



Master Dissertation

Submitted in partial fulfillment of the requirements for the Master degree in

WATER POLICY

Presented by

Délice Muhoza

SECTORAL WATER AND SANITATION POLICIES: ANALYSIS OF REGULATORY DETERMINANTS FOR UNIVERSAL SERVICE

Case Study: Burkina Faso

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Master Dissertation Submitted in partial fulfillment of the requirement
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**“SECTORAL WATER AND SANITATION POLICIES IN BURKINA
FASO: ANALYSIS OF REGULATORY DETERMINANTS FOR
UNIVERSAL SERVICES”**

Track: WATER POLICY

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30 November, 2021

Statement of the Author

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Dedication

I dedicate this work to my beloved parents and siblings, and all African Youth who strive to help the Continent achieve the Agenda 2063, The Africa We Want.

Biographical sketch

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Abbreviations and Acronyms

AfDB	African Development Bank
CGCT	Charte Générale des Collectivités Territorielles
COVID-19	Corona Virus Disease of 2019
DANIDA	Danish International Development Agency
DGAEUE	Direction Générale de l'Assainissement, Eaux Usées et Excrétas
DREA	Direction Générale de l'Eau et Assainissement
DWS	Drinking Water Supply
MAHRH	Ministère de l'Agriculture, Hydraulique et Ressources Halieutiques
MDG	Millennium Development Goals
NGO	Non-Governmental Organization
ODA	Official Development Assistance
ONEA	Office Nationale de l'Eau et Assainissement
PAGIRE	Plan d'Action pour la Gestion Intégrée des Ressources en Eau
PNAEPA	Programme Nationale d'Approvisionnement en Eau Potable et Assainissement
PANEA	Plan d'Action National pour l'Eau et l'Assainissement
PNDD	Politique Nationale de Développement Durable
PS-EEA	Politique Sectorielle - Environnement, Eau et Assainissement
PoWT	Point of Water Treatment
SDG	Sustainable Development Goals
SIDA	Swedish International Development Agency
WASH	Water, Hygiene and Sanitation
WHO	World Health Organization
WSS	Water Supply and Sanitation

Abstract

Africa has a number of challenges in terms of water and sanitation accessibility and availability. One critical concern is Africans' ability to acquire clean drinking water in both rural and urban locations. This is due to mainly rapid population growth and climate change but also regulatory issues such poor policy implementation and also the institutional set up when it comes to coordination. To that, this study was conducted to analyze the water and sanitation regulatory determinants for universal services in Burkina Faso. Using the rapid review method, the study examined the policies involved in the Water Supply and Sanitation sector, the institutional framework of the sector as well as the investments and financial allocations. Looking at the different challenges affecting the Water Supply and Sanitation sector, recommendations were made in order to improve the rate of water and sanitation services availability and accessibility in Burkina Faso.

Key words: Water supply, sanitation, policies, strategies.

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CHAPTER ONE: INTRODUCTION

1.0. Introduction

Africa is confronted with several difficulties to do with water and sanitation accessibility and availability. One important issue is the capacity of Africans in both rural and urban areas to obtain safe drinking water. According to the WHO (2006), just 59% of the world's population had access to appropriate sanitation systems, and efforts to meet the Millennium Development Goal of 75% by 2015 would fall short by over half a billion people.

Access to safe drinking water and sanitation in rural Africa is far worse than the statistics suggest. The WHO (2006) says that just 16% of individuals in Sub-Saharan Africa had access to drinking water through a home connection (an indoor tap or a tap in the yard) in 2004. Not only is there a lack of easily available drinking water, but even when water is available in these regions, there is a danger of pollution owing to a variety of causes. Due to insufficient financial resources, wells and water sanitation facilities are not adequately maintained when they are created. Water quality monitoring is not done as frequently as it should be, and a lack of information among those who use the water source causes them to assume that as long as they obtain their water from a well, it is safe. Once a supply of water has been established, the quantity of water is frequently prioritized over the quality of water (Awuah, Nyarko, Owusu, & Osei-Bonsu, 2009).

There are insufficient water resources to supply safe drinking water to Africa's whole population. Surface water supplies are frequently contaminated, and the infrastructure required to transport water from fresh, clean sources to dry places is prohibitively expensive. Groundwater is the greatest resource to tap to give clean water to the majority of regions in Africa, particularly rural Africa, because it is naturally protected from bacterial contamination and is a stable source during droughts. However, the high expenses of drilling for water, as well as the technical hurdles of locating sources large enough to supply the population in demand, present challenges that limit the exploitation of the resource.

Urban areas confront a unique set of problems when it comes to providing safe drinking water and sanitation. Rapid urbanization, particularly in Sub-Saharan Africa, has resulted in huge amounts of water being taken from existing sources. Water influx, in addition to human waste influx, has outpaced the development of wastewater management systems, resulting in pollution of natural water bodies, unintentional use of wastewater in irrigated agriculture, irregular water supply, and

environmental concerns for aquatic life due to high concentrations of pollutants flowing into water bodies (Van Rooijen, Biggs, Smout, & Drechsel, 2009). Overcrowding in urban slums makes it much more difficult to regulate sanitary problems and illness outbreaks caused by raw sewage exposure.

Let us now look at one African country, Burkina Faso, which is in on the margins of the Sahara in West Africa. With its dry tropical climate expressed in short rainy season and a long dry season, making it a water-scarce country, Burkina Faso has very limited access to safe drinking water and sanitation, which contributes to the persistence of waterborne illnesses such as diarrhea. To make matters worse, much of the nation is located inside the growing Sahel, where a tendency of decreasing rainfall has resulted in longer, more extreme droughts and flooding after heavy rain events.

The gradual deterioration of rainfall-dependent agricultural livelihoods in rural regions has resulted in a continuous increase in rural migration to urban and semi-urban areas, notably Ouagadougou. Population expansion in semi-urban communities will continue to put strain on current water supply and sanitation infrastructure, while investments and management capacity lag.

The necessity to increase water supply and, notably, sanitation services to rural and quickly developing semi-urban regions is one of the major problems that the WSS industry faces. Furthermore, WSS service providers need substantial expenditures in human resources, financial management, and procurement systems. Despite these obstacles, Burkina Faso has made progress and is on pace to fulfill the Millennium Development Goal (MDG) objectives for total drinking water and urban sanitation assuming WSS sector investments remain at their current levels.

In Burkina Faso, the sector is managed by government ministries and directorates, the public water utility, and municipal/local communities. The WSS industry is overseen by the Ministère de l'Agriculture, de l'Hydraulique et des Ressources Halieutiques (MAHRH, Ministry of Agriculture, Hydraulics, and Fishery Resources). MAHRH's water management department, Direction Générale des Ressources en Eau (DGRE), and the water and sanitation utility ONEA (Office National de l'Eau et l'Assainissement, or National Office of Water and Sanitation), share responsibility for infrastructure and WSS projects. Finally, as part of a broader decentralization

effort, the government is delegating power for the operation of WSS services to 49 metropolitan municipalities and 302 rural communities.

When it comes to the regulatory framework of the WSS sector in Burkina Faso, the Water Act of 2001 recognized the significance of safe drinking water, adequate bathroom facilities, and excellent cleanliness. The government has safeguarded five water basins and established a legislative framework to ensure that people all throughout the country have access to clean water. An action plan for integrated water resource management (IWRM), PAGIRE, which outlined the decentralization of the WSS sector and defined metropolitan centers, semi-urban zones, and rural areas was approved in 2003. The state also implemented a National Water Supply and Sanitation Program (PNAEPA) in 2006, which comprises a comprehensive set of WSS policies and plans for the whole sector. Strategic sanitation plans have been established in the major towns of Ouagadougou and Bobo Dioulasso, as well as four secondary centers.

The government passed the Charte Générale des Collectivités Territoriales (CGCT, General Charter of Territorial Collectives) in 2004, which stated that beginning in 2009, water supply provision in rural regions would be the responsibility of local communities. However, the legislative framework and technological strategy for transferring authority are still in the works, slowing CGCT implementation.

The government of Burkina Faso revised the water policy, which was approved in 2015, to be implemented by 2030 through the different strategic plans like PAGIRE, PNAEP and PGEA working on the time frame of 2016-2030. Besides, a sectoral policy on environment, water and sanitation was approved in 2018 to be implemented by 2027.

Water is necessary for human existence, health, sanitation, and cleanliness. The fast increase of the human population, along with the consequences of climate change, has highlighted the necessity for consistent and equitable access to water and sanitation. Water and sanitation utilities, on the other hand, have the challenge of delivering water supply and sanitation services while being financially viable.

1.1. Problem statement

Providing safe drinking water and basic sanitation is one of the major challenges faced by governments in many Sub-Saharan African countries, including Burkina Faso, despite the issue

being addressed and prioritized in various national, continental, and international documents, strategies, declarations, and conventions. Aside from rapid population expansion and climate change, the inadequate regulatory structure for both water and sanitation utilities is to blame. To make matters worse, a lack of priority for these services prevents many countries from allocating enough budgets to the water and sanitation sectors.

As a result, this study looks at the policy and regulatory framework in water and sanitation institutions in Burkina Faso in general and more specifically on the regulatory determinants for water and sanitation policies for universal services in the country. The study also provides recommendations and strategies for improving the water and sanitation sector as the country strives to meet the water and sanitation goals. Besides, it leaves a room for further research on the same topic offering up to date recommendations for the WSS sector.

1.2. Research objectives

The **main objective** of this research is to analyze the regulatory determinants for water and sanitation policies for universal services in Burkina Faso. This will be achieved through the following specific objectives - each specific objective has a corresponding research question:

The **specific objectives** are:

1. To review the current water and sanitation policies, their implementation and performance in Burkina Faso through:
2. To propose a framework/guidelines for water and sanitation regulatory determinants for ensuring universal services in Burkina Faso;
3. To provide recommendations and strategies to be used for a better policy formulation of the water and sanitation sector.

1.3. Research questions

1. What is the regulatory framework within the water and sanitation utilities in Burkina Faso?
2. To what extent does the regulatory framework affect the financial allocations and investments in the water and sanitation sector?
3. How does the regulatory framework affect the social behavior in the water and sanitation sector?

1.4. Research hypothesis

The regulatory determinants do not influence financial decisions and social behavior in the water and sanitation sector.

1.5. Significance of the study

In terms of institutions, infrastructure, and service levels, the urban WSS sector in Burkina Faso is well ahead of the rural sector (IRC, 2019). While predictions indicate that 60% of Burkinabe would still live in rural regions by 2030; the water and sanitation access levels in rural regions are so much lower and therefore they need to be prioritized during the SDG era, particularly in the transition to universal access; not forgetting that the communes' participation in this is critical for both rural water and rural sanitation.

Therefore, in line with the African Union Agenda 2063, goal 1 of ensuring a prosperous Africa based on inclusive growth and sustainable development and as well related to the SDG 6 to ensure availability and sustainable management of water and sanitation; this research, through its findings, will help the water and sanitation utilities to address the regulatory determinant, i.e the different policies that involve water and sanitation, the different strategic plans, and their effects/impacts on the financial decisions and social behavior when it comes to the water and sanitation sector especially in the rural areas. This will ensure better planning of projects and activities aiming at providing regular basic water and sanitation services for a sustainable development.

With the policies and strategic plans in place, better water resource management practices will be valued in the sector which will help to meet the basic water needs of the population of Burkina Faso regardless of it being a water scarce country.

