old water laws and policy frameworks. These countries introduced a decentralized system and used a sector wide approach as an effective sector capital investment.

In principle an effective water governance system should adopt an accountable structure that is coherent and consistent at each layer of administration, from national through district to local level. A good governance system should be able to build capacity and transfer management skills of water resources to local independent bodies for self-financing at user level (Global Water Partnership, 2017). At the center of it all, stakeholder coordination is key for information sharing and preventing project fragmentation and duplication of efforts.

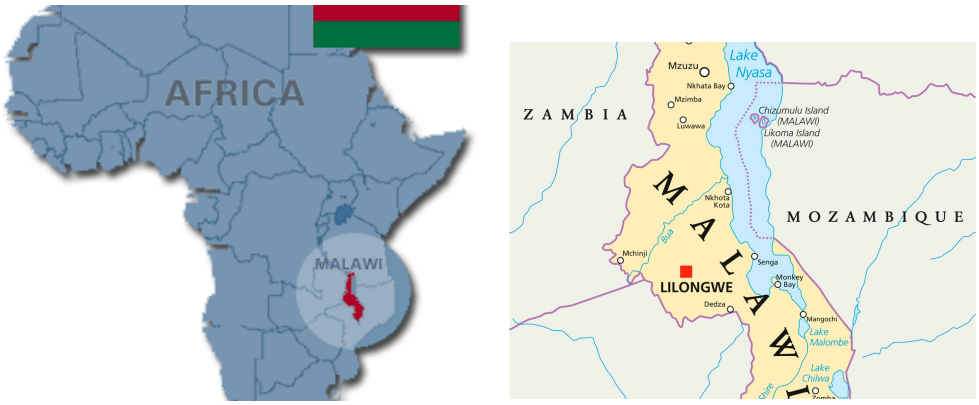
Generally, key elements to good and sustained water governance in the water may include, but are not limited to; water sector financing, regular legislative and policy reviews, research, planning and stakeholder engagement.

Chapter 3

Study area

3. Description of the study area and its Context

This chapter of the thesis provides detailed context about the study area by describing the geographical information, population, history, culture and including the social economic context in order to have a clear understanding of the relevance of the research.



Source GoM, 2018: Map of Africa and Malawi

3.1. About Malawi

Malawi is a small landlocked country in southeast Africa, and has an estimated population of over 19.5 million people (National Statistical Office, 2018). It borders with Tanzania to the northeast, Zambia to the northwest, and Mozambique to the south, southwest, and southeast. The country has a land surface area of 118,484 Km^2 with about 20 percent of its total surface area is covered by water bodies mainly Lake Malawi (GoM, 2019). Lake Malawi sits along the Great Rift Valley, which stretches from the north to the south east of the country. Mulanje Mountain is the highest point along the Great Rift Valley in Malawi, with approximately 3,400meters above sea level.

The country has 28 districts administratively divided into four regions such as northern, central, southeast and southwest. Lilongwe is the capital city in Malawi.

3.2. History

The country now called Malawi was originally the territory of the Bantu people who established the Maravi kingdom around the 10th century (Kadzamira, 2017). The kingdom was united under a one ruler, and stretched from east coast of Lake Nyasa now Malawi to the Zambezi River in Mozambique through the Luangwa River in Zambia. In 1859, a Scottish Missionary called Dr. David Livingstone came to Malawi and established the Blantyre Mission with the aim to end the slave trade in the region. This opened doors for the British government who made treaties with local rulers; therefore, in 1889 the three colonies Nyasaland (now Malawi), Northern (Zambia) and Southern Rhodesia (Zimbabwe) became the British Protectorate (Kadzamira, 2017). The three territories were combined and became The Federation of Rhodesia and Nyasaland. The federation ended when Nyasaland was the first to became independent in 1964, and was renamed Malawi after the Maravi kingdom.

3.3. Political Context

Malawi has had stable governments since independent in 1964, and beginning in 1994, the country adopted a democratic system of government. The government in Malawi has three main branches such as legislative, judicial and executive branches of which the president is the head of government and state. Presidential and general elections are held after every five years. The judiciary is independent and is based on the British system.

Politics in Malawi influence economic and public resources distribution. The politicians are decision makers and custodian of all government policies. Therefore, it is a common

phenomenon in Malawi, that those in power have great control of public resources, and eventually those in authority abuse policy implementation by using their position to divert some projects to their preferred communities, this affects all government sectors including water. In general, the political culture of appeasement and full of nepotism in Malawi hinders the ability of government officials to professionally implement the policies for the public interest and equality including water compliance. This poses serious present and future threats to water supply access and sustainability in Malawi.

3.4. Culture, Ethnic groups and languages

Malawi is ethnically and linguistically diverse; the country's languages are part of Bantu just like most African countries. There are over ten major ethnic groups, and Chewa is the largest ethnic group in the country (UNESCO, 2018). While there are ethnic distinctions, generally in Malawi, there are no significant inter-ethnic conflicts. Chewa is the national language mostly spoken by the majority of the population and widely used in print and electronic media (UNESCO, 2018). English, though not well understood by most rural population continues to be used widely as an official and business language in Malawi. Dancing is a large part of the nation's culture particularly among women. Dances are commonly seen during initiation ceremonies, marriages and many other celebrations activities.

There are many cultural beliefs and practices that may also negatively contribute to gender inequality in the utilization of water resources for household and economic purposes. It is a general cultural belief in Malawi that women prominently use water for domestic uses like washing, cooking and other basic home use, where as men use water for economic purposes like for agriculture and industrial use. Also there is a common cultural belief that piped or water

from constructed wells do not have a good taste, As such, some populations in the rural communities still get water from unprotected springs and are prone to contracting water related infections. On the other hand, there are also some cultural or social activities that are dependent on water particularly the initiation ceremony and during ancestral spiritual rituals.

3.5. Health and Education

Malawi has made some significant progress in building its human capital in knowledge, education, skills and health development in recent years (UNDP, 2017). According to the 2018 Population and Housing Census, life expectancy at birth is 63.7 years (National Statistical Office, 2018). By 2016, the total fertility rate has dropped to 4.4 children from 6.7 in 1996 per woman (National Statistical Office, 2018). With the introduction of free primary education in 1994, the overall literacy rate for the population is now at 75% in the country (UNESCO, 2018). However, in rural areas, where the literacy levels area still low compared to urban communities, health education related to the care and management of drinking water sources is low. As a result the communities may resort to drinking from unprotected sources, therefore most communities are susceptible to water related infections like cholera and other diarrhea diseases. It is estimated that more than 23% of rural inhabitants rely on unsafe water sources such as shallow hand-dug wells and surface water bodies (UNICEF, 2018). In Malawi, 12% of all deaths among children under-five are caused by diarrhea; moreover, diarrhea is responsible for 8% of all deaths nationally (UNICEF, 2018). Water and sanitation issues do not only affect health but also poverty, education, and gender issues among others.

