

# **Supervision and Management of Water Resources in Rural Wash Services for Sustainability in Nigeria**

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## **ABSTRACT**

Access to climate resilient safe drinking water, sanitation and hygiene (WASH) remains a recurring challenge in Nigeria. Progress in the sector achieved through the collaborative efforts of Government and Development Partners is often hindering by the growing population. While the Covid-19 pandemic and the national cholera outbreak in 2021 presented an opportunity for investment in water sanitation and hygiene with significant effort on hand hygiene. Their impact on socioeconomic activities has adversely affected gains in the WASH sector. According to the history, the sustainability of WASH projects has long been of concern. As part of its sustainability plan, the small town WASH activity aims at building capacity by training Small Town Water Supply and Sanitation Agencies (STWSSA) and Water Consumer Associations (WCAs) and other service providers on the Private Sector Participation (PSP) concept, non-revenue water, tariff structure, operation & maintenance, financial modelling, and citizens' engagement with Civil Society Organization (CSOs) to demand for services. STWASH team believes that community ownership is essential to ensure the sustainability of the proposed intervention. Despite continued large-scale funding by governments and international donor agencies, the sustainability of WASH schemes is laden by numerous problems, including technical failures, management and supervision of contracts as well as financial and management challenges. The objectives of this research is to focus on management and supervision used in WASH for sustainability of safe drinking water and access to sanitation facilities and hygiene to people thus reducing the environmental health risks. Previous literatures review was adopted in the research for results, conclusion and recommendations. Results indicated 179 million of Nigerians do not have access to safely managed drinking water services, 48 million people still defecate in the open space. Therefore, there is need for establishment of genuinely sustainable water, sanitation and hygiene services in the country. WASH policy issues addressing sustainability of WASH services must always be given priority. Sustainable Development Goal 6 should goes beyond drinking water, sanitation and hygiene but also address the quality and sustainability of water resources among the agenda.

**Key words:** *water, sanitation, hygiene, sustainability, climate, population.*

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## **INTRODUCTION**

Despite the country's endowment of abundant natural and human resources, Nigeria ranks as one of the poorest countries in the world with more than 65% of the population living below the poverty line. The low coverage of rural water supply and sanitation is of high cost to the rural economy and its consequences are extremely affected by the poor rural people, particularly women as family-head who cannot afford to buy water and their children spending time collecting water instead of attending school. Because of this, majority of the rural population resorts to unhygienic sources of water, which affects community health and their productivity. 2006 census has shown population of Nigeria at about 140 million with about 70 million living in rural areas. Access to safe water facilities is expected at 43% for rural areas and 71% for urban centres, with an average access rate of 54%. Rural sanitation coverage is 32% and urban 75%, with an average access rate of 53%. As a result of this people suffer from water related diseases such as diarrhoea, cholera, typhoid, and guinea worm in many communities. The mortality rates are consequently reported at an excessively high with valued of 110.6 for infants and 193.6 for under-five per 1000 live births as compared to the average of 83.6 and 139.6 across Africa (African Development Fund Appraisal Report, 2007).

The environmental and social risks have been assessed and deemed to be Substantial. Specific environmental risks were assessed as substantial because the program involves the construction and rehabilitation due to the geographically dispersed nature of supported of WASH infrastructure across seven level 1 states. If the processes of management of environmental and social impacts pertaining to design, siting civil works and operations are not rigorously managed and monitored throughout the process of implementation, significant impacts may be experience on the scheme.

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While potential impacts could lead to adverse Environmental & Sanitation(E&S) consequences with less severe diverse and adjustable with appropriate mitigation actions. E & S risks are intensified due to poor capacity within the WASH agencies to effectively manage these E&S risks, which is currently assessed as weak, especially at the LGA level (SURWASH, 2021).

Access to water supply, sanitation and hygiene (WASH) is an important determinant of human capital outcomes, including early childhood survival, health and educational attainment all of which in turn affect labour productivity and efficiency. Approximately 73% of the total burden of enteric infections in Nigeria is related with poor WASH. About 253,800 WASH attributable deaths happened in Nigeria in 2016, with 119,900 of those deaths occurring from diarrheal diseases. There is robust evidence that access to safe water supply and improved sanitation declines the incidence of diarrhoea in young children. Similarly, a large part of the chronic malnutrition burden is owing to the unhygienic environment in which children grow up, often result in high levels of open defecation across heavily populated areas. Access to WASH can impact years of schooling by freeing up time that children spend collecting water to attend school, reducing the prevalence of disease that can keep them out of school, and contributing to a safe and healthy learning environment while at school. Safely managed WASH services are an essential part of preventing disease and protecting human health during infectious outbreaks diseases. Good and consistently applied WASH and waste management practices serve as essential barriers to waterborne diseases and to human-to-human transmission of infectious diseases in communities, homes, health care facilities, schools, and other public places (SURWASH, 2021).

## **RESEARCH OBJECTIVES**

1. To determine the nature of WASH supervision activities in Nigeria states.
2. To find out the maintenance approaches used in WASH infrastructures in Nigeria
3. To determine how WASH services sustainability can be achieving in Nigeria states.

## **LITERATURE REVIEW**

Nigeria is endowed with enormous water resource as is evident in the volume of rainfall, surface and underground water deposits (Ezeabasili et al, 2014; Idu, 2015) and yet, the gap between water needs and water supply appear to be broadening (Chukwu, 2015). Water resources development in Nigeria is threatened by both natural factors such as outcomes of climate change and hydrological extremes, and anthropogenic factors such as pollution of water bodies with industrial wastes, oil spillages, and salinization of surface and ground waters through irrigation and applying fertilizers (Idu, 2015).

Shortage in the water management and supply system in Nigeria has controlled to many citizens resorting to self-help and exploiting the underground water resources in an unstructured, uncoordinated and unsustainable manner (Akpor & Muchie, 2011). As noted by Omole (2013), over 60% of Nigerians with access to drinking water now get it from underground sources. He also noted that sustainable groundwater use in Nigeria is challenged by funding, weak institutions, poor data management system, poor implementation of groundwater exploitation regulation, in addition to hydrological factors. Many private business ventures have emerged from the decadence of water management and supply Nigeria. For most poor and rural dwelling citizens, access to clean water supply has continued to be a challenge. (Omole 2013).

Access to water generally for all economic use and clean drinking water is still a prevailing challenge across Nigeria. The Nigerian state has largely failed in its responsibility of providing potable water to the population, leaving about 2/3 or close to 70% of the population to resort to self-help in addressing their water needs. The situation is worse in the Northern part of the country with 30% or less of the population have access to their daily water needs (Owoseye, 2018; USAID, 2019). In comparison with the urban areas where about half the population have access to potable water, nearly to 80% of the rural population lack access to potable water, leading to dependence on streams and ponds which may not be safe (Khatri , 2014).

In 2018 survey by the ministry of water resources and the National Bureau of Statistics concluded that only 44% of the population have access to basic sanitation facilities, which mostly enjoyed by urban people. Water deficiency and poor sanitation contributes to the spread of infectious diseases like diarrhoea and flu. The funding of water resource development in Nigeria does not commensurate with its aspirations and stated objectives as current average annual national commitment of 86 billion Naira (\$220 million) does not commensurate to the annual investment requirement of 974 billion Naira (\$2.5billion) necessary to meet SDG objective by