CHAPTER TWO: LITERATURE REVIEW

2.0. Introduction

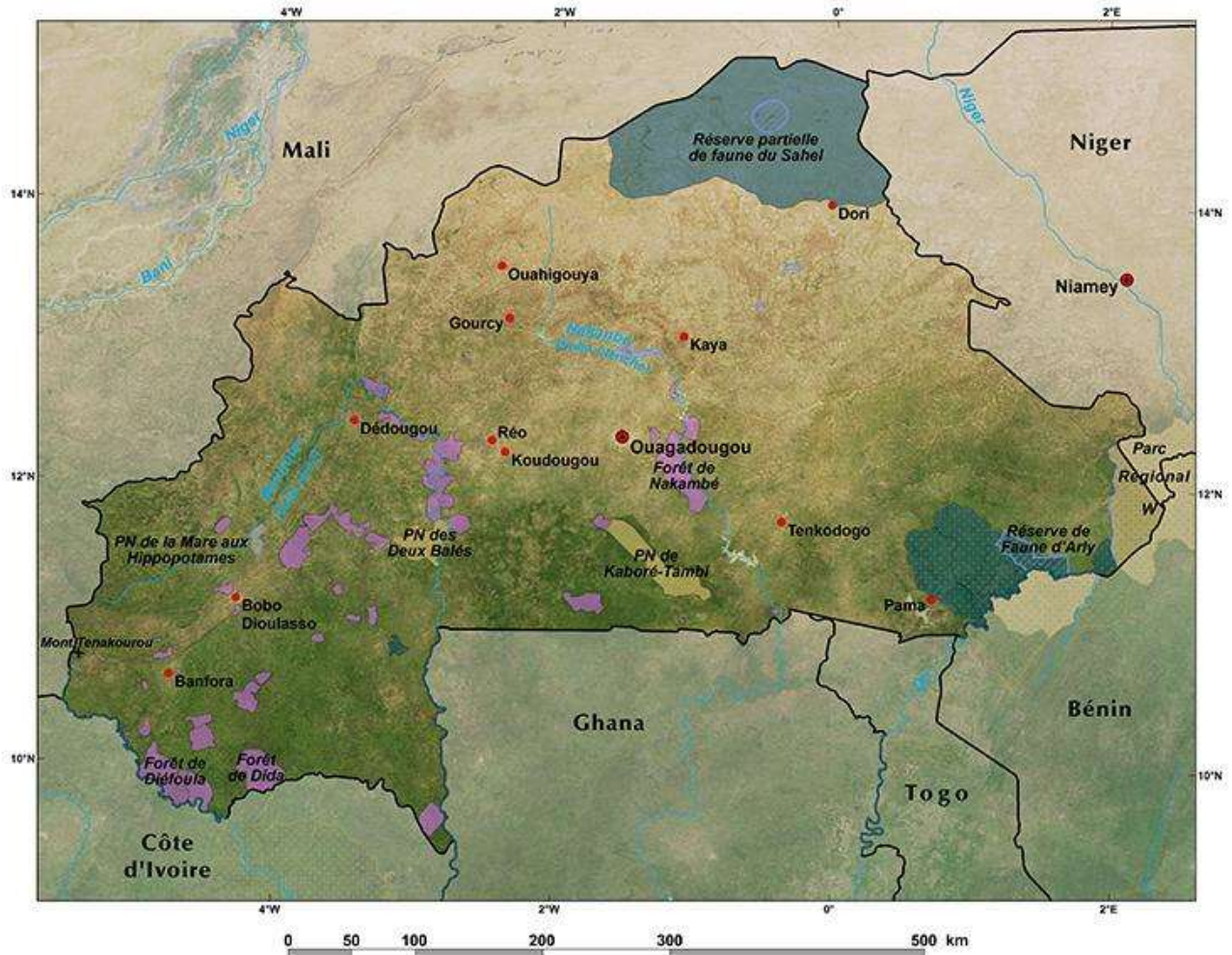
This chapter focuses on the general overview of Burkina Faso, i.e. its geographical situation, the institution in charge of water and sanitation. It also talks about the general accessibility of water and sanitation services around the world and the different determinants that are key in the water and sanitation sector.

2.1. Overview of the Study Area: Burkina Faso

2.1.1. Geographical situation of Burkina Faso

Burkina Faso is a 274,000-square-kilometer continental republic located beneath the loop of the Niger River. It is bounded to the north and west by Mali, to the north and east by Niger, to the south and east by Benin, and to the south and west by Togo, Ghana, and Côte d'Ivoire. The low slope of the relief obstructs the flow of water from the three rivers that drain the country: Mouhoun, Nazinon, and Nakambé (old black, white, and red voltas). The nearest point to the Atlantic is 450 kilometers distant. The plateaus have an average elevation of 450 meters. Tenakourou, the highest peak in the nation, rises to 747 m and is located in the west. Burkina Faso, a landlocked country in the Sahel, is still largely rural; it is known as "the Africa of villages."

Figure 2.1. Map of Burkina Faso (UN Geospatial, 2016).



-  Réserve de Biosphère / Biosphere Reserve
-  Site Ramsar / Ramsar Site
-  Parc National / National Park
-  Réserve de Faune / Faunal Reserve
-  Forêt Classée / Forest Reserve
-  Capitale Nationale / National Capital
-  Autre Ville / Other City

With an annual average temperatures ranging between 27-30°C, and monthly averages ranging from 15-45°C, Burkina Faso has a dry tropical climate with a short rainy season and a lengthy dry season, which is influenced by the movement of the Intertropical convergence zone (ITCZ). The nation is divided into three separate climate zones which are: the Sahel area located in the country's north and receives the least amount of rainfall, with less than 600mm of annual precipitation; the North-Sudanian zone located in the country's center and receives 600-900mm of rain each year

and finally, the South-Sudanian zone in the country's south which has an annual average rainfall of more than 900mm. The prevailing tropical weather, with warm, dry winters and hot, wet summers causes an erratic and changeable rainfall, causing problems like water scarcity and/or floods to people and livelihoods so frequently.

The natural environment is divided into two types: the Sahel in the north and the savannah in the south which makes Burkina Faso a desolate and dry area with a scarcity of natural resources as it holds just a few amount of manganese, gold and phosphate resources.

The great majority of the population is agrarian, cultivating sorghum and millet, groundnuts, sesame, and other crops for their own consumption, with cotton being one of the most important export goods.

Table 2.1. Summary of Burkina Faso

Country name	Burkina Faso
Capital city	Ouagadougou
Official language	French
Monetary currency	Franc CFA
Area	274 000 Km ²
Population	21,552,172 (2021)
Population projection in 2030	27,404,039
GDP Growth	8.9% (2021)

2.1.2. The institutional and regulatory framework of the water and sanitation sector of Burkina Faso

The Sustainable Development Goals (SDGs) agenda addresses core difficulties of WSS service delivery, extending beyond increased access and putting a significant new focus on sustainability. The SDGs call for innovative approaches to the establishment of WSS sector policies, institutional strengthening, and regulation that result in long-term WSS results through higher efficiency and improved financing mechanisms. Policies are the frameworks within which governments make decisions that direct particular activities with the intention of accomplishing certain goals. There are several policy procedures and technologies available for developing and implementing

policies. Institutions contain the rules of the game as well as the organizations and procedures that are set up to create policies and carry out actions based on those rules. Regulation is described in the as "the persistent and targeted control exercised by a governmental agency over activities valued by a society." It entails establishing rules and ensuring that those rules are followed. (Glass,2017).

Despite being one of the world's poorest nations and facing substantial technical, resource, and capacity restrictions, Burkina Faso has achieved remarkable advances in WSS service performance and access. This is especially true for urban water supply services and the performance of the national water utility, Office National de l'Eau et de l'Assainissement (ONEA), a public-sector provider that is experimenting with new forms of financing and private investment. These advances came as a result of the adoption of a series of sector reforms (between 1990 and 2010), which were prompted by donor pressure due to the 1990s' poor economic condition and strong urban development rates, along with an increasingly acute water issue. The reforms implemented included: (a) policy interventions through the development of comprehensive policies and targets to clarify institutional responsibilities and sector goals; (b) institutional reforms in relation to the national utility ONEA to increase autonomy and accountability, improve efficiency, and enter into partnerships with the private sector; (c) enhanced regulation through the Contract Plan and Financial Equilibrium model, (d) adoption of a policy of demand-led strategic sanitation plans to encourage sanitation expansion, and (e) adoption of a strategy of rural partnerships with the small-scale private sector. (Mumssen, Saliel, & Kingdom, 2018)

The Water and Sanitation sector of Burkina Faso is managed by government ministries and directorates, the public water utility, and municipal/local communities, with MAHRH (Ministry of Agriculture, Hydraulics, and Fishery Resources) having the overall responsibility.

In urban and semi-urban areas of Burkina Faso, ONEA which is a national water utility takes care of the water supply and sanitation services; and the communes (municipalities), the lowest administrative unit above villages, are institutionally responsible for service provision in rural areas, similar to the 'district' level in other countries; but they all report to the Ministry of water and sanitation as it controls the overall system. The sector functions as follows:

- The Ministry of Water and Sanitation develops public policies and establishes regulatory, monitoring, and evaluation targets for the sector.

- The National Utility (National Office for Water and Sanitation – ONEA) plans, develops, expands, operates, maintains, and delivers water and sanitation services in cities with a population of over 10,000 people.
- The majority of rural projects are initiated by the national government or its development partners. Municipalities are then entrusted with management.
- Municipalities own WASH assets and are in charge of their management, which can be delegated to private entities, associations, or communities. Municipalities, on the other hand, do not receive enough funding to support the expansion and sustainability of services.

The following figure shows the institutional framework of the water and sanitation sector in Burkina Faso.