3.6. Agriculture and food security

The agriculture and food security sector is largely rain fed and characterized by subsistence smallholder farming. Farmers predominantly use traditional farming techniques and lack mechanization, which leave a lot of people vulnerable to food shortages in times of weather variations (FAO, 2018). The recurring droughts and floods, coupled with climate change issues are afflicting the agriculture sector in Malawi, threatening the livelihoods of most smallholder farmers (USAID, 2018). Malawi's economy is agro based, and entirely dependent on rain fed water. Therefore, poverty in Malawi is also driven by low agriculture productivity due erratic rainfall patterns and floods in recent years. Water is key factor to successful and sustainable agriculture production in Malawi.

3.7. Economic development challenges

Malawi is the most densely populated country in Southern Africa and one the poorest country in the world. According to 2018 FAO Country Report, 75% of the population lives below the poverty line, and 47 percent of children are stunted. The economy is predominately agricultural with about 80% of the population living in rural areas (the World Bank, 2018). Agriculture contributes one-third of GDP and 90 percent of exports in Malawi (FAO, 2017). Apart from agriculture, the country's economy is substantially dependent on foreign aid from the international development banks, United Nations' agencies, developed nations and international non-governmental organizations (The World bank, 2018). The country's development initiative is guided by a five-yearly strategic plan called the Malawi Growth and Development Strategy (MGDS) (GoM, 2016). Malawi's economic performance has historically been constrained by policy inconsistency, macroeconomic instability, poor infrastructure,

rampant corruption, high population growth, and poor health and education outcomes that limit labor productivity (The World Bank, 2018).

Despite Malawi making significant progress in structural adjustment for economic growth, poverty and socioeconomic inequality remain stubbornly high in Malawi (IMF, 2017). According to the World Bank (2019), poverty levels have increased from 50.7% in 2010 to 51.5% by 2018 (The World Bank, 2019). Malawi's development challenges are multi-pronged, including vulnerability to external shocks such as climate change and health. In a report the IMF (2017) indicated that the lack of enforcement and implementation development policies by the government remains a critical challenge in Malawi (IMF, 2017) and (World, Bank, 2018). Generally, the country has significantly failed to address barriers to investment such as unreliable power, water supply shortages, poor telecommunications and poor road infrastructure (Kachere, 2016). Energy shortages still stand out to be a big stumbling block to industrial and economic growth in Malawi. Currently, only about 11.4% of the population has access to electricity supply (Gamula and et al, 2014), this has led to low manufacturing base, and adoption of new technology for industrial development in the country. In Malawi, 95% of electricity is generated from hydropower, whose main source is the Lake Malawi (Gamula, and et al, 2013). Lack of compliance and reinforcement to implement general policies has also significantly affects the water supply generation from the lake for industrial use in Malawi. The poor economic performance is a reflection of low productivity as well as weak value addition in sectors such as agriculture, mining, tourism and fisheries (IMF, 2017), of which all these departments depends on water supply for their production. Water supply is one of the contribute factor to socio economic development in Malawi.

Generally, due to lack of national safety net plans and targets to curb these challenges, there is weak business environment for economic growth in Malawi.

4. Project needs assessment and study results

4.1. Introductions

This chapter will provide an outline of the process used to collect data from stakeholders about water governance and a summary of the outcomes of the assessment will also be discussed.

4.2. Study and Research goal

The study aimed at assessing the effectiveness of the existing water governance system in Malawi, by examining the current water laws, policy framework and regulations and how these are aligned with sustainable rural water supply for domestic and economic activities in Malawi.

4.3. Key Research area and questions

In order get a better understanding and gather more in-depth information about water sector challenges and fill in gaps in the literature, semi-structured interviews with stakeholders were used to collect qualitative data. The interviews focused on the following key governance thematic areas;

4.4. Perception of water governance legislative and policy challenges

4.5. Stakeholder coordination

4.6. Water sector Decentralization system

4.7. Water Sector investment and financing

4.8. Climate change, environmental and natural disaster adaptation mechanism

4.9. Regulation enforcement

In this study 18 interviews were conducted with different stakeholders in the water sector refer to the table below.

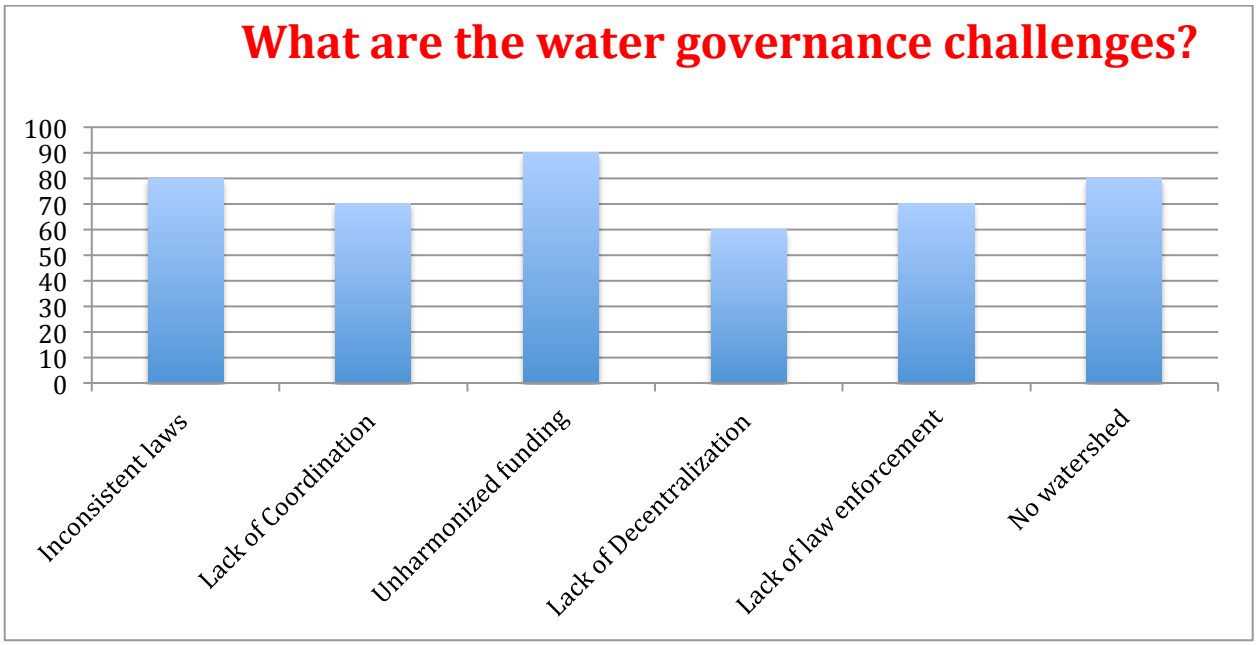
Table of Stakeholder interviewed

Name of stakeholder	Category of stakeholder	Interviewed
Inter Aide	NGO	2
Water For People	NGO	2
USAID	Donor Agency	2
MATAMA	Local NGO	2
Directorate of Water Supply Services	Ministry of Agriculture Irrigation and Water	2
Water Department District	Government	
Water Aid	NGO	2
WESNet Malawi	Water Sector NGO coordinating Body	2
Water Mission Malawi	Faith Based Organization	2
Total Interviews		16

Water governance study stakeholder analysis 2019.

