



Intergrated Water Resource Management in Liberia

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ABSTRACT

Integrated Water Resources Management (IWRM) is an important strategy for the sustainable development and management of water resources in Liberia. This article provides an overview of the current state of IWRM in the country, highlighting the key institutions involved in water governance, the policies and regulations for water allocation, and the challenges to water infrastructure development and efficient water use. The article also discusses the importance of water monitoring and data management, as well as stakeholder engagement, in ensuring the successful implementation of IWRM in Liberia.

The analysis shows that while significant progress has been made in improving the governance of the water sector in Liberia, there are still challenges to be addressed. To overcome these challenges, the country will need to continue to develop and implement integrated strategies for water resource management, with a focus on collaboration and partnerships between various stakeholders. With a commitment to sustainable water management practices, Liberia can ensure that its water resources are protected and preserved for future generations.

Keywords: Resources, Water, Management, Quality

1. INTRODUCTION

Integrated Water Resources Management (IWRM) is a comprehensive approach to managing water resources that considers all aspects of water use, including supply, allocation, and protection (UNESCO, 2018). IWRM is crucial for Liberia, as the country faces numerous challenges related to water availability and quality, including poor infrastructure, limited access to

water, and lack of data on water resources (World Bank, 2021). The purpose of this article is to outline the key elements of IWRM in Liberia and to demonstrate the importance of this approach for the country's future.

According to the World Health Organization (WHO), access to safe water and sanitation is essential for reducing the incidence of water-borne diseases in Liberia (WHO, 2021). Effective water management is

crucial for ensuring that water is used effectively to meet the country's health and development goals. In this article, we will examine the components of IWRM in Liberia, including water resources assessment, water governance, water allocation and use, water infrastructure, water monitoring and data management, and stakeholder engagement. We will also explore the challenges and opportunities associated with implementing IWRM in Liberia and highlight the importance of this approach for the country's future.

2. WATER RESOURCES ASSESSMENT IN LIBERIA

In Liberia, water resources are abundant, with a large number of rivers, streams, and lakes throughout the country (Liberia Water and Sanitation Sector Review, 2016). The country has a rainy season that lasts from May to October and a dry season from November to April. Despite the abundance of water resources, access to safe drinking water remains limited in many parts of Liberia, particularly in rural areas. Additionally, water resources are often contaminated with pollutants and pathogens, which pose a significant health risk to communities (Liberia Water and Sanitation Sector Review, 2016). Water resources assessment is a crucial first step in IWRM, as it helps to identify the water needs of different stakeholders and the potential sources of water to meet those needs (World Health Organization, 2021). In Liberia, water resources assessment involves gathering data on water availability, water use, and water quality, as well as assessing the water needs of different sectors, such as agriculture, industry, and human consumption (Liberia Water and Sanitation Sector Review, 2016). The results of water resources assessment can be used to develop water management plans that ensure that water resources are used sustainably and equitably (World Health Organization, 2021).

Water resources assessment is an essential component of IWRM, as it provides the foundation for effective water management and decision-making (World Health Organization, 2021). By identifying the water needs of different stakeholders and the potential sources of water to meet those needs, water resources assessment can help to ensure that water is allocated in a way that meets the needs of communities, businesses, and the environment (Liberia Water and Sanitation Sector Review, 2016). Additionally, by gathering data

on water availability, water use, and water quality, water resources assessment can provide critical information for water management planning, including the development of water management policies, plans, and strategies (World Health Organization, 2021).

Water Governance in Liberia

The rehabilitation and growth of the Water, Sanitation and Hygiene (WASH) sector in Liberia is a remarkable feat in the country's journey towards recovery and development. Over the past decade, since the end of its civil war, Liberia has made significant progress, and the WASH sector is a prime example of the remarkable transformation that the country has undergone. The combined efforts of various actors, including the government, international organizations, and the private sector, have played a crucial role in bringing about this change. The cooperation and partnership displayed in the WASH sector in Liberia serve as a model for other countries facing similar challenges.

Research has demonstrated the significance of rebuilding basic services, such as water and sanitation, in a country's transition from a fragile and conflict-affected state to a state of peace and stability (UN, 2009). Furthermore, supporting country-led processes, such as national planning, is essential in ensuring sustainable growth and development (World Bank Group, 2011). The story of the WASH sector in Liberia highlights the impact that a united effort and strategic partnerships can have on a country's progress towards a brighter future.

Since it was not the main focus of the post-conflict emergency response by development partners, Liberia's Water, Sanitation and Hygiene (WASH) sector faces persistent structural issues that have grown more difficult. In order to rebuild quickly after a war, donors and Liberia's own Ministry of Finance chose to directly fund non-state actors (such as NGOs, CSOs, and development partners) rather than state institutions (World Bank, 2015). This has reduced the sector's institutional ability to take in money and transform it into useful services, which has further reduced investment.

Water allocation and use in Liberia

Water allocation and use is an important aspect of Integrated Water Resources Management (IWRM) in Liberia. The effective management of water resources is critical to ensuring sustainable development and meeting the needs of a growing population.