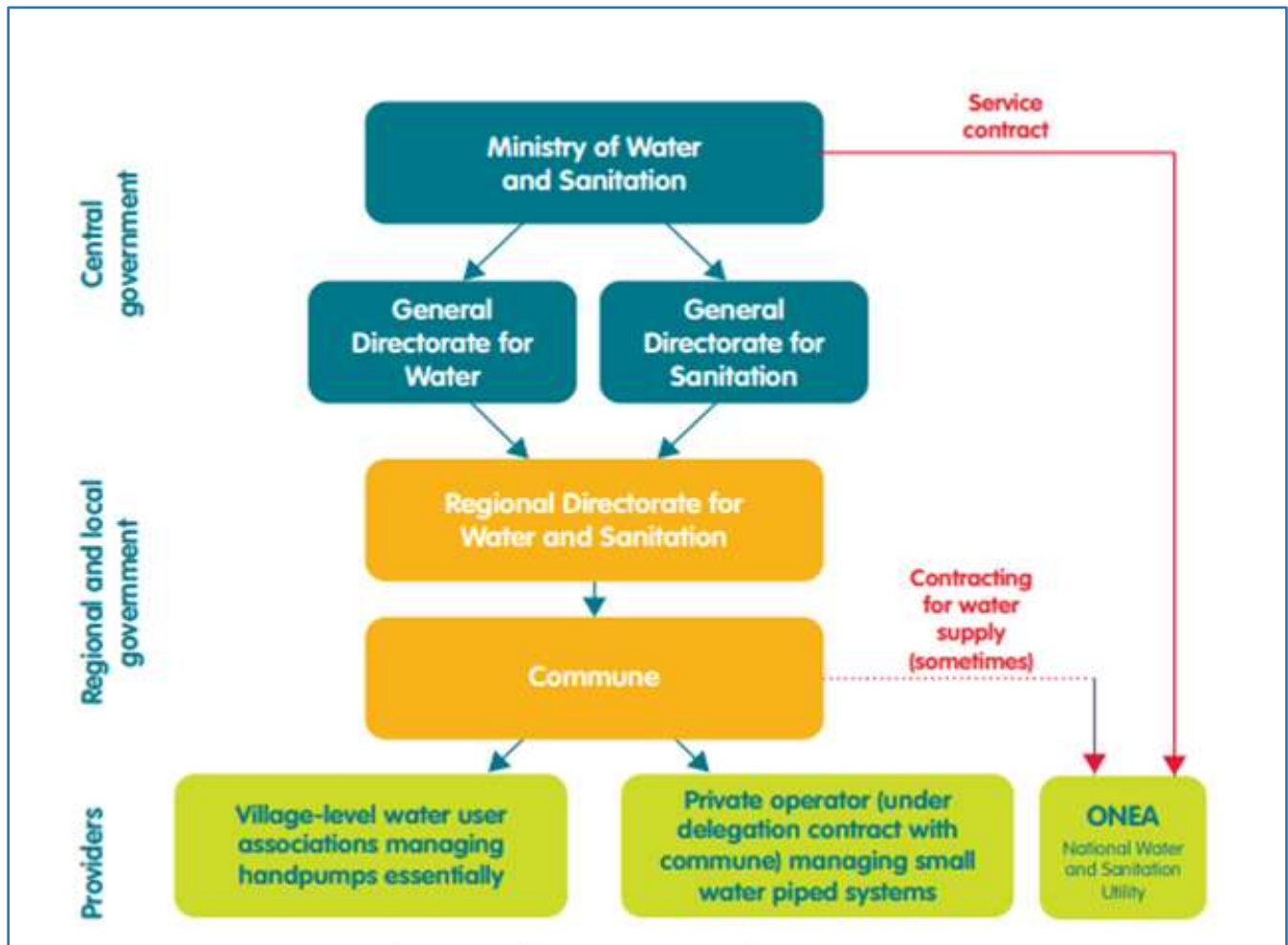


Figure 2.2. Institutional framework of the WSS sector in Burkina Faso (IRC, 2019).

2.1.2.1. Organisation Nationale de l'Eau et Assainissement

The National Office for Water and Sanitation (ONEA) is a corporation established by a decree n° 1985-387 / CNR / PRES dated July 28, 1985 in the form of a public State institution with industrial and commercial character (EPIC) with a detained capital investment of 3,080,000,000 CFA francs. It was transformed into a State-owned company on November 2, 1994 under the decree n° 1994-391 / PRES / MICM / EAU.

The mission of ONEA; when it comes to water; is to ensure the creation, management and protection of drinking water collection, treatment, supply and distribution, and installations for urban and industrial needs. And when it comes to sanitation, the aim of ONEA is to ensure the creation, promotion and improvement, and management of collective, individual or autonomous sanitation facilities for the evacuation of waste water and excreta in urban and semi-urban areas of Burkina Faso.

The State and ONEA's relationship is controlled by a three-year plan contract and specifications that provide the conditions for the development, operation, and protection of water and sanitation infrastructure under ONEA administration. On the other hand, relationships between ONEA and users of the public service are controlled by water and sanitation service rules, which inform users about the functioning of the service and specify each party's rights and duties.

ONEA is placed under the technical supervision of the Ministry of Water and Sanitation (MEA), management supervision of the Ministry of Industry, Trade and Handicrafts and financial supervision of the Ministry of Economy and Finances.

Strategic orientation of ONEA

The National Drinking Water Supply Program (PN-AEP 2016-2030) seeks to improve access from 65 percent in 2015 to 100 percent in 2030 by 2030. And for that, ONEA must fulfill a number of structural objectives such as A rate of access to drinking water equal to a 100% with continuity and quality 24hours a day; Operational performance and a better quality of services to customers; Affordable water prices for everyone; and a society which remains healthy economically and financially; in order to realize its vision by 2030.

These objectives are set to cover challenges such as a population serviced by water that is expected to expand from 3.5 million in 2015 to more than 8 million by 2030; the building of approximately

10,000 kilometers of water network, 70,000 m³ of reservoirs, and 250,000 m³ / day of production capacity.

Therefore, the pursuit of fairness, as well as Burkina's commitment to achieving universal access to drinking water, will guide ONEA to expand its networks in communities linked to the communes where it operates, within a radius of roughly 5 km, and villages with a population of more than 2,000 people; to extend its network to unplanned areas in the city center; to serve the villages where the discharge pipeline passes. ONEA will represent the municipal government as the entrusted contracting authority. These facilities can be commissioned to ONEA or private operators to operate these facilities in the form most suitable for the municipality.

2.1.2.2. Policies and regulations in the WSS sector of Burkina Faso.

When it comes to regulations, water supply and sanitation regulations are defined in two primary statutes, as well as a number of national plans and strategies for various sub-sectors. The 2001 Water Management Act, which establishes principles for the integrated management of water resources and the development of various water uses, and the 2004 Decentralization Law (Charge Générale des Collectivités Territoriales, CGCT), which establishes responsibilities for the delivery of basic services such as water supply and sanitation, are the two main laws (World Bank, 2009). In terms of national plans and strategies, Burkina Faso approved an action plan (Plan d'Action pour la Gestion Intégrale des Ressources en Eau, PAGIRE) in 2003 that underlined progressive decentralization, in the same line as the decentralization law (USAID, 2008).

To meet the Millennium Development Goals, the government established the National Water Supply and Sanitation Program (PN-AEPA) in 2006. The government also issued a Rural Water Supply Maintenance Reform Paper in 2008. In addition, the government revised its Sanitation Strategy in 2008. In order to complement the goal, a nationwide campaign in June 2010 to expand access to proper sanitation was announced (Hien, 2010).

The Ministry of Agriculture, Water, and Fisheries is in charge of developing national water supply policy within the government. The General Directorate for Water Resources (DGRE) manages water resources within the Ministry, while the General Directorate of Drinking Water Supply (DGAEP) manages drinking water supply.

Figure 2.3. Key dates in the reform of the water and sanitation sector in Burkina Faso (AMCOW, 2011) .

Year	Event
1970	Management of water and electricity is separated with the creation of the National Water Company (SNE: <i>Société Nationale des Eaux</i>), a semi-public company present in seven urban centers, while the state directly supervises rural water supply.
1976-1978	First Water Policy and nationalization of the SNE, transformed into the National Office for Water (ONE: <i>Office National de l'Eau</i>), present in 44 urban centers.
1985	Transformation of the ONE into the National Office for Water & Sanitation (ONEA: <i>Office National de l'Eau et de l'Assainissement</i>) and creation of a surcharge for sanitation included in the water bill.
1994	ONEA becomes a state-owned company. The sanitation surcharge is used to finance the Strategic Sanitation Plan of Ouagadougou (PSAO: <i>Plan Stratégique d'Assainissement de Ouagadougou</i>).
1998	The adopted National Water Policy introduces integrated management of water resources in Burkina Faso.
1996-2000	ONEA improves its technical and financial performance.
2001	Adoption of the Water Law.
2002	Creation of the Ministry of Agriculture, Water and Fisheries (MAHRH: <i>Ministère de l'Agriculture, de l'Hydraulique, et des Ressources Halieutiques</i>) that includes a General Directorate in charge of water and sanitation.
2006-2009	Adoption of the National Program for Water Supply and Sanitation (PN-AEPA: <i>Programme National d'Approvisionnement en Eau Potable et d'Assainissement</i>) and development of its application tools.
2008	Institutional separation of water and sanitation management in rural areas with the creation of the General Directorate of Wastewater Sanitation and Human Excreta (DGAEUE: <i>Direction Générale de l'Assainissement des Eaux Usées et Excrétas</i>) alongside the General Directorate of Water Resources (DGRE: <i>Direction Générale des Ressources en Eau</i>).

2.2. Global water and sanitation accessibility

It is obvious that the water and sanitation sectors has progressed dramatically since 1990. (UNICEF & WHO, 2019).

According to a United Nations report, countries attempted to meet the Millennium Development Goals' target 7 C of halving the proportion of the population without access to safe drinking water and basic sanitation by the year 2015. (United Nations, 2017). Besides that, according to the report, 71% of the worldwide population used safely managed drinking water in 2015, and 39% used safely managed sanitation facilities (UNICEF & WHO, 2019).

Progress toward MDG 7c, which calls for decreasing the proportion of people without access to safe drinking water and better sanitation by 2015, has been modest. Access to improved water sources climbed from 49% in 1990 to 60% in 2008, a year-on-year rise of less than one percentage point. Access to better sanitation facilities grew even more slowly throughout the same time

period, from 27% to 31%. (UN, 2008). This means that 328 million people in the region lacked access to safe drinking water in 2008, with 84 percent of them living in rural regions. Approximately 567 million people still lacked access to better sanitation. These figures are significant and cause great worry.

In Uganda, access to better drinking water sources and sanitation rose gradually between 1980 and 2008, both at the national level and in urban and rural areas. Over an 18-year period, the most significant improvement was a 24 percentage point gain in access to better water, from 43 percent to 67 percent. The overall population's access to sanitary services increased by only 9 percentage points, from 39 percent to 48 percent. (UNICEF & WHO, 2019). In the last two decades, access to improved water sources has steadily increased in rural areas. The attainment of national targets for the development of groundwater abstraction sources was responsible for this remarkable improvement. The gap in access to better water sources between urban and rural communities has shrunk from 39 percentage points in 1990 to 27 percentage points in 2008. The sanitation divide expanded from 5 points in 1990 to 11 points in 2008.

In Burkina Faso, access to better water facilities has progressively improved since 1990, rising from 41% of the total population in 1990 to 76% in 2008. According to the World Bank, the number of individuals with direct access to piped water through a home connection in Ouagadougou more than tripled in six years, from 300,000 in 2001 to 1,040,000 in 2007, or 130 percent of the project's end-of-project target (World Bank, 2008). The water sub-strong sector's success contrasts sharply with the sanitation sub-poor sector's performance, with access rising from 6% in 1990 to 11% in 2008, a 5 percentage point rise from a very low base leading to Burkina Faso's worst sanitation statistics in Sub-Saharan Africa. The difference in access to better water sources between urban and rural communities has shrunk from 37 percentage points in 1990 to 33 percentage points in 2008. The disparity between persons using improved sanitary facilities in Burkina Faso's urban and rural areas, on the other hand, remained essentially stable over time. (UNICEF & WHO, 2019).

Nevertheless today, Burkina Faso has been lauded as a model country in Francophone West Africa, notably in terms of water, and it consistently outperforms its counterparts in terms of WASH policies and institutions. The urban utility (ONEA) is one of the best in Africa, with virtually universal access. However, securing universal access to water for rural populations and funding

large-scale sanitation adoption continue to be significant problems. The government is presently confronted with a number of challenges in achieving the higher service levels by 2030, as indicated in its plans (IRC, 2019).

Despite the fact that 75% of the population now has access to improved water sources, just 47% of households have access to better sanitation, and 47% of individuals still practice open defecation. One-third of rural residents lack even basic access, while the remaining 30% rely on upgraded infrastructure that delivers just a very restricted service. The sanitation issue remains tremendous as 63 percent of the rural population still practices open defecation.