4.10. Study Results

This section will discuss and outline critical needs assessment of the research based on the targeted governance areas in the study



Source: Henrick 2020: Study Stakeholder Interviews, Water government for Sustainable Development

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Study Results narrative

4.10.1. **Perception of water governance legislative and policy challenges**:

One of the key findings in this study has shown that water legislative and policy frameworks have some gaps. The water laws and policy frameworks in Malawi are inconsistent and outdated. The current Water Resources Act of 1969 has not been updated and therefore, it does not explicitly address issues of current and future water resources management.

4.10.2. **Regulation enforcement**.

The Act and Policy still lack clear regulation compliancy on water rights and reinforcement of penalties on non-compliances water and waste governance standards. For example, during the

interview, one respondent said “Malawi has good policies on paper, but lacks enforcement.” Most development partners interviewed stated that water policy lacks a reflection and incorporation of the sustainable measures on the current and future water sources and demand management; therefore, it needs full further reviews and upgrading.

4.10.3. **Climate change, environmental and natural disaster adaptation mechanism.**

This study also found that the current water governance system in Malawi lacks sustainable watershed management and environmental conservation mitigation measures. This obviously creates a challenge of uneven distribution of water supplies, particularly those populations in the highlands where ground water cannot be the option for water supply. The water policy talks about monitoring mechanisms of floods, yet lacks clear direction and provision for mitigating measures on disaster management during floods and droughts, which negatively affects sustainable rural water supply to the displaced populations. During the interviews, one respondent said, “There are no clear mapping and strategies on gravity fed supply system in the country, this affects those areas where access to ground water is a challenge.”

4.10.4. **Water sector Decentralization system.**

Decentralization Policy was introduced in Malawi to promote equitable distribution of government resources and public services in transparent manner, at district and local level there is some variations in rural water coverage between regions and districts in Malawi. This study found that there is a lack of government commitment to implement harmonized service delivery at the district level through the decentralization process. This is broadly due to political

influence and the lack of the government's commitment to coordinate and reinforce policies on water governance in Malawi. As a result, decentralization processes have been only partially achieved in most districts. During the interviews, about 87% of the respondents indicated that political interests influence water investment decisions at all level, for example, politicians would prefer funding projects in their own constituency or districts or region where they come from. In some circumstances politicians are corrupted, and may divert and mismanage the funds. Politics in Malawi influence public resources distribution, where the political popularity and patronage sustainability takes precedence over fulfilling the formal functions of the state. In Malawi, and those in power have great control public resources; eventually those in authority abuse the implementation of the decentralization system. In general, the political culture in Malawi hinders the ability of government officials to professionally implement the policies for the public interest. This poses serious present and future threats to water supply and sustainability in Malawi.

4.10.5. **Water Sector investment and financing**.

This plan compliments and supports the decentralization framework on water sector infrastructural development, so that the district councils becomes the custodians of all water sector responsibilities in planning, provision of water point sources, training of locals masonries to maintain to and sustain of rural water supplies. Despite the establishing this plan, with the aims of providing guidance on water sector financing, asset management and to maximize access to improved water supply in the country, the water sector suffers low budget funding. In recent interviews conducted with staff across the water sector almost 95% agreed that the

water department extremely suffers from chronic underinvestment and is under-resourced in terms of funding and staff shortages, particularly at the district level.

Generally, the water sector is centrally controlled. During the interviews, 80% of the respondents complained about staff shortage, one of the government district water coordinators said, “We have critical staff shortage in our ministry, particularly at district level, this hinders effective follow ups, supervising, training of water point committees and providing backstopping support to rural water supply services.” As a result, this has led to high non-functionality of constructed water sources not being fixed across the country. Without human resource capacity, assessments, monitoring and protection of strategically important water resources cannot be carried out.

4.10.6. **Stakeholder coordination**.

Generally, the study revealed that most of the water governance challenges in the water sector in Malawi is largely due weak stakeholder coordination. Not only are policies and regulations incoherent in the water sector, but also institutions ‘on paper’ inevitably differ from the reality on the ground. The department of water supply and development is not given much priority in terms of financing, literally because it is just a section in a large and complex ministry, therefore, the allocation of meager funding from the national budget can be justified. As a result, effective sector coordination and information sharing is lacking among stakeholders. Due to weak stakeholder coordination, most water projects in rural Malawi are characterized by short-termism due to fragmentation of individual donors and lack of appropriate monitoring and information sharing mechanism including unified database management among

stakeholders. During the interviews 75% of the people, suggested that the water department be upgraded into a full ministry. One of the respondents during the interviews said, “We do not understand why the government is not upgrading the water department into a full stand alone ministry, this department is not give high priority at all.” In principle, the sector survives on donor funding, as a result NGOs have dominated the provision of rural water supply across the country.

However, the presence of the several donors willing to support the water sector if well utilized, could be a great opportunity to enhance harmonization of sector activities. The government needs to utilize the external donor support in shaping and improving policy outcomes through institutional capacity building and development on the ground.

In general, most of the water challenges in the water sector are emerging out of lack of effective governance system in Malawi. The water sector in Malawi urgently needs collective action between the government and its stakeholders to pursue the legislative and policy reform in reviewing and enacting new laws and policy frameworks that help to improve efficiency, equitable distribution and sustainable supply for the present and future generation in Malawi.

4.11. Theory of Change:

Improving water governance through policy updates

In recent years the sustainable utilization of water resources has been placed high on the international development agenda. There have been many calls to give more attention to the problems of water scarcity and on apparent, emerging global water crises. Most critics have stated that these challenges are arising due to poor water governance systems (Chiluwe, 2014).

Major donors, development partners and NGOs realize the importance to prioritize water governance and resource management for sustainable water supply in their countries in response to fresh commitments in the new Sustainable Development Goals. Malawi is a signatory to these global commitments (Mwaluafu, 2018).

Sustainable social economic development cannot be achieved in Malawi without a reliable water supply. While impressive progress has been made to achieve the Sustainable Development Goal Number 6, on water, 1.7 million Malawians remain without access to a safe water sources (UNDP, 2018). Literature has ably demonstrated that despite the rigorous technical, financial, economic and institutional investments undertaken in support of water projects, the sustainability of project outputs and outcomes remains far from certain (Mwaluafu, 2015). Most studies indicate that poor governance has been a major contributing factor in this regard. While Malawi has in recent years developed water policies and strategies, it current water law is very much outdated. The first statutory water law in Malawi was established in 1969, since then it has not been updated or reviewed (Chiluwe, 2014). Therefore, the current policy and governance inconsistencies are not surprising; history has significantly contributed to this regard.