Policies and regulations play a key role in determining how water is allocated and used in Liberia. These policies and regulations must balance the needs of different stakeholders, including vulnerable communities and the environment, while also promoting efficient and sustainable water use (World Bank Group, 2011).

Prioritizing the needs of vulnerable communities and the environment is crucial in the allocation and use of water resources in Liberia. For example, providing access to clean water to rural communities can help reduce water-borne diseases and improve overall health (UNDP, 2009). Additionally, protecting the environment from the impacts of water use, such as pollution and degradation, is critical for maintaining the long-term health of the water resources in the country (World Bank Group, 2011).

Efficient and sustainable water use is essential for ensuring the long-term viability of water resources in Liberia. This includes promoting the use of water-saving technologies and practices, as well as reducing the waste of water through leaky pipes and other inefficient uses (UNDP, 2009).

However, the challenges to water allocation and use in Liberia are numerous. These include limited access to water in rural areas, limited infrastructure for water treatment and distribution, and a lack of investment in the sector (World Bank Group, 2011). Addressing these challenges is critical to ensuring the sustainable management of water resources in Liberia.

3. OVERVIEW OF WATER INFRASTRUCTURE

The water infrastructure in Liberia is limited and poorly developed. Access to safe drinking water is one of the biggest challenges facing the country, with only approximately 47% of the population having access to improved drinking water sources (WHO/UNICEF, 2019). The water supply system in Liberia is characterized by a low coverage of piped water, with a majority of the population relying on unprotected springs and wells (Liberia Water and Sewer Corporation, 2019).

Water infrastructure is critical for the implementation of Integrated Water Resources Management (IWRM) in Liberia. Adequate water infrastructure helps to ensure access to safe drinking water, sanitation services, and irrigation for agricultural activities. The development of water infrastructure also helps to improve water storage and distribution, which is crucial for meeting the increasing water demand from growing populations and economic activities (USAID, 2019).

Water infrastructure plays a crucial role in protecting the environment and preserving water quality. In Liberia, the development of water infrastructure helps to reduce the risk of water-borne diseases by providing access to safe drinking water and improving sanitation services. Furthermore, the construction of water infrastructure helps to prevent the degradation of water resources by reducing contamination and promoting sustainable water use (USAID, 2019).

Despite the importance of water infrastructure for IWRM in Liberia, there are several challenges to its development. The country is still recovering from the effects of its long-standing civil war, which has left the water infrastructure in a state of disrepair. In addition, the lack of funding, limited technical capacity, and inadequate governance structures have been identified as major barriers to the development of water infrastructure in Liberia (USAID, 2019).

Stakeholder engagement in IWRM in Liberia

Stakeholder engagement is a critical aspect of Integrated Water Resources Management (IWRM) and plays a key role in ensuring the effective and sustainable management of water resources. Stakeholder engagement refers to the process of involving individuals, groups, and organizations that have an interest or influence in a project or decision related to water management (UNESCO, n.d.). The purpose of stakeholder engagement is to ensure that the perspectives and concerns of all relevant parties are considered and incorporated into the decision-making process.

In Liberia, stakeholder engagement is essential for the successful implementation of IWRM. Effective stakeholder engagement helps to build trust and understanding between different actors and stakeholders, thereby promoting cooperation and collaboration. This, in turn, leads to better

decision-making and more sustainable outcomes for water management in the country.

There are various types of stakeholders involved in IWRM in Liberia, including government agencies, such as the Ministry of Water Resources and the Liberia Water and Sewer Corporation (LWSC), local communities, NGOs, private sector organizations, and academic institutions. Each of these stakeholders has different interests and perspectives on water management, and it is important to involve them in the decision-making process to ensure that their perspectives are considered.

Despite the importance of stakeholder engagement in IWRM, there are still challenges to engaging stakeholders in Liberia. These include limited resources, lack of capacity, and conflicting interests among stakeholders. However, with the right strategies and approaches, it is possible to overcome these challenges and ensure effective stakeholder engagement in IWRM in Liberia.

4. CONCLUSION

In conclusion, Integrated Water Resources Management (IWRM) is crucial for the sustainable development and management of water resources in Liberia. The country has made great strides in improving the governance of its water sector, through the establishment of institutions such as the Ministry of Water Resources and the Liberia Water and Sewer Corporation (LWSC). Additionally, Liberia has implemented policies and regulations for water allocation that prioritize vulnerable communities and the environment. However, there are still challenges to overcome in terms of improving water infrastructure and efficient water use, as well as enhancing stakeholder engagement and water monitoring and data management.

To address these challenges, Liberia will need to continue to develop and implement effective and integrated strategies for water resource management. This will require collaboration and partnerships between various stakeholders, including government agencies, civil society organizations, and local communities. With a commitment to sustainable water management practices, Liberia can ensure that its water resources are protected and preserved for future generations.

Conflict of interest statement

Authors declare that they do not have any conflict of interest.

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