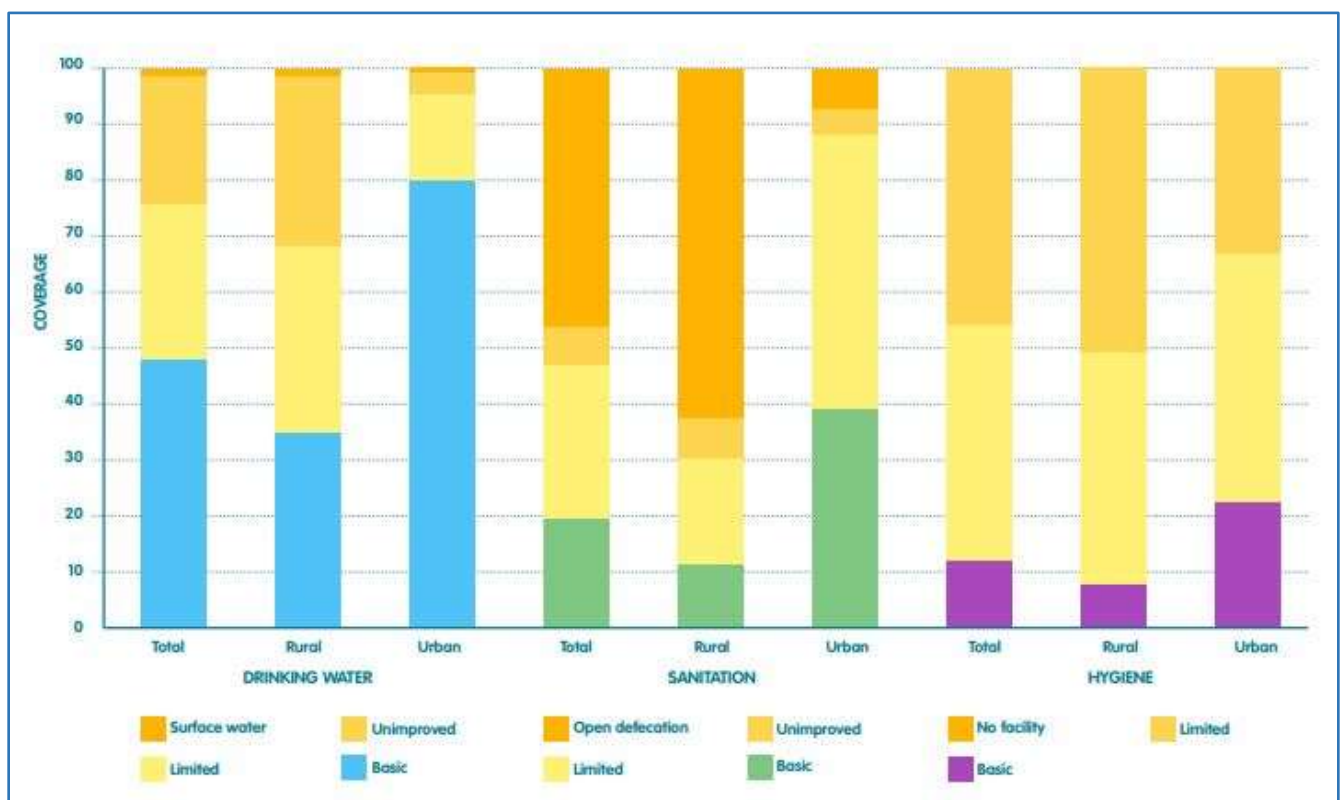


Figure 2.4. Burkina Faso's status in 2017 against SDG 6 indicators (Ministry of Water and Sanitation, Burkina Faso, 2018).

Urban locations provide a unique set of challenges. The majority of people (93%) use a latrine, yet just 2% are sewer-connected, and the majority of waste is untreated. The results for hygiene are as poor as those for sanitation, with just 8% of rural homes having a soap-and-water handwashing station. The three main access issues are: decreasing open defecation in rural areas; increasing

access and quality of rural water services; and assisting individuals in urban areas in climbing the sanitation ladder.

Providing universal access to WASH for rural populations and supporting large-scale sanitation adoption are significant difficulties that must be solved because despite the efforts already made, a population of as much as 29 percent, or roughly 844 million people, still lacks clean drinking water and 61 percent lacks acceptable sanitation, as specified by the Sustainable Development Goals (Water.org, 2019). Therefore, to increase access to clean water and sanitation, it is important to understand the measures that nations and external assistance organizations are taking in the water, sanitation, and hygiene (WASH) sectors.

Table 2.2. Global goals targets and indicators for drinking water, sanitation and hygiene (UNICEF & WHO, 2019)

WASH SECTOR GOAL	SDG GLOBAL TARGET	SDG Global Indicator
Ending open defecation.	6.2. By 2030, achieve access to adequate and equitable sanitation and hygiene for all and end open defecation , paying special attention to the needs of women and girls and those in vulnerable situations.	6.2.1. Population practicing open defecation .
Achieving universal access to basic services.	1.4. By 2030, ensure all men and women, in particular the poor and vulnerable have equal rights to economic resources as well as access to basic services .	1.4.1. Population living in households with access to basic services including basic drinking water, sanitation and hygiene .
Progress towards safely managed services.	6.1. By 2030, achieve universal and equitable access to safe and affordable drinking water for all .	6.1.1. Population using safely managed drinking water services .

	<p>6.2. By 2030, achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations.</p>	<p>6.2.1 Population using safely managed sanitation services.</p> <p>6.2.1. Population with a basic handwashing facility with soap and water available on premises.</p>
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2.3. Determinants for universal services

Water and Sanitation's relevance in fostering good health and socioeconomic development is generally recognized. Improved clean water supply and sanitation treatments have been found in studies to reduce diarrheal bouts, a primary cause of childhood mortality, by up to 60%. (Walker, et al., 2013). While the general elements that determine water and sanitation sector’s success are well understood, some of the few studies that have looked into the sanitation situation in the Sub-Saharan Africa have come to differing conclusions about the elements that determine water and sanitation success. Some of the determinants are:

- Regulatory determinants
- Financial determinants
- Human determinants

2.3.1. Regulatory determinants

Environmental policymaking remains a central government responsibility in Uganda, but the implementation of its policies and laws is delegated to the districts. This is in accordance with the country’s overall decentralization strategy. (Okot-Okumu & Oosterveer, 2010). Decentralization has allowed governmental powers to be devolved from the central government to local councils at the district and urban authority levels. These districts and municipalities are now in charge of environmental management and planning, including water supply and sanitation services and trash management. (Okot-Okumu & Oosterveer, 2010). As a result, local governments have complete responsibility over solid waste management and sanitation, as well as the legal right to enact particular ordinances and by laws.

The administration of urban water supply and sanitary infrastructures in Uganda is tightly linked, and planning is directed by a single policy document. In order to accomplish the Poverty Eradication Action Plan’s goals, MoFPED began reforming the water and sanitation industry. This aligns with MDG #7, which focuses on improving sanitation for the poor. (MoFPED(Ministry of Finance Planning and Economic Development), 2004).

Burkina Faso has a legislative and administrative framework in place to ensure that water and sanitation policies and programs are implemented effectively. While the program budget has resulted in good results, the government and its agencies must put in more effort to ensure higher effectiveness in public spending and to reduce access inequities. The national water council should be provided adequate resources to adequately fulfill its mandate, especially in light of water shortage and rising demand. (WaterAid Burkina Faso, 2016)

The Burkinabé water right is based on Law No. 002- 2001/AN related to the orientation law on water management, which was adopted by the General Assembly on February 8, 2001. It is based on a number of fundamental texts, such as the Constitution and international conventions that set out general principles. Laws derived from the Fourth Code issued in 1994 and 1997 that address water concerns directly or indirectly must be highlighted in support of these basic documents. These are the following laws: I the Environmental Law, (ii) the Forestry Law, (iii) the Mining Code, and (iv) the Public Health Code. The Land Reform Act (RAF) and the water policy and strategy document are particularly essential for water resource management as they establish the fundamental principles of national and regional development and as well the management of urban and rural land and water (Youkhna, Korth, Lamizana, Sebaly, & Van Deer Schaaf, 2006).

Table 2.3. Public Laws and Legal Instrument of the WSS sector in Burkina Faso.

Year	Terms & Abbreviations	Missions and Responsibilities
1994	Law No. 023/94/ADP of May 19, 1994 related to the Code of Public Health (Code de la santé publique).	This is linked to the standards of drinkable and hygienic rules, which must be filed for any distribution of drinking water. Toxic waste importation is prohibited for public health reasons, and all violators will face prosecution.

1997	Decree 97-054/PRES/PM/MEF of February 6, 1997.	The Water Technical Committee and its permanent secretariat are composed of the general secretary of the ministry department (or representative) in charge of water, according to Articles 119 and 121 of Decree 97-054/PRES/PM/MEF of February 6, 1997 related to the conditions and modalities of application of the RAF.
1997	Policy and strategies related to water in Burkina Faso.	<p>The general objective of this policy is to contribute to the sustainable development by bringing appropriate solutions to the water related issues so that water does not become a constraint/obstacle to the socio-economic development.</p> <p>It is specifically aiming to the sustainable satisfaction of the water needs while respecting the ecosystems, a better protection against the aggressive actions of water (erosion, floods, pollution) and minimize the charges of the state by the involvement of the beneficiaries of the investments who will take up the responsibility of the costs.</p>
1998	Decree No. 98-365/PRES/PM/MEE of September 10, 1998.	<p>The document titled "Water Policy and Strategy" establishing the foundational policy in the subject of water, was authorized by the Government of Burkina Faso by decree No. 98-365/PRES/PM/MEE on September 10, 1998.</p> <p>The national water policy described therein provides opportunities for long-term institutional development by including the State, local communities, and users in institutional and financial mobilization; and sector integration within the context of the country's broader political, social, and economic growth goals</p>

		(decentralization, gender issues, private sector development, creation of jobs and incomes).
2001	Law No. 002-2001/AN related to the orientation law of water management.	The orientation legislation pertains to water management through its provisions on water administration, water systems, and public service organization, as well as water sector finance; it engages in water sector restructuring in accordance with the concepts of Integrated Water Resources Management (IWRM).
2015	National Water Policy	With the same objective as the water policy of 1997, this policy has a mission to achieve the right to the universal access of water and sanitation through proper management of the water resource of the country by 2030.
2018	Sectoral Policy - “Environment, Water & Sanitation” 2018-2027	To assure access to water, a safe life context and strengthen the environmental governance and sustainable development with an aim to improve the social and economic conditions of the Burkina Faso’s population.

Besides, water and sanitation service delivery responsibilities have been transferred to LGs in accordance with the LG code. However, the majority of these LGs are so poor and financially unsustainable that they are unable to address the requirements of their populations. To ensure the effective development of sustainable water and sanitation services locally, it is necessary to combine both financial and human resources. Finally, a governing body is required. (WaterAid Burkina Faso, 2016)

2.3.2. Financial determinants

Since 1990, the World Bank and other international agencies have advocated the private water corporation as the key model for investing in, developing, and operating water and sanitation services in medium and low-income countries. It is now widely acknowledged that this experiment

failed to attract considerable private investment, and that public opposition to private firms is nearly universal. (Annez, 2006)

Between 1994 and 2008, Water and Sanitation Sector Official Development Assistance per capita ranged from USD 0.34 in 1996 to USD 13.49 in 1999, with a 14-year average of USD 5.4. Over a 14-year period (1994–2008), the share of Official Development Assistance aid supplied to the Water and Sanitation Sector fluctuated from 1.3 percent in 1996 to 22.7 percent in 1999, with an average of 9.5 percent. The World Bank's International Development Aid was the major donor to the WSS industry in Burkina Faso from 2002 to 2009. (Salami, Stampini , Kamara, Sullivan, & Namara, 2014)

During the period 2001/02 to 2008/09, the total budget stayed relatively steady, while the proportionate contributions from external donors and the Ugandan government fluctuated dramatically. The government's contribution continuously climbed from 35 percent to 66 percent of the overall amount from 2005 to 2009. Unfortunately, this was accompanied by a decrease in outside funding. As a result, the overall budget remained unchanged. The Water and Sanitation sector's contribution to the national budget fell from 7.9% in 2002/03 to 2.4 percent in 2008/9. Water and Sanitation Sector Official Development Assistance has decreased from 13% in 1995 to around 4% in 2008. During this time, per capita Official Development Assistance spending remained below USD 4. Water and Sanitation Sector's poor donor assistance isn't representative of Uganda's overall aid flow; aid is mostly directed to other locations. (Salami, Stampini , Kamara, Sullivan, & Namara, 2014)

The primary funds for WSS sector in Burkina Faso at the national level mainly come from the national government of Burkina Faso through the budget allocation for rural water and sanitation which is a percentage of GDP, which was 69.70 million US dollars (0.5 %) in 2014. Besides, there is funds from development assistance, specifically from DANIDA (Denmark), the World Bank, the African Development Bank, AFD (France), KfW/GIZ (Germany), UNICEF, the European Union, SIDA (Sweden), JICA (Japan), Chinese collaboration, and UN-Habitat (IRC, 2019).