The Malawi water sector faces many governance challenges. Generally, these include mechanisms to coordinate sector stakeholder efforts and failure to establish a full Sector Wide Approach as a common basket for water sector financing, which has been brought on by capacity, leadership and fiduciary challenges. Currently the water sector institutional, legal and policy frameworks present a picture of disintegration and fragmentation, which affects decision-making and coordination on critical issues. In principle there are three key frameworks

that determine an effective and efficient water governance system; institutional legislative, regulatory and policy frameworks. A policy is a widely recognized, clear blueprint that provides guidance and creates the enabling environment for the implementation of sector development initiatives. Legislation is the mechanism for incorporating this policy into national political and legal frameworks, ensuring the effective functioning of the sector, protecting individual and communal water rights and establishing conflict resolution mechanisms. Finally regulation entails the system of instruments that enforces and oversees the implementation of sector policy and legislation. Therefore, there is great need for collective action in pursuing the policy reform to improve rural water governance in the water sector in Malawi. This can be achieved through policy updates, advocacy, education, capacity building, research, and stakeholder dialog in order to improve water sector equity, efficiency and sustainability. Water governance change can be achieved if the following are implemented:

- Effective and efficient harmonized water laws and policy frameworks and strategies in place that foster regulatory compliance and enforcement.
- Effective and strong sector coordination among stakeholders within and across the relevant sectors. There is need for sector networks among technical institutions, civil society organizations, development partners and donor agencies working towards the same vision and sharing expertise to support the achievement of water governance
- Effective water sector decentralization system that will allow local level participation to promote empowerment and ownership. Decentralization promotes accountability and shared responsibility by government, NGOs, development partners, CSOs and communities.

- Harmonized water sector financial investment and funding. There is need for sector basket funding through the sector wide approach.
- Creation of a strong civil society organization that effectively lobbies and influences policy reforms on water governance to ensure there is sustainable and equitable water supply.

Since policy reform requires more time to influence change, therefore, this project will be implemented in phases, for example the first phase will focus on convening legislative and policy reform dialog platforms with all relevant stakeholders to generate collective decisions, develop policies on water governance, and to conduct awareness and information dissemination on policy reforms. The last phase will focus on lobbying and advocating for specific legislative and policy reforms, monitoring and conducting continuous research on water related reforms. However, most of these activities will be overlapping and continuous.

Historically, the water sector in Malawi does not have local civil society organization taking advocacy role of linking decision makers and other key stakeholders on water policy reform dialog. Therefore, there is a need to establish a local organization with strong leadership experience in the water sector to facilitate the implementation and monitoring of the water policy changes in Malawi. The organization will lead and facilitate the policy reform dialog platforms to generate collective and informed decision on water governance issues.

Theory of Change Diagram

Improving rural water governance in Malawi through policy updates, advocacy, education, capacity building, research, and stakeholder dialog

in order to improve water sector equity, efficiency and sustainability.

Input	**Output**	**Outcomes**		**Impact**
Instituting reviews and policy reform dialogue platforms on the existing laws and policies	Water laws and policies updated and enacted	The enacted water laws and policies are fully enforced and stakeholders are compliant to the set standards	Policy reform awareness improved	
Developing policy and advocating for specific legislative and policy reforms	Improved stakeholder coordination in the water sector	All stakeholders fully participate in policy reform platform dialog	Stakeholder participate in information and education dissemination	Malawi has efficient and effective water governance system and policy frameworks, which promotes

				sufficient and sustainable water supply for its citizen
Conducting education and information dissemination awareness activities	There is a well-harmonized water sector financing mechanism and service delivery	Improved water sector decentralization system	Harmonized water funding	
	Continuous policy reviews and research on water governance will be critical	New research data and latest information on water related matters are shared		

Chapter 5

Water Policy Reform Project

1. Water Policy Reform Advocacy Project

This section will present a justification of project on Water Policy Reform and Advocacy. A summary of key study results will be presented and a suggested policy reform outline**,** project strategy, goals and activities. This section will also discuss project partnership, sustainability and monitoring.

2. Project Justification

Although the water sector has greater number of potential partners than many other government departments in Malawi, the challenge is that the sector is large and diverse, and responsibilities are fragmented amongst several agencies, this poses a risk to effectively coordinate the efforts for policy reforms. From history the water sector in Malawi has never had any civil society organization taking advocacy roles on water policy reform and linking decision makers and other key stakeholders for policy dialog for coordinated decisions. The policy reforms and advocacy efforts requires a significant amount of time and effort to influence change and achieve the desired goal. Therefore, there is need for a well established coordinating body and strong personality to facilitate the coordination, implementation and monitoring of the water policy changes in Malawi. Hence the establishment of a local advocacy organization called Water For Generations. The organization will lead the policy reform dialog platforms with water sector stakeholders in Malawi to generate collective and informed policy reform. Water For Generations will facilitate advocacy on water policy reforms and influence

the government and its stakeholders to review and update the water governance laws and policies in Malawi.

3. Project Description

The results of the study have clearly shown that there are many water governance gaps at policy, regulation and institutional level in Malawi. In general, Malawi's water laws are still missing a lot of water governance measures and strategies that are aligned with the current and future water supply and demands. This poses a great concern for sustainable water supply for future generation and social economic development in Malawi. Acknowledging the water governance gaps identified during the needs assessment in this study, the water sector urgently needs collective action between the government and its partners to pursue the legislative and policy reform by reviewing and enacting new laws and policy frameworks that help to improve efficiency, equitable distribution and sustainable supply for present and future generation in Malawi. Therefore, this project on Water Policy Reform Advocacy has been initiated to influence and lobby the government to review water governance system by updating and enact water laws and policy frameworks. Water For Generations, which will become a local non-governmental organization, established on a full understanding of the significance and importance of improving water governance to safeguard the present and future water supply in Malawi will take a leading a role in facilitating the implementation this project. The organization will also be involved in conducting continuous water research, facilitate stakeholder coordination and advocacy for improved water governance and policy development. The success of this project is based on so many factors. For example, it requires a well-experienced team with skills in project management to manage the project, fund raising,

research, partnership building and networking. The other success factor is that the project leadership has a strong collaborative network and connection with other development partners within and across the water sector, institutions of higher learning, and water experts both in and outside Malawi. Stakeholder collaboration will be key in order to generate a new body of knowledge and information to effectively improve water laws and governance system in the country. There are several potential development partners and donors who are interested to get involved in the implementation of water policy reforms in Malawi, for example UNICEF, Water Aid, Plan International, World Vision and many other international development agencies. However, despite the expertise and funding opportunities, some challenges and risks are anticipated such as; lack of commitment by other stakeholders to get involved and participate in the advocacy dialog, political influence and government's resistance to initiate change. Other critical challenges may include unreliable funding.

4. Project implementation Strategy

This project on Water Policy Reform and Advocacy is a multi year project; as a result it will be implemented in phases. The first two years will focus on convening the stakeholders and developing relevant water governance policies. Other activities in this phase will include policy reform awareness and information dissemination. The second phase will focus on lobbying and advocating for specific legislative and policy reforms, conducting capacity building on policy reforms targeting government and communities, and conducting continuous and timely research on water related reforms. Most of these activities will be overlapping and continuous. This project on Water Policy Reform Advocacy is just a starting point; Water for Generations will continue implementing projects in the area of water governance and research. The

organization is interested to conduct further regional research to assess water governance systems in Southern Africa. These researches will be conducted in collaboration with water experts and researchers from research and institutions of higher learning in and outside Malawi. However other areas that need further research and assessment may include the following;

- The study the impact of environmental degradation and climate change on water resources in Malawi and southern Africa.
- Water resources mapping to project future projected supply in Malawi.

Logical Framework: A summary of the project goal, outputs and expected outcomes.

Goal: To ensure the government of Malawi has efficient water governance system, which promotes sufficient and sustainable water supply for its citizen and for socio economic development.
Objectives: • To institute policy advocacy reform dialogue platforms with all relevant stakeholders • To advocate for specific legislative and policy reforms • To conduct education and information dissemination awareness activities. • To conduct capacity building with local government and communities on policy reforms • To conduct continuous and timely research on water related reforms. • To conduct monitoring and evaluation on policy reforms
Process: The goal will be realized by reviewing the existing water laws, policies and strategies,

advocating for new reforms, providing education and information dissemination, hosting stakeholder dialogue platforms, building capacity and conducting research.		
Logic of intervention	**Objectively Verifiable Indicators**	**Sources of Verification**
Outcomes • Policy reform taskforce formed • Water laws and policies updated and enacted • All stakeholders are aware on policy reforms through the disseminated information • Compliance with existing water laws and policy • Effective and efficient water policies and strategies in place • Strong stakeholder coordination • New research data and latest information on water related matters are shared • New organization registered and promoting water governance and	Water sector policies and legislative framework are enacted and are fully functional. Water sector coordination in place and decentralization is practically implemented in the water sector Sector-Wide approach is being implemented in the water sector Water sector regulations are enacted and fully being implemented and penalties are duly enforced. Water for generations is duly registered in Malawi	Number of water laws passed % change in access and distribution of water services in Malawi. Number of penalties effected on non compliant individuals or corporations Registration certificate of the new organization

policy reforms in Malawi		
Activities • National policy dialogue platforms with stakeholders • Taskforce formulation and relevant water governance policy reform advocacy messages produced • Production of Policy reform advocacy petition document • Policy advocacy awareness, education and information dissemination activities • Policy advocacy lobby meetings with policy decision makers and legislatures • Registering a local organization to promote water governance, research and advocacy • Performing continuous water research activities • Conducting relevant policy reform capacity building initiatives with government and local stakeholders	Number of consultative meeting conducted Number of different stakeholders represented Policy reform advocacy document produced Taskforce formed	List of advocacy messages outlined in the document List and composition of taskforce member Registration certificate of the newly registered organization in Malawi Number of development partners and civil society organization policy lobby reforms Number for meeting with policy makers

		List of the policies and laws approved by policy makers
Input: Project team, stakeholders, funding, travel and administrative logistics, telecommunication services	Stakeholders' involvement, Funding and budget	Number of stakeholders involved Amount of Funding approved and expenditures Reports
Assumptions: • That all there is strong coordination and commitment from all relevant stakeholders, donors and civil society organizations in all dialog platforms on water governance reform • The government will provide an enabling environment for policy reform dialogue • There will be adequate and reliable funding for advocacy activities		
Risks: • Change of political environment • Natural disasters and unforeseen global circumstances • Stakeholders willingness to get involved and participate in the advocacy dialog • Lack of funding and stakeholder commitment		

5. Project goals

The vision of this project is “a Malawi with an efficient water governance system, which promotes sufficient and sustainable water supply for its citizen and for socio economic development.” The goal of Water For Generations is to influence the government and all its stakeholders in the water sector to continuously design, review and enforce reforms on water resource governance policies, strategies and approaches in Malawi. This project will raise awareness about how the proposed reforms can promote sustainable water supply for economic growth and development. It will also promote more inclusive formulation and development of water policies, strategies and institutional frameworks to enhance socio-economic development particularly in rural areas in Malawi.

Key concepts and values for water governance framework and structure

Key area	**Expectations**
Water Governance	Legal and legislative framework: Policies, water acts, regulations and strategies
	Integrated Water resources management: Physical water resources management, water points management, Sector performance assessment, effectiveness and operational efficiency, functionality, community structures
Water rights,	Equity and access: Gender participation, access and distribution, quality and quantity, advocacy and petitions on water rights
Funding	Sector-wide approach funding system, list of development partners and funding agent, a well consolidated water sector investment plan and budget in place
Sustainability	Transparency, accountability decentralized water services system,

	local institutional capacity, partnerships, sector-wide funding approach system developed, a well consolidated water sector investment budget and financial management system in place
Partnership and sector coordination	Coordination and stakeholder participation, civil society participation; and public-private partnerships, community and local participation
Monitoring and evaluation	Regular monitoring through reports, Regular, research and surveys for continuous learning Stakeholder bi annual policy reform review meetings

6. Project objectives and activities.

The main objective of this project is to advocate and influence policy change to ensure that Malawi has an efficient, inclusive and sustainable water governance mechanisms in place that are in compliant with global water legal frameworks and standards, and that its strategies are aligned to mitigate the current and future water development challenges. In order to achieve this, the following are the outlined objectives and activities;

a) **Convene policy advocacy reform dialogue platforms with all relevant stakeholders.**

The dialogue platforms will engage government, civil society and faith-based organizations, development partners, water research experts and institutions (both from within and outside Malawi), donor agencies and community leadership in Malawi to discuss and share critical information on water governance and management issues and learn new best practices that can help to influence water policy reforms. All these stakeholders shall be given an opportunity to critically look at my literature review and needs assessment findings to help craft relevant policy advocacy messages. This step will also help build trust and communication within the group. In order to realize this objective, we will start with four regional consultative stakeholder meetings to review, analyze and prioritize the key policy reform advocacy messages. During these meetings we will organize a smaller advocacy task force comprised of motivated stakeholders including water experts (researchers and professionals) and water activists to consolidate the key messages and advocacy framework on water governance issues. Afterwards, we will conduct one national meeting to with all stakeholders and civil society organizations to consolidate the key advocacy message. Finally from this, we will document a final set of policy reform advocacy message that will try to influence policy change

A. **To develop policy, related to water governance and advocate for specific legislative and policy reforms.**

Water For Generation is making suggestions for water governance policy reforms for the government to entirely update and review the Water Resources Act of 1969, which is the country's overarching water law. Some of the initial recommendations that come out of my literature review and needs assessment include:

I. **To enact and update water laws**, policies and regulations to make clear provisions for:
   - The management of ground and surface water resources
   - Mandatory oversight on water quality and water pollution
   - Climate change and natural disaster management

II. **Regulation reinforcement:** The government should conduct a functional review of water regulatory system to effectively implement the set rules, penalties and enforcement mechanisms that will ensure service providers adhere to national service and quality standards

III. **Stakeholder coordination challenges.** There is need for sector stakeholder coordination collaboration including community participation in setting up local level strategic plans, execution and monitoring to promote transparency, accountability and sustainability of the services.

IV. **Decentralization and harmonization of water sector financing and functions**: The government should conduct a balanced functional review on the roles between the central and local structure including local partner. This implies that the water sector should fully enforce, comply with, and implement the national decentralization policy protocols.