Following the creation of a technical secretariat by donor institutions, a coordinated aid plan for Burkina Faso is being created. The strategy, which was developed in conjunction with the development of Burkina Faso's National Action Plan for Development Aid Effectiveness (PANEA) in 2007, is intended to enable coordination of aid to Burkina Faso and will likely

improve the country's relatively poor monitoring and evaluation system in the WSS sector. The World Bank, the African Development Bank, the European Union, and the governments of Denmark and Germany are among the major funders. The World Bank has approved funds totaling US\$80 million to assist the Urban Water Sector Project, as well as the establishment of an International Institute for Water and Environmental Engineering (US\$5 million) and the Rural Drinking Water Supply and Sanitation Project (US\$35 million) (USAID, 2010).

Table 2.4. Donors and their activity in the WSS sector of Burkina Faso

Donor	Activities
African Development Bank	<ul style="list-style-type: none"> • Semi-urban and rural access to improved WSS; • Support to water user associations; • Hygiene awareness and education program; • Inventory studies of WSS infrastructure in semi-urban and rural areas.
Danish International Development Agency (DANIDA)	<ul style="list-style-type: none"> • IWRM support through PAGIRE II program; • WSS sector support through PADSEA program; • Focus on financial management and monitoring and evaluation processes.
European Union	<ul style="list-style-type: none"> • National WSS sector policy reform and institution building; • Rural and semi-urban WSS service support through the National Water Supply and Sanitation Program and ONEA.
German development partners (GTZ), German Development Bank (KfW) and German Development Service (DED)	<ul style="list-style-type: none"> • Implementation of the national water and wastewater plan, reform, decentralization and IWRM; • Infrastructure projects to expand WSS access in urban, semi-urban and rural areas; • Financial support for sanitation in urban areas.
World Bank	<ul style="list-style-type: none"> • Education and training of WSS sector professionals, including support for the International Institute for Water and Environmental Engineering; • Increasing access to WSS in targeted urban areas.

The Water Act of 2001 recognized the significance of safe drinking water, adequate bathroom facilities, and excellent cleanliness, which brought the government to safeguard five water basins and established a legislative framework to ensure that people all throughout the country have access to clean water. To that, Capital investment is mostly financed through development aid in the form of grants and loans provided through projects or budget support. Currently, just one-third of the sector's anticipated financial needs are met; general taxes and charges are primarily used to fund the state's operational and payroll expenditures (at central and regional levels). Also, through a cross-subsidy scheme, the recovery of tariffs in cities enables ONEA to offer the service while also ensuring the upkeep of the assets. A portion of the revenue from this tariff also allow ONEA to replace equipment or construct latrines; in rural regions, the price barely covers the operation and maintenance expenses of tiny networks and boreholes with hand-pumps (AMCOW Country Overview, 2011).

The link between Burkina Faso's poverty-reduction plan and the WSS sector, particularly sanitation, remains strained. Much of the sector's funding has gone toward increasing water supply through reservoir development rather than WSS service delivery. Greater access to sanitary facilities was not included in national WSS policy until explicit WSS objectives were set under Burkina Faso's MDG roadmap. Despite the MDG plan, Burkina Faso's investment in sanitation is minimal in contrast to drinking water development. ONEA has managed overall WSS service to urban regions successfully, but numerous problems remain in increasing access to sanitation facilities and complete WSS services in rural areas (Water Supply Project, 2009).

2.3.3. Human determinants

Water is essential for human survival and health, as well as for sanitation and hygiene. The need for regular and fair access to water and sanitation has been demonstrated by the rapid growth of the human population combined with the effects of climate change. Besides that, the lifestyle and primary activities play a key role on the need and use of water and sanitation services in Burkina Faso.

CHAPTER 3: RESEARCH METHODOLOGY

3.0. Introduction

This chapter presents mainly the materials and research methods used in this study. A thorough desk study was carried out to evaluate all accessible papers, records, evaluations, literature, and any other information discovered to be connected to water and sanitation in Burkina Faso. This secondary data was used in the analysis of the current situation in the water and sanitation sector referring to the global standards using a matrix.

3.1. Research design

The study is qualitative and it used the “Rapid Review Method” which is an approach that attempts to shorten the time associated with systematic review procedures. This method employs systematic and repeatable techniques to locate, select, and critically appraise all relevant research, as well as gather and analyze data from the studies included in the review while having the least impact on the conclusions' validity or utility.

In this research thesis, the rapid review consisted of reviewing the water and sanitation policies and the regulatory framework in the water and sanitation utilities, analyzing the regulatory determinants and their effects on the financial decisions and social behavior in the water and sanitation sector of Burkina Faso. Furthermore, referring to the global WASH standards and with the use of a matrix, an analysis of the performance of Burkina Faso in the WASH sector was made in order to provide recommendations and strategies to meet the global WASH goals.

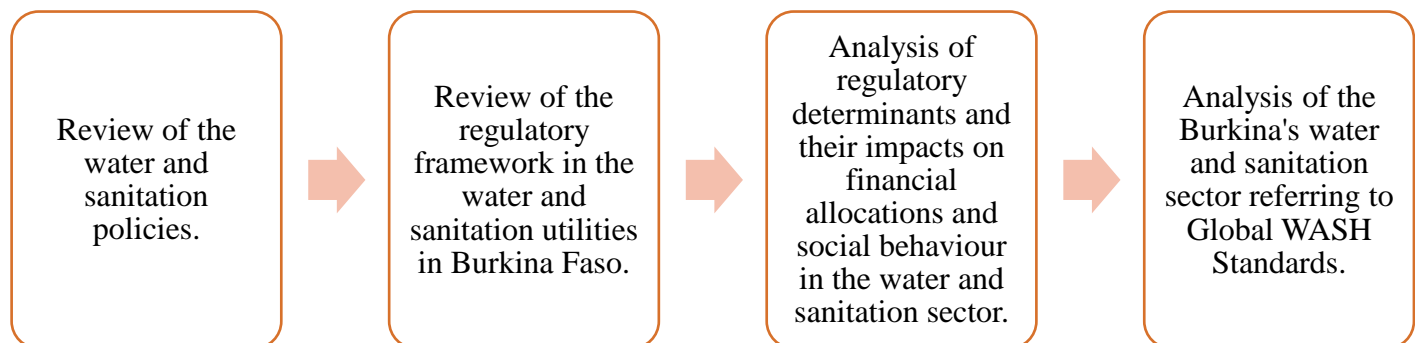


Figure 3.1. Illustration of Research design

3.2. Types and sources of data

In this research, secondary data was used. It was obtained from different sources such as journals, reports, articles related to the topic of study. The inclusion criteria included:

- Documents in English or French;
- Published not earlier than 2005;
- Related to water and sanitation;
- All geographical locations with specific interest in Burkina Faso.

The process of selection of publications and documents identified through the search process is as follows:

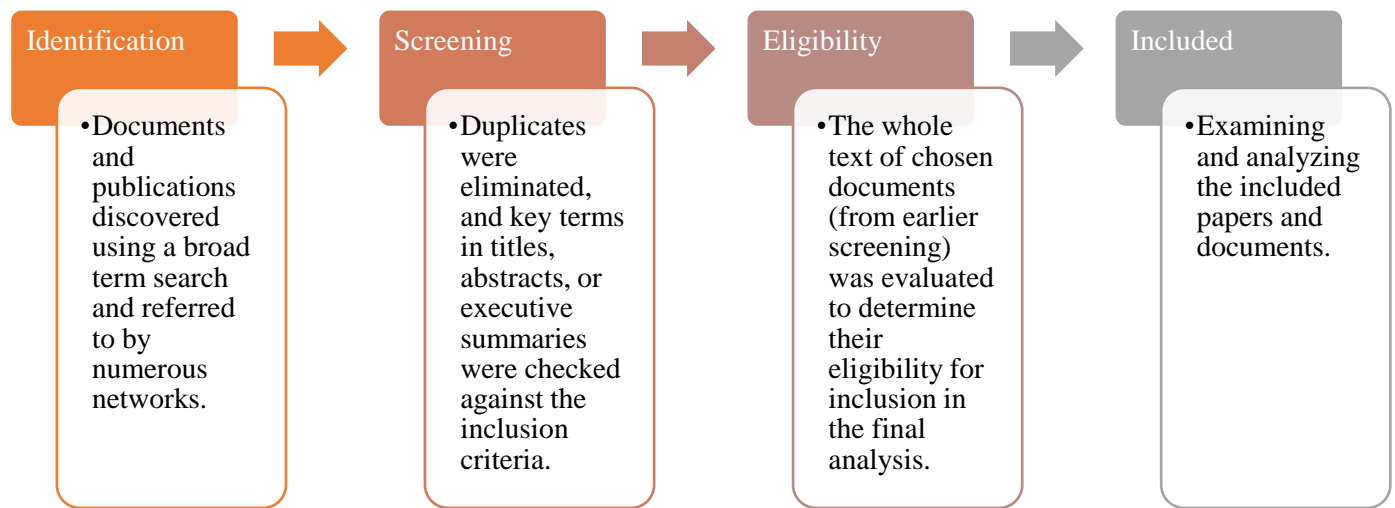


Figure 3.2. Process of selection of publications and documents

3.3. Design of the analysis matrix

The matrix was designed with reference to the Global Water and Sanitation standards. For water, the standard looked at are water accessibility, quality and facilities; and for hygiene and sanitation, the standards looked at are hygiene promotion implementation, identification, access and use of hygiene items and menstrual hygiene management and incontinence.