V. **Initiating Sector-wide Approach**. The government needs to enact its policies that will allow the establishment of a Sector-wide Approach, in the water sector as a mechanism for coordinating and harmonizing all sector aid funding and development assistance. The goal is to promote prudence, accountability and sustainable use of donor aided water resources. This will help the government to effectively formulate a national budget, make necessary financial forecasts and expenditure management frameworks. Effective water sector funding and financial management is crucial if services are to be provided equitably, transparently and efficiently

VI. **Public accountability and sustainability of water sector:** There needs to be policy reforms that will continuously recognize the importance of stakeholder coordination for public accountability. This will help politicians and planners develop common sense of understanding to better divide public resources over priorities and as way of coordinating a complex sector, building trust through dialogue among all stakeholders and strengthening domestic empowerment and ownership.

B. **Conduct education and information dissemination awareness, Capacity building, and continuous and timely research activities**. These activities will be conducted with civil society organizations and all sector development partners that will help influence policy change on water governance in Malawi. We will publicize and raise awareness about specific policy recommendations and engage with politicians, donors and development organizations to realize them. To share our messages we will conduct one national stakeholder meeting, print and distribute policy reform messages through both print and digital media, conduct national wide sensitization meetings at local, district and regional level, and advocate for reforms in advocacy meetings with political leaders, policy influencers and top government decision makers in the water sector.

C. **Capacity building**: This project will also institute capacity building for the local government staff and community members so that they are able to implement and adapt to the proposed water reforms. The water sector reforms will require a continuous empowerment approach to ensure better management and sustainability of the water resources. The empowerment efforts to sustain the implementation of the water policy reforms will include government and local community technical skills development and this will enable the communities to acquire hands-on management experiences that will empower them to gradually withdrawal from external and government support, eventually creating a spirit of ownership. Trainings are needed in technical skills such as hand pump repair and GIS and also in community participation and management strategies.

D. **Conduct continuous and timely research**. In general, this organization, shall conduct regular water research in order to get the most up-to-date information and innovation on water-related matters. Research topics around specific gaps in water governance knowledge might develop during dialog platforms or from advocacy meetings with politicians.

7. Project Partnerships: This section elaborates on the dialogue platforms that will be established as part of our program to generate collective action for policy reforms. The water sector has wide spectrum of development partners, therefore, each stakeholder group shall have at least two representatives based on their role, expertise and influence in the water sector. The project will establish platforms for policy dialogue and sharing lessons and good practices related to good governance in the water sectoThe stakeholders shall include central and local government structures, policy makers and decision makers including the legislatures, non-governmental organizations, donors and international development agencies, and private sector actors, academics and research institutions, civil society organizations and local leadership representing the beneficiaries. Each of the partners will provide a unique contribution ranging from financial resources, data and information, and technical expertise in collaboration with the stated partners, this project will continuously follow up on the policy reform implementation, engage in continuous dialogue with the government and all other sector partners networking in order to sustain the mission of the project. While each of the stakeholders will have varied roles and responsibilities the critical role of the government is to provide leadership and create conducive environment for policy dialogue and negotiations on water challenges and governance.

Table: Showing Categories Stakeholders:

This table provides the categories and list of water sectors stakeholders and donors in Malawi.

Public	**Private**	**Civil Society organizations**	**International partners**
• Line government ministries (water, health, environment, agriculture and local assemblies) • Regulatory bodies. • The national statistical office	• Water utilities companies like Lilongwe and Blantyre Water Boards, • Drilling companies • Professional bodies/ associations (water operators, cesspool cleaners)	• Water user associations, • The Media • Faith based groups • Research institutions, Universities and think tanks, • Water, Environmental and Sanitation Network I (WESNet) in Malawi • Faith Based organizations • National	Multi-lateral organization for example • United nations agencies • IMF • World Bank) Bilateral donor agencies • USAID, UKaid, JICA, NORAD, All relevant water sectors international

		advocacy groups • Local based water sector non governmental organization • Community based organizations,	non-governmental organizations, foundations and partners Water Aid, Plan International, Catholic Relief Services, Water for People, Inter Aide

A. Stakeholder and their roles

Water sector in Malawi has a wide range of stakeholders. The table below shows key stakeholders and their main roles in the water sector in Malawi.

Partner	**Role and responsibilities**
Government and its relevant departments	• Oversight responsibility for the water sector • National water resources planning and management • Formulate and publish the National Water Policy; oversee preparation of a National Water Resources Master Plan • Manage and share data

	• Manage freshwater resources and hydrology • Provide a technical platform to discuss analytical work on water governance through peer-to-peer exchanges and knowledge sharing
Local and district level government	• Implement water goals under decentralization reforms • Allocate water-resource rights and oversight of the district assemblies' implementation of decentralization policies, including for water resources management
Donors	• Funding, financing and supporting the water sector investment
International Development partners and donor agencies	• Work with local government structures to mobilize community, and facilitate the implementation of rural water projects and management of infrastructure • Support the implementation of the water governance targets
Civil society organizations (CSO)	• Advocate and influence policy change and advise governments in taking the needed steps for effective water management reforms through policy dialogue across decision-makers at different levels • Work with the grassroots, local organization's participation &

	engagement in water resources management dialogue which will lead to sustainable and efficient rural water supply
Academia and think tanks	• Providing effective, concrete evidence based expert advice, that will contribute to the continuous national dialogue on issues related to water governance • Contribute to the design of principles on water governance and Indicators on water governance to engage decision-makers to commit to action
Local community	• Participate and contribute the locally available resources, • Manage water sources and facilities to enhance autonomy/ownership and sustainability • Provide performance measurement by ongoing monitoring and reporting of accomplishments particularly progress on policy reforms at community level.

B. The risks/assumptions of partnership

The primary goal of partnerships in this project is to strategically join efforts with other development actors in the water sector to collaboratively work together by forming a coalition to advocate for legislative and policy reform in Malawi through shared responsibilities and resources. The level of partnership commitment depends on deep sense of shared vision and

interests, therefore, this project is expected to identify the right partners who are willing to participate and pay greater attention to the water governance issues in Malawi. The partnership in this project will be uniquely negotiated, planned, designed and sustained. The assumption is that the political actors and government will be cooperative to create an enabling environment for policy reform dialog.

However, partnership management has its own challenges and risks. Some of the key challenges may include capacity of other partners and lack of commitment to participate and get involved in the project. The other fundamental challenge is power and leadership roles among actors. The recognition and balancing in organization strength, capabilities and financial power may lead to roadblocks for collaboration and diffuse the relationships. The water sector has wide range of partners; the division of power and responsibility may create fears and uncertainties about how roles and responsibilities will be shared among partners. The imbalance usually generates friction, reduces effectiveness and discredits the basic principle of development as co-operation. This project will ensure that the purpose and expected results of the partnership as well as the respective roles and responsibilities of each partner are clearly defined and commonly agreed.