Table 3.1. Analysis matrix

	Global Standards	Key Actions	Guidance Notes
Hygiene Promotion (Sanitation)	1. Hygiene promotion and implementation (People are aware of the major public health hazards associated with water, sanitation, and hygiene, and they may take individual, domestic, and community actions to mitigate them.)	<ul style="list-style-type: none"> Identify the major public health threats and the current hygiene habits that contribute to these threats. Design and manage hygiene promotion and the broader WASH response in collaboration with the affected population. Adapt and improve hygiene promotion based on community feedback and health surveillance data. 	<ol style="list-style-type: none"> Assessing needs; Targeting priority hygiene risks and behaviors; Reaching all sections of the population; Interactive methods; Overburdening; Terms and conditions for community mobilisers; Motivating different groups to take actions.
	2. Identification, access to and use of hygiene items (The affected people have access to and use appropriate items to support their cleanliness, health, dignity, and well-being.)	<ul style="list-style-type: none"> Determine the necessary hygiene goods required by individuals, households, and communities. Ensure that necessary hygienic items are available at all times. Collaborate with affected populations, local governments, and other stakeholders to arrange how people will collect or purchase sanitary supplies. Seek input from affected people on the appropriateness of the hygiene items chosen and their 	<ol style="list-style-type: none"> Basic hygiene items; Coordination; Timeliness of hygiene items distribution; Priority needs; Appropriateness; Replacement; Special needs.

		satisfaction with the access mechanism.	
	<p>3. Menstrual hygiene management and incontinence. (Menstruating women and girls, as well as males and females with incontinence, have access to hygiene products and WASH facilities that promote their dignity and well-being.)</p>	<ul style="list-style-type: none"> • Understand the behaviors, societal conventions, and beliefs around menstrual hygiene and incontinence management, and modify hygiene supplies and facilities accordingly. • Consult with women, girls, and incontinent individuals about the design, placement, and administration of facilities (toilets, bathing, laundry, disposal, and water supply). • Make available suitable menstrual hygiene and incontinence supplies, as well as soap (for bathing, laundry, and handwashing) and other hygiene goods. 	
Water Supply	<p>1. Access to water and water quantity. (People have fair and affordable access to enough safe water to fulfill their drinking and domestic requirements.)</p>	<ul style="list-style-type: none"> • Determine the best groundwater or surface water sources, taking into consideration any environmental impacts. • Determine the amount of water necessary and the methods required to supply it. 	<ol style="list-style-type: none"> 1. Water sources selection; 2. Needs; 3. Measurements; 4. Quantity and coverage; 5. Maximum number of people per water source;

		<ul style="list-style-type: none"> • Ensure proper water point drainage in home and communal washing, bathing, and cooking spaces, as well as handwashing facilities. 	<ol style="list-style-type: none"> 6. Queueing time; 7. Access and equity.
	<p>2. Water quality. (Water is pleasant and of adequate quality for drinking and cooking, as well as for personal and household cleanliness, without posing a health concern.)</p>	<ul style="list-style-type: none"> • Determine the public health hazards connected with the available water and the best approach to mitigate them. • Choose the best technique for guaranteeing safe drinking water at the time of consumption or usage. • Reduce the amount of post-delivery water pollution at the point of consumption or usage. 	<ol style="list-style-type: none"> 1. A sanitary survey and water safety plan; 2. Microbiological water quality; 3. Promotion of protected sources; 4. Post-delivery contamination; 5. Water disinfection; 6. Household-level water treatment; 7. PoWT using Chlorine; 8. Chemical and radiological contamination; 9. Palatability; 10. Water quality for health centers.
	<p>3. Water facilities. (People have appropriate facilities for collecting, storing, and using suitable quantities of water for drinking, cooking, and personal</p>	<ul style="list-style-type: none"> • Provide suitable water collection and storage facilities to the impacted population. • Encourage all impacted persons and vulnerable people to actively participate in the location and design of water stations, as well 	<ol style="list-style-type: none"> 1. Water collection and storage; 2. Communal washing and bathing facilities; 3. Maintenance of water systems.

	<p>hygiene, as well as ensuring that drinking water remains safe until it is consumed.)</p>	<p>as the installation of washing and bathing facilities.</p> <ul style="list-style-type: none"> • Include individual washing basins and laundry spaces for women to wash and dry undergarments and sanitary cloths at water distribution stations and community laundry facilities. 	
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3.4. Data collection, processing and analysis

The collected data was translated (the documents that were in French). The data was then processed through the analysis matrix in references to the global WASH standards to understand the current situation of the WASH sector in Burkina Faso and find the gap as benched against the global standards.

3.5. Limitations of the study

The effects of the COVID-19 pandemic made travelling to the study area difficult. This also led to budgetary constraints due to expensive flight tickets to travel to the study area. Most African nations do not keep detailed records on many topics, therefore, it was a bit complicated to find documents to the research topic, for study area.

CHAPTER 4: RESULTS ANALYSIS AND INTERPRETATION

4.0. Introduction

This chapter describes the findings of the study. The study used the rapid review approach to review the water and sanitation policies and the regulatory framework in the water and sanitation utilities, to analyze the regulatory determinants and their effects on the financial decisions and social behaviors in the water and sanitation sector of Burkina Faso. The results are based on the research objectives and hypothesis which were used to guide the study.

4.1. Analysis and discussion of major findings

This study analyzed data in three consecutive categories based on the specific research questions presented in the first chapter. Firstly, the study reviewed the regulatory framework in the water and sanitation sector in Burkina Faso, i.e. the water and sanitation policies, related strategic plans and the institutional framework; secondly, the study examined the effect of the regulatory determinants on the financial allocations and investments in the water and sanitation sector and thirdly, the study examined the effects of the regulatory determinants on the social behavior in the water and sanitation sector. Lastly, referring to the Global WASH Standards the study analyzed the performance of Burkina Faso in the Water and Sanitation sector so that recommendations and strategies to meet the global WASH goals can be made.

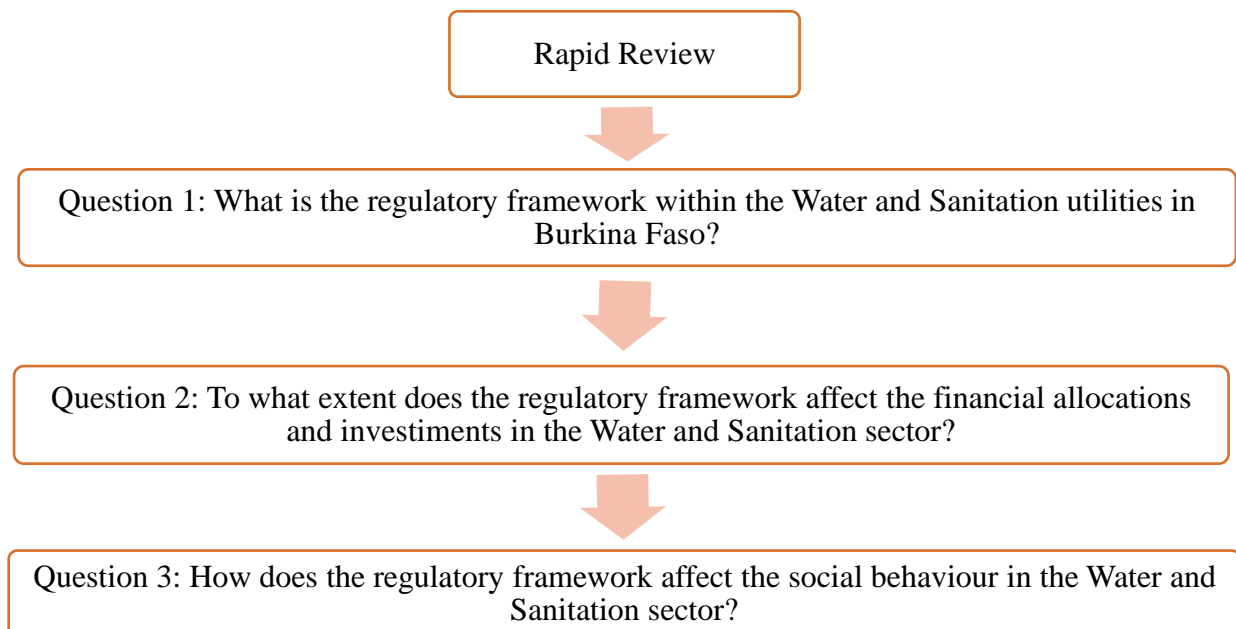


Figure 4.1. Illustration of results analysis

4.1.1. Rapid review: Landscape of the literature on regulatory determinants for universal services in the Water and Sanitation sector

There is an increasing number of literature related to the regulatory determinants for universal services in the water and sanitation sector. However, there significant gaps in the literature as there is no constant update of the data through the years, i.e. for some years there is no information on the water and sanitation sector for Burkina Faso; this is due to poor documentation and dissemination of activities in the sector.

The type of documents selected and included in the review included:

- Water and sanitation accessibility and availability;
- Water related policies ;
- Strategic plans of the water and sanitation sector;
- Research related to the topic;
- Projects reports and evaluation.

Note that these documents were focusing on the study area which is Burkina Faso.

4.1.2. The regulatory framework in the Water and Sanitation utilities in Burkina Faso

Burkina Faso's water supply and sanitation policy is overseen by the Ministry of Agriculture and Water (MAH), which is divided into two branches: the Directorate General of Water Resources (DGRE) and the General Directorate of Sanitation, Wastewater, and Excreta (DGAEUE). The MAH is also in charge of managing the interface between various players (public, private, NGOs, CBOs, and funders) and mobilizing resources to implement the National Water Supply and Sanitation Programme (PN-AEPA). ONEA is both a regulatory agency and a supplier of water and sanitation services in urban and suburban regions, and it delegated this task to municipalities. To which the transfer of power and authority is still being carried out.

The National Water Policy of 2015

The governance of the water sector in Burkina Faso is apprehended in several documents of national reference such as the Sustainable Development national Policy (PNDD), Burkina 2025, and Good Governance National Policy. On the institutional level, the water governance is in the center of (i) the Integrated Water Resource Management (IWRM), (ii) the power transferred to

territorial collectives and (iii) the layout of the national legal and institutional framework of water resource management.

The National water Policy of Burkina Faso draws its foundations from several national and international texts such as international conventions, constitution, policy documents and legal and regulatory texts which set out the basic principles of natural resources management and the country’s water resources in particular.

With its vision to ensure that by 2030, the country’s water resources are well known and sustainably managed to achieve the right to universal access to water and sanitation in order to contribute to the sustainable development of the country; the national water policy presents three strategic orientations which are : (i) to ensure right to universal access to water and sanitation; (ii) to improve the awareness and management of the country’s water resources and lastly (iii) to promote sustainable development.

The general objective is the National Water policy is to contribute to the sustainable development of the country by providing appropriate solutions to water related issues a climate change affected environment, taking into consideration the Integrated Water Resource Management (IWRM). The National Water Policy has specific objectives that are defined through different programmes of the water policy for better implementation. The following table points out the specific objectives and the programmes through which they are defined.

Table 4.1. National Water Policy Specific objectives and Programmes

Specific objectives	National Water Policy Programmes
<p>1. Sustainably satisfy water needs in quality and quantity for a growing population, developing economy and natural ecosystems, in an environment affected particularly by climate change and less conducive to the restoration and mobilization of the resource.</p>	<ul style="list-style-type: none"> • Potable Water Supply Programme; • IWRM Programme; • Hydraulic Planning Programme; • Other ministerial sectors using water.
<p>2. Contribute in the achievement of food security and employment development in rural areas in order to take actively in fighting against poverty.</p>	<ul style="list-style-type: none"> • Hydraulic Planning Programme; • Other ministerial sectors using water.

<p>3. Ensure sustainable sanitation of wastewater and excreta.</p>	<ul style="list-style-type: none"> • Sanitation Programme; • Other ministerial sectors using water.
<p>4. Ensure the protection of people and property against the aggressive actions of water (floods, erosion), in an environment particularly affected by climate change.</p>	<ul style="list-style-type: none"> • IWRM Programme; • Hydraulic Planning Programme; • Sanitation Programme; • Others ministerial sectors using water.
<p>5. Improve the water sector governance mainly through; (i) sustainable financing of the water sector, (ii) promotion of research and capacity building of actors, and (iii) promotion of regional cooperation on transboundary water resources.</p>	<ul style="list-style-type: none"> • All programmes; • Other ministerial sectors using water.