7. Project Sustainability

In order to achieve long-term project impacts, this project will promote partnerships and build sustainable dialogue platforms, continuous learning through research and knowledge management, capacity development, and justice and community development.

a. **Promotion of continuous long-term partnership commitment:** Water

sector policy reforms require a strong foundation for stakeholder dialoguing and networking commitment. This will start with the stakeholder policy dialog platforms and continue with biannual water governance stakeholder negotiations forum in order to enhance dialogue with government, water sector development partners, donors and local communities on water policy reform and governance. The stakeholder commitment is expected to build trust and ownership of the policy reforms by sharing the reports and advocating for effective water governance changes among partners.

b. **Research, knowledge and information sharing:** Continuous policy reviews and research on water governance will be critical. Therefore, different sources of knowledge from natural and social sciences, qualitative and quantitative knowledge, empirical, and interpretative approaches will be conducted and promoted in this project. This research is required to facilitate the in- depth knowledge exchange among interdisciplinary teams in the water sector to regularly review and create policies that are adaptable and responsive to the current and future water supply and demand challenges. This will help government and its development partners to exchange and share valuable insights, experiences and good practices and evaluate the progress on the governance and water policy management. The biannual forum will help water stakeholders develop a culture of reflection and analysis of ongoing policies and practices for future programming.

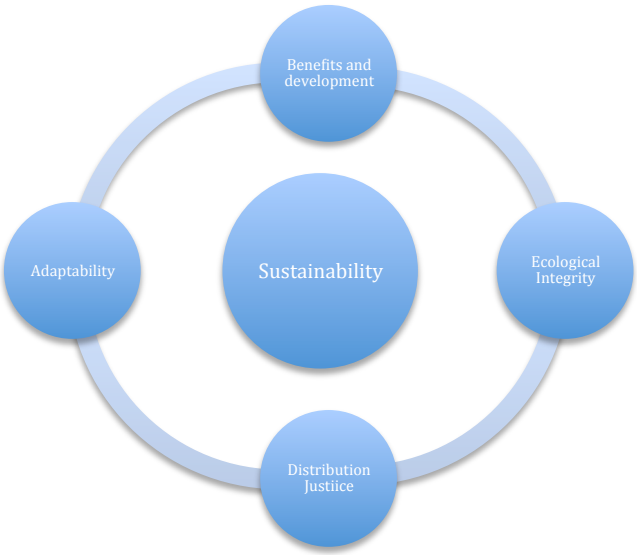
c. **Capacity Development:** The other important area to an effectively implemented policy reform is capacity development of the water sector staff

at all levels. The successful implementation of water governance reform requires a great commitment on skills and capacities development of the water sector teams. Capacity development involves promoting awareness of water governance and its application by developing relevant information and tools, and conducting training. This project will provide capacity-building training aiming at developing skills, integrity and capacities to effectively respond well to policy formulation, strategy development and implementation. These trainings will specifically focus on, the development of inclusive water governance systems that can respond to changing social, economic and hydrological conditions.

d. **Justice and community involvement:** Water-policy reforms from government to community-centered approaches have gained momentum in recent years following the decentralization system in Malawi. The emergence of community-centered approaches not only offers an alternative in managing failed community water-supply systems, but also provides an opportunity for community empowerment through user self-organizing into recognized local organizations, e.g., associations, committees, and cooperatives. This project will promote a community-based approach, which encourages the need for communities to assume significant responsibility to sustain the water resource. The communities will be encouraged to formulate locally agreed operational rules on resource use and user behavior including sanctions (often contained in constitutions), and a management plan for the water point or source mutually agreed by key stakeholders

including decision-making powers.

Figure: The sustainability wheel for the water governance system



Source: Schneider, Water Governance in Africa

8. Project Monitoring and Evaluation:

The rationale of this project is that the water challenges in Malawi are mainly a governance crisis. The water policy reforms and governance faces implementation complexity. The interdisciplinary approach takes into account the water system analysis focusing on, legislative system, policy framework and public administration. These domains influence water governance capacity. In this section of the project the overarching goal is to assess, monitor and evaluate progress in the implementation of the policy reform in Malawi. This assessment will also help identify the gaps that may still exist in implementation of water policies policy reforms. Therefore, the organization has set monitoring and evaluation indicators that will help assess the expected outcomes of this project.

9. Role of Community in measuring the success of the program

More than ever before, the community development field is under the gun to prove that it is making a difference in its targeted areas. Now people want to know whether a development has really been implemented and that there is evidence for improvement and positive impact in that community. The reforms will take a long time to be realized and manifest on the ground. However, their input and feedback is valuable as a long-term understanding of the impacts of the reforms. In general, the role of the community in this project is to provide long-term performance outcomes and feedback on policy reforms manifestation at community level.

However, good water governance at community level can be observed by improvement in the technical skills, whereby the locals people acquire hands-on water source management experiences such as hand pump repair and participate in decision making on matters related to rural water supply. The manifestation of good governance is when the communities gradually need less external and government support, eventually become independent and possess the spirit of ownership.

Bi-annual policy monitoring dissemination meetings shall be conducted to share reports and progress on water policy reforms. These meetings and workshops will aim at exchanging and sharing valuable insights, experiences and good practices and evaluating the progress on the governance and water policy management. During these meetings we will ask participants to fill out a short survey to measure key indicators of water governance success from their perspective: trust, coordination, information sharing and inclusivity. This is one way to Water for Generations will generate some monitoring data.

Table: Measuring the success of the project

The table below shows some key indicators that will be used to assess and measure the success and impact of this project.

Project Indicator: Measuring the success of the project on policy reform advocacy

Description of Indicator	**Indicator**
Policy reform advocacy meetings	Number of advocacy meetings conducted at the local, district and regional level Number of stakeholders in attendance Number of petitions/recommendations inclusively generated
	% of the petitions approved by stakeholders
	% of stakeholders reporting high degree of coordination in project activities
Formulate an advocacy task force	Number of stakeholder task force members comprising the task force
	Attendance at task force meetings
	Number of policy reform advocacy messages agreed on by task force
Print and disseminate the policy reforms	Number of copies of recommendations printed and distributed
	Number of radio and newspaper educational pieces

	Number of sensitization meetings conducted
Policy reform Lobby meetings	Number of meeting conducted with the policy makers and legislatures and Policy reform meeting report
Water laws and Policy framework changed	Number of updated policies, legislation and regulations; and strategies enacted
Regulation enforcement	Number of penalties and fines executed
Decentralization system in place in the water	Number of stakeholders participating in the decision making at district and local level compared to pre-reforms
	Number of community representatives participating at the district and local level
Political and public accountability	Politicians and water sector partners work in collaboration to ensure equal distribution of water resources
Water laws on climate change and natural disaster resilience are in place	List of policies and legislative policies enacted to address climate change and natural disaster
Harmonized water sector investment and Funding	Sector-wide approach system in place in the water sector
	A consolidated water sector investment budget and financial management system in place
Registration of new organization	Registration certificates produced for Water For Generations