The principles outlined in the Burkina Faso Constitution, as well as various policy, strategy, or legislative texts, as well as water management principles developed at the international level, particularly in international instruments binding on Burkina Faso, inspire the implementation of the National Water Policy. The various national water principles contribute to the establishment of good governance in the water sector, facilitating the achievement of sustainable development.

a. Principle of water resources management by hydrographic basin or aquifer

This principle seeks to preserve the approach by hydrographic basin or aquifer system as an appropriate framework for water resource planning, mobilization, management, and protection. It is about balancing social and economic development with the protection of natural ecosystems, as well as ensuring a balance between the various uses. Balanced management necessitates taking into account the entire water cycle as well as the management of various types of resources such as precipitation, surface water, groundwater, and piped water.

b. Principle of Equity

The principle of equity is elaborated in the water management orientation law, which states in article 2 that the law recognizes "everyone's right to have water corresponding to their needs and the elementary requirements of his life and dignity." It means that different groups of people should be treated differently based on their legitimate need for access to safe drinking water. Similarly,

equity must be sought in the distribution of water resources, their economic use, and the arrangements made for water resource protection and management.

c. Principle of subsidiary

This principle entails defining and implementing national water policy and related programs at the appropriate geographic scale. In other words, issues that can be decided and managed locally must be decided and managed locally.

d. Principle of harmonious development of the different regions of the country

The water resource use programs that will be established as a result of the plans and program development will take into account the development needs of all Burkina Faso regions. The work to be done must consider the needs upstream and downstream, and it must be part of a master plan for the development and management of water resources. In water management, the principle of harmonious regional development is based on national solidarity (principle of national solidarity).

e. Principle of protection of people and nature

The protection of people and nature in the context of environmental sustainability is a critical mission of the government. It necessitates the definition and observance of regulatory standards (mineral water, drinking water, polluting discharges) in order to avoid health risks, risks of degradation of water resources, or aggressive water actions such as flooding. It is critical to conduct regular checks to ensure that these standards are met. Management objectives (for example, water quality or quantity objectives) will also be defined progressively for the resource, with a focus on areas where the situation is critical and worsens year after year. Their definition requires consultation between water management experts and local decision-makers.

f. Principle of information and participation

All actions that contribute to the implementation of the national water policy must be preceded by activities that promote information, education, and communication (IEC). The information and participation principle entails using IEC tools to inform stakeholders in order to ensure the conscious participation of all policy users, planners, and decision-makers at all levels, from policy formulation to policy implementation and evaluation.

This principle is especially important at the policy formulation, investment, and management decision-making levels, because it allows for the support of partners and thus a better enforcement of these policies. It entails the development of appropriate IEC tools, consultation procedures, and the establishment of an organization that promotes the participation of user representatives, whether in the preparation of policy documents or in the implementation of water management at various geographical scales.

Finally, it presumes transparency in decision-making (transparency principle) and the possibility of citizen participation in the design and decision-making process for large-scale improvements, particularly through public inquiries. It necessitates the clear presentation of information derived from water data, as well as public access to this information.

g. Principle of precaution

The precautionary principle refers to the actions that must be taken when there is scientific uncertainty about the consequences of risks to water resources. According to this principle, a lack of scientific certainty, given current scientific and technical knowledge, should not delay the adoption of effective measures to prevent serious and irreversible damage to water resources.

h. Principle of Accountability

This principle states that each actor in the water sector must accept responsibility for their actions and report on them at the appropriate level, using agreed-upon mechanisms (principle of responsibility). The principle of accountability strengthens the legitimacy of these bodies by making the representatives of the various categories of actors who participate directly in the decision-making process in the institutions, bodies, and bodies of water management more accountable and allowing the public to hold these representatives accountable.

The principle of accountability is especially relevant to the state, which ultimately bears primary responsibility for national sustainable water management and serves as the institution's guarantor. The orientation law on water management enshrined the status of water management as part of the Nation's common heritage and as part of the public domain. As a result, it weighs on The State is required to report to the Nation on a regular basis on its efforts in support of the water sector.

The Sectoral Policy- Environment, Water and Sanitation (2008-2027)

Given the sector's constraints and the challenges that must be overcome, the overall goal of the policy is to "ensure access to water, a healthy living environment, and strengthen governance environment and sustainable development with a view to improving the economic and social conditions of populations."

The main expected impact of implementing the PS-EEA is "guaranteed access to water resources for all, a healthy living environment, and a quality environment."

Achieving the aforementioned impact leads to increased:

- proportion of the population satisfied with the quality of the living environment reaching 15% in 2027;
- proportion of users' fresh water needs being met reaching 100% in 2027;
- amount of carbon sequestered reaching 24 million tonnes in 2027; and
- proportion of planning benchmarks taking into account the themes environment and sustainable development increasing from 22.92 percent in 2016 to 100% in 2027.

The "Environment, Water, and Sanitation" sector policy is implemented through rolling three-year operational action plans developed by the various ministerial departments in accordance with the sectoral policy's orientations and priorities. These operational action plans are divided into annual performance programs (PAP), work plans and annual budgets (AWPB), and participatory projects and programs.

Local governments are the ones to implement the policy at the regional level through Regional Development Plans (PRD) and Communal Development Plans (CDP) (PCD). A communication strategy is developed in order to increase the actors' ownership of the policy and improve the sector's visibility. Communication and information activities are to be integrated into the various action plans at the ministerial level.

Several groups of actors ensure the sectorial policy implementation: the state, local governments, grassroots communities, Burkinabé from outside, NGOs and development associations, the private sector, professional organizations, and technical and financial partners. Each actor is expected to perform fully and efficiently in the roles that have been assigned to them.

4.1.3. Effects of regulatory framework on the financial allocations and investments in the Water and Sanitation sector

In theory, financing for WASH services is shared between municipalities and the national government.

Table 4.2. Responsibility for municipal WASH services

ONEA service areas (urban)	ONEA finances infrastructure, as well as the operation and maintenance of water and sanitation systems.
Rural areas (non-ONEA)	Municipalities are in charge of funding operations and maintenance of water and sanitation systems (mainly through water users associations). The national government is in charge of financing infrastructure investments.

In rural areas, the municipality is responsible for financing operations and maintenance, primarily through water users associations. Annual fees are collected from constituents, and a small fee is paid to the municipality each year for semi-annual preventive maintenance; and large repairs are expected to be financed through the water users association, but they can also be financed through municipal resources or financing mobilized through the DREAs. Infrastructure development, operations, and maintenance in ONEA service areas are all supported by user fees.

External aid, as well as tax and non-tax revenues, were primarily used to fund the water and sanitation program from 2007 to 2015 (mainly sourced from central taxation and user fees from ONEA). From 2008 to 2014, external aid accounted for 55% of total public expenditure on water and sanitation.

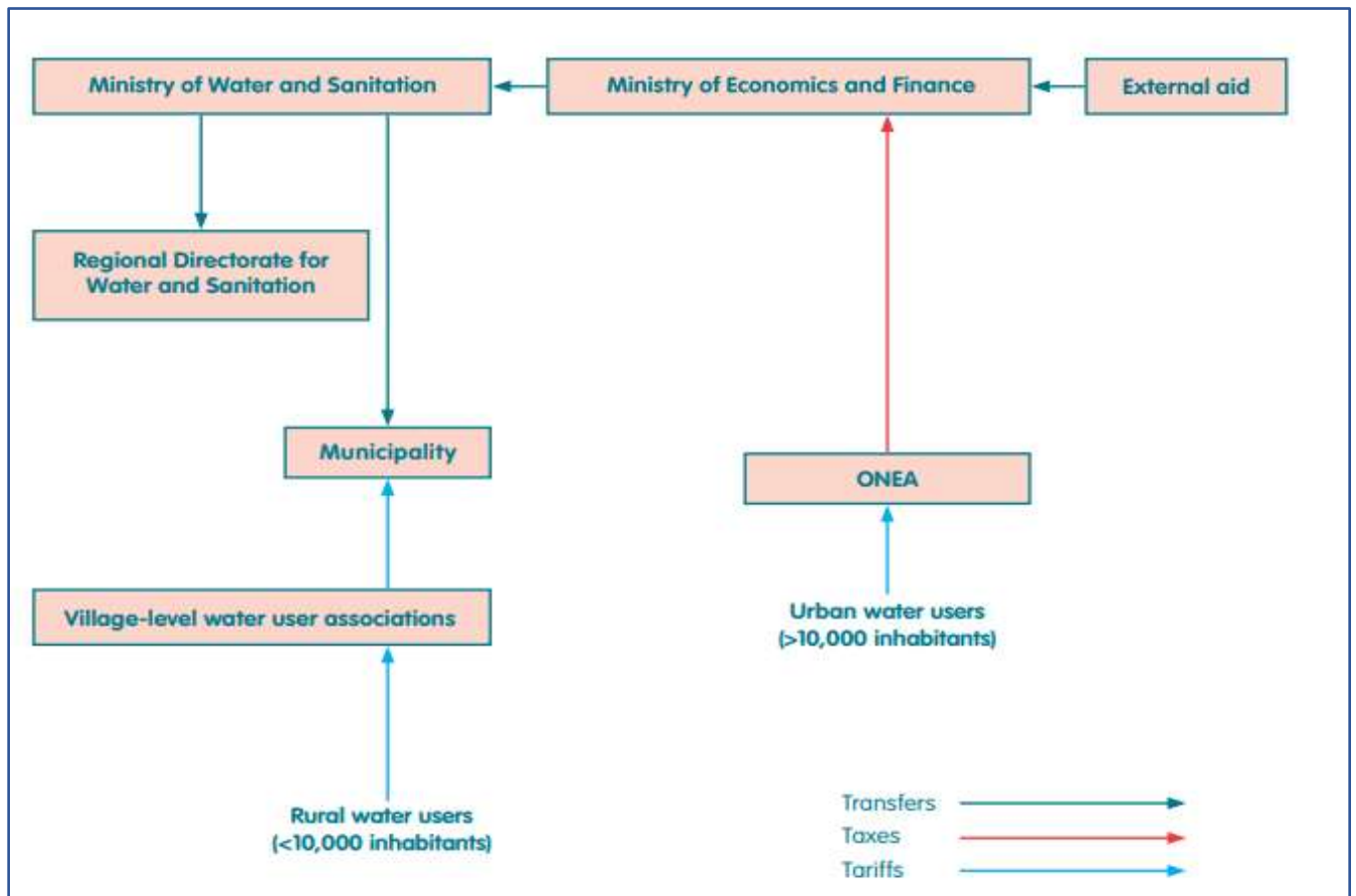
The Danish International Development Agency (DANIDA), the World Bank, and the African Development Bank were the largest donors at the central government level for water and sanitation; these donors provided assistance through various programs and projects. Some donors, such as DANIDA, the Swedish International Development Cooperation Agency (SIDA), and the European Union, provide sectoral budget support, which helps to mobilize WASH funding. These funds are not designated for specific interventions or programs, but their continuation is contingent

on meeting certain WASH indicators each year. The indicators, which were developed collaboratively by the external aid organizations, are used to track progress toward universal access to water and sanitation.

Central revenues, external aid, NGOs, matching funds from municipalities, the private sector, and water and sanitation users have been identified as funding sources for the 2016–2030 programs. Central resources and external aid are the primary sources of funding; NGOs and the private sector are expected to provide support for specific projects.

Despite Burkina Faso's reliance on central aid, ONEA operates with some financial independence because it finances investments through user fees collected in urban areas. ONEA receives some national transfers and external aid (typically in the form of loans) for infrastructure development at the central level, but it operates largely independently. According to ONEA, all operations and maintenance at the local level are funded by user fees.

Figure 4.2. Financial flows in the WASH sector in Burkina Faso



From 2008 to 2014, the 2007–2015 program raised approximately 977.6 million USD (467.8 B FCFA) in water and sanitation funding from both external and internal sources. This was approximately 357 million USD (26 percent) less than the funding required to achieve the MDGs, which was estimated at 1,085 million USD for water supply and 250 million USD for sanitation.

Underfunding of the 2007–2015 program can be attributed in part to reductions in external aid. Despite annual GDP growth during that period, the national government did not increase allocations of own resources sufficiently to cover the reductions in external aid. Furthermore, since 2011, annual public WASH expenditure per capita has been decreasing.

Table 4.3. Burkina Faso WASH financial data, 2010-2015 (USD)

	2010	2011	2012	2013	2014	2015
Total public expenditure on WASH for 2007-2015 National Programme for Portable Water and Sanitation. *	\$133 million	\$172 million	\$150 million	\$155 million	\$133 million**	
Percentage of total public expenditure on WASH from own government resources.	47%	34%	43%	46%	53%	
Percentage of total public expenditure on WASH from external aid.	53%	66%	57%	54%	47%	
GDP	\$8.99 billion	\$10.75 billion	\$11.17 billion	\$11.93 billion	\$12.26 billion	\$10.68 billion
Population	15.6 million	16.1 million	16.6 million	17.1 million	17.6 million	18.1 million
GDP per capita	\$575	\$667	\$673	\$698	\$697	\$590
WASH public expenditure as percentage of GDP	1.5%	1.6%	1.3%	1.3%	1.1%	

Public WASH expenditure per capita	\$8.52	\$10.66	\$9.06	\$9.05	\$7.54	
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*: The total public expenditure for the National Programme for Potable Water and Sanitation from 2007 to 2015 was 977.6 million USD (467.8 B FCFA); the table only shows expenditure from 2010 to 2014, in which contributions from ONEA are included in the figures.

** : Despite annual increases in GDP and reductions in external aid since 2011, the national government has not reallocated its own resources to cover these reductions.

The national government makes potable water allocation decisions in the new program, prioritizing transfers to regions with limited access to water and giving preference to areas without project partners. These decisions are then delegated to DREAs, which assist municipalities in utilizing the funds to construct infrastructure. Furthermore, centrally generated revenues are distributed directly to municipalities and are designated for WASH objectives. Because municipalities have limited capacity, national transfers are typically routed through a DREA. The national government also transfers funds to municipalities via ministries associated with decentralization reforms; these funds can be used for water and sanitation.

4.1.4. Effects of regulatory framework on the social behavior in the water and sanitation sector

Water safety, sanitation, and hygiene are critical to human health and well-being. Safe WASH is not just a necessity for good health; it also contributes to livelihoods, school attendance, and dignity, and it aids in the development of resilient communities that live in healthy settings. Drinking contaminated water causes ailments like diarrhea, and untreated excreta contaminates groundwater and surface waters used for drinking, irrigation, bathing, and domestic reasons. Chemical pollution of water continues to be a health risk, whether it is natural (as in arsenic and fluoride) or artificial (as in nitrate).

In Burkina Faso, despite the fact that 75% of the population now has access to improved water sources, just 47% of households have access to better sanitation, and 47% of individuals still practice open defecation. One-third of rural residents lack even basic access, while the remaining 30% rely on upgraded infrastructure that delivers just a very restricted service. The sanitation

burden remains immense - 63 percent of the rural population still practices open defecation. Urban regions bring a unique set of challenges; the majority of people (93%) use a latrine, yet just 2% are sewer-connected, and the majority of waste is untreated. The results for hygiene are as poor as those for sanitation, with only 8% of rural homes having a soap and water handwashing station.

Taking Banfora District as an example, the drinking water supply is dependent on surface water and borehole groundwater. Water is provided to urban regions via the Moussodougou dam, while rural communities rely on two simplified drinking water supply systems and 227 boreholes with manual pumps. The key issues in this area are the high proportion of individuals who still use an unimproved water source (8 percent), which is higher than the national average. A significant sanitation concern, in addition to open defecation and the large number of people with inadequate services, is that more than 90% of faecal sludge is being released into the environment untreated. Handwashing facilities are available in just a small percentage of households.

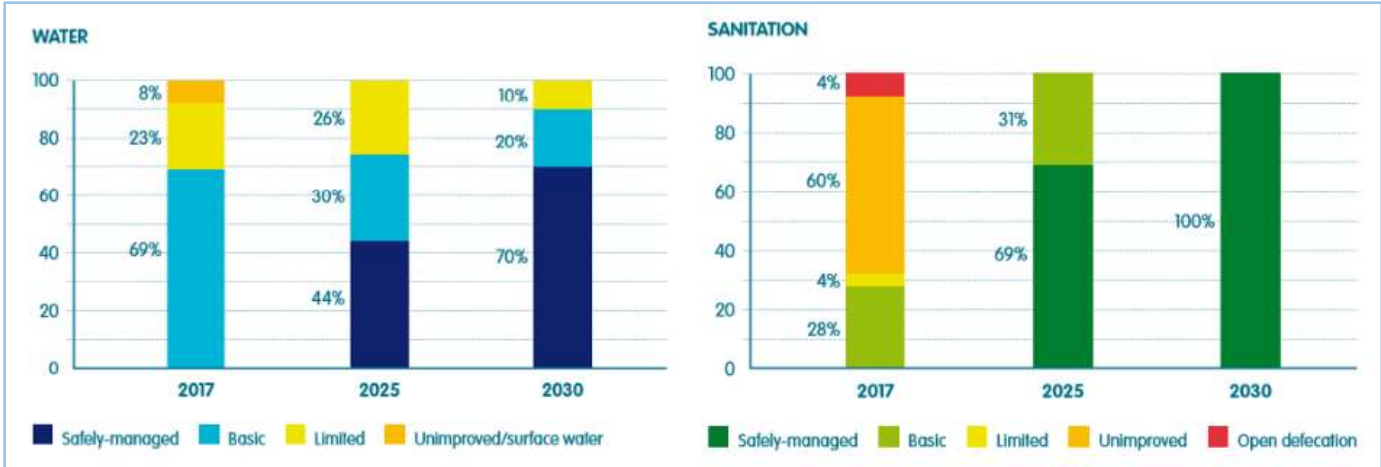


Figure 4.3. Water and sanitation service levels in the Banfora district in 2017 and forecasts for meeting SDG6 by 2030.

CHAPTER 5: CONCLUSION AND RECOMMENDATIONS.

5.1. Introduction

This chapter outlines observations and recommendations based on the research objectives and findings. The main objective of this study was to analyze the regulatory determinants for water and sanitation policies for universal services in Burkina Faso; with the aim to understand how the regulatory framework affect the performance of Burkina Faso in providing universal services.

5.2. Conclusion

This study used a rapid review method to assess the water and sanitation policies and then going on to analyze the regulatory determinants of the water and sanitation policies for universal services. The research focused on the following specific objectives: to review the current water and sanitation policies in Burkina Faso and their implementation and performance; to propose a framework/ guidelines for water and sanitation regulatory determinants for ensuring universal services in Burkina Faso; and, to provide recommendations and strategies to be used for a better policy formulation of the water and sanitation sector.

When it comes to the first research objective; looking at the policy framework, the Burkina Faso government established an Action Plan for the Integrated Management of Water Resources in March 2003 (PAGIRE). PAGIRE supplements a set of management instruments mandated by the governing water management law, which was passed in 2001 and includes a water action plan, a national water policy elaborated in 2015 and a sectoral policy on environment, water and sanitation launched in 2018. Currently, the National Office for Water and Sanitation (ONEA) executes the water strategy strategies in urban areas, including 42 cities and towns. Importantly for rural regions, according to the General Charter of Territorial Collectives (CGCT), since 2009, local groups are given the responsibility for water supply and sanitation.

For the second research objective, the Water Supply and Sanitation sector is overseen by the Ministry of Agriculture, Hydraulics, and Fishery Resources of Burkina Faso. The present institutional structure distributes responsibility for rural and semi-urban regions (defined as less than 10,000 people) between the General Directorate of Water Resources (DGRE) and the National Office for Water and Sanitation (ONEA), a public enterprise in charge of urban WSS. The DGRE works out of the country's 45 provincial offices, while program implementation capacity varies greatly. In general, capacity is higher when there are international aid resources

and programs. Importantly, whether for boreholes or small networks, water committees and user groups have a prominent role in water service administration in rural and semi-urban regions. ONEA, on the other hand, has a reputation for being one of West Africa's top performing utilities. It presently works under a public-private partnership launched with World Bank funding, and has initiated delegated management contracts (leasing) throughout the country.

Lastly, for the third research objective, the national government has strict control over distribution decisions for centrally produced revenues and external aid, which has been cutting per capita allocations over the past years. Municipalities are unable to generate enough revenue from local sources, and transfers from the national government are infrequent and somewhat unpredictable—two factors that limit municipalities' ability to fully fund water and sanitation at the local level, particularly in terms of capital maintenance. As a result, they seek external financing from either short-term project partners (NGOs and other organizations) or long-term financing partners such as GIZ. On the other hand, ONEA has some financial independence because it funds investments with user fees collected in urban zones. At the central level, ONEA gets some national payments and external funding (usually in the form of loans) for infrastructure development, but it functions primarily independently. According to ONEA, all local operations and maintenance are paid by user fees.

Burkina Faso, being a water-scarce country, has very limited access to safe drinking water and sanitation, which contributes to the persistence of waterborne illnesses such as diarrhea. To make matters worse, much of the nation is located inside the growing Sahel, where a tendency of decreasing rainfall has resulted in longer, more violent droughts and flooding after heavy rain events. The gradual deterioration of rainfall-dependent agricultural livelihoods in rural regions has resulted in a continuous increase in rural migration to urban and semi-urban areas, notably Ouagadougou. Population expansion in semi-urban areas is continuously putting strain on current water supply and sanitation (WSS) facilities, while investments and management capacity lag. The necessity to increase water supply and, notably, sanitation services to rural and quickly increasing semi-urban regions is one of the major issues that the WSS industry faces. Furthermore, Water Supply and Sanitation service providers need substantial expenditures in human resources, financial management, and procurement systems.

All the research objectives and questions were addressed, however lack of data was a big challenge as the Water and Sanitation sector of Burkina Faso is not regularly documented.

5.3. Recommendations

An assessment of the ratio of useable water to the country's demands in Burkina Faso indicates that the country is always under water stress. However, due to local conditions, water scarcity is prevalent throughout Burkina Faso, as hydro-geological conditions and flat topography cause much of this rainfall to become unavailable. (WaterAid West Africa , 2021)

Water security is dependent on the availability of water resources and water supply services to obtain, treat, and distribute water to homes. To achieve that, the following recommendations would be of great help for the Water and Sanitation sector of Burkina Faso.

For National policies and Strategies:

- (i) Water sector plans and national poverty reduction/development frameworks, as well as WSS strategies and budgets, require stronger linkages.
- (ii) The national sanitation policy must be complemented by detailed instructions on how to implement it at the decentralized level.

For Institutional Framework:

- (i) For better performance of the transfer of responsibility made in 2009, significant capacity building at the local government level is required.
- (ii) The anticipated national sanitation plan must define clear duties and responsibilities for sector actors, both within and between sectors, as well as at various levels.

For Sector Financing:

- (i) Water Supply and Sanitation services should be modified to reflect cost, desire to pay, suitable technology, and other sustainability issues.
- (ii) Formalize public-private-civil-society partnerships to strengthen WSS in rural regions.

For Sector monitoring and Evaluation:

- (i) Establish a decentralized sector information monitoring system (SIM) that incorporates implementation and outcomes monitoring, input-output-outcome aspects, and the learning capacity required for all users.
- (ii) As part of working toward a more sector-wide strategy, ensure that public expenditures are monitored and become part of routine operations.

These recommendations are grounded on the different challenges perceived in the water and sanitation sector of Burkina Faso.

5.4. Future work

The future research should be on community awareness and engagement in Water Supply and Sanitation Sector more specifically on WSS services payment and reporting for malfunctioning infrastructures, leakages, and frauds.

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