10. Project Budget

Water Sector Policy Reforms Advocacy Project Budget

Description	Unit MWK	QTY	Required	Amount	
Main activities				**MWK**	**USD**
Regional consultative stakeholders review meetings	5,475,000.00	1	4	21,900,000.000	28,968.25
Taskforce meetings	3,678,150.000	1	2	7,356,300.000	9,730.56
National stakeholder meeting to sharing policy reform message	5,475,000.00	1	4	21,900,000.000	28,968.25
Development and Printing through both	2,570,000.000	1	1	2,570,000.000	3,399.47
National advocacy sensitization meetings	8,750,990.000	1	4	35,003,960.000	46,301.53
Print and digital media mass sensitization	8,765,000.000	1	1	8,765,000.000	11,593.92
Lobby meetings with political and legislatures and government	13,780,500.000	1	1	13,780,500.000	18,228.17
Monitoring and Evaluation expenses	1,579,000.000	1	3	4,737,000.000	6,265.87
Telecommunication expenses	175,000.00	1	12.00	2,100,000.00	2,777.78
Project fees expenses	2,158,000.00	1	4	8,632,000.00	11,417.99

Staff Travel expenses	1,250,000.00	1	4	5,000,000.00	6,613.76
Subtotal				**131,744,760.000**	**174,265.56**
Administrative logistics					
Staff time expenses	32,580,000.00	1.00	1.00	32,580,000.00	43,095.24
Miscellaneous expenses	2,243,890.00	1	1	2,243,890.00	2,968.11
Total				34,823,890.00	46,063.35
Total budget				**166,568,650.000**	**220,328.90**

11. Project Implementation Plan October 2019 – September 2024

Water For Generations will implement this project over five years. The first year of this project will focus on conducting dialogue platforms and generation of key policy reforms and advocacy message with all water sector stakeholders. The bulk of the project activities will occur in the next 2 years, but the hope is that policy advocacy, research and educational, capacity building, monitoring and evaluation activities will continue beyond this point.

12. Project timeframe

Time frame	**2019 - 2020**		**2021 - 2024**	
Activities	**First 6 months**	**Last 6 months**	**2020 – 20 22**	**2022 - 2024**

Development of project proposal										
Proposal review and approval by Project Advisor										
Project grant Application										
Project team recruitment										
Literature review, needs assessment and data analysis										
Project implementation										
Formulation of policy advocacy taskforce										
National dialog platforms meetings with stakeholders										
Development and Printing through both										
National advocacy awareness, education and information dissemination activities using all forms of media										
Lobby meetings with political and legislatures and government										
Monitoring and Evaluation										
Reporting										

Bibliography

African Development Bank [AfdB]. 2013. *Malawi Country Strategy paper*. [Online] Available at: http://www.afdb.org/en/countries/southern-africa/malawi/malawi-economic-outlook/. Accessed: 25 March 2015

Barreteau O, and Daniell K.A., 2015. Water governance across competing scales: coupling land and water management. Journal of Hydrology, Elsevier, 2014, 519, pp.2367-2380. 10.1016/j.jhydrol.2014.10.055 .

Biswas, A. K. & Tortajada, C. 2010: Future water governance: problems and perspectives. Int. J. Water Resource. Dev. 26 (2), 129–139.

Cameira M, and Pereira L, 2019: Innovation Issues in Water, Agriculture and Food: Institute for Agronomy, University of Lisbon, 1349-017 Lisbon, Portugal

Chiluwe, Q and Nkhata Bimo 2014:Analysis of water governance in Malawi: towards a favourable enabling environment? , Monash University, and University of Pretoria, South Africa, Published *in* Journal of Water, Sanitation and Hygiene for Development.

Chipofya, V., Kainja, S. & Bota, S. 2009 Policy Harmonization and collaboration amongst institutions – A strategy towards sustainable development, management and utilization of water resources: case of Malawi. Desalination 248 (1–3), 678–683.

Chipofya, V., Kainja, S. & Bota, S., 2012: Integrated water resources management – key to sustainable development and management of water resources: case of Malawi. In: Sustainable Development – Energy, Engineering and Technologies – Manufacturing and Environment pp. 145–170.

Cullet, P. 2012: Is water policy the new water law? Rethinking the place of law in water sector reforms. IDS Bull. 43 (2), 69–78.

FAO, 2009: Law for Water Management: A Guide to Concepts and Effective Approaches. FAO, Rome, Italy.

FAO. 2014. *'Energy-smart' Food for people and climate*. Issue Paper. Rome: United Nations Food and Agriculture Organization.

FAO. 2016. *The State of Food Insecurity in the World 2014*. Rome: Food and Agriculture Organization of the United Nations.

FAO, 2017: Water for Sustainable Food and Agriculture A report produced for the G20 Presidency of Germany: Food and Agriculture Organization of the United Nations Rome, 2017: ISBN 978-92-5-109977-3

Ferguson, A. E. & Mulwafu, W.2005: Irrigation reform in Malawi: Exploring critical land-water intersections. In: African Water Laws: Plural Legislative Frameworks for Rural Water in Africa (B. Van Koppen, J. Butterworth & I. J. Juma, eds). IWMI, Pretoria, South Africa.

Global Water Partnership, 2000b: Integrated Water Resources Management. TAC Background Papers Series. Global Water Partnership, Stockholm, Sweden.

Government of Malawi 1969: Water Resources Act. Department of Irrigation and Water Development, Lilongwe, Malawi.

Government of Malawi, 2005: National Water Policy. Ministry of Irrigation and Water Development, Lilongwe, Malawi.

Government of Malawi 2012: Performance Report 2011. Ministry of Agriculture, Irrigation and Water Development, Lilongwe, Malawi.

Grigg, N. S., 2011: Water governance: from ideals to effective strategies. Water Int. 36 (7), 799–811.

Miller, F. (2007). Seeing 'Water Blindness': Water control in agricultural intensification and environmental change in the Mekong Delta, Vietnam. Environment, development and change in rural Asia-Pacific: Between local and global (pp. 186–207). Routledge Taylor & Francis Group, London.

Mdee, A. and Harrison, E. 2019. Critical governance problems for farmer-led irrigation: Isomorphic mimicry and capability traps. Water Alternatives 12(1): 30-45: School of Global Studies, University of Sussex, Brighton, UK.

Mulwafu, W. and Chipeta C.2012: Water Demand Management in Malawi: Problems and Prospects for its Promotion: University of Malawi, Chancellor College.

OECD. (2011). Water governance in OECD countries: A multilevel approach. OECD Publishing. Pahl-Wostl, C., Gupta, J., & Petry, D. (2008). Introduction: Global governance of water. Global Governance: A Review of Multilateralism and International Organizations, 14(4), 405–407.

Parris, K. (2010). Sustainable management of water resources in agriculture. Technical report OECD.

Population Action International (PAI), 2011: *Mapping Population and Climate Change.* Washington, DC.

The World Bank Group, 2019: Malawi Country Water and Environmental Analysis Report, The World Bank , Report No: AUS0000489: Washington, DC, 2019. www.worldbank.org

Tran T and Vo T 2017: Water governance for sustainable development: International

practices and implications for the Mekong Delta region: Australian National University and University of Economics, Australia Journal of Economic Development.

UNESCO, 2015: Water for Sustainable World: United Nations World Water Assessment and Development Report 2015.

Oates N and Mwathunga E., 2018: A political economy analysis of Malawi's rural water supply sector. Overseas Development Institute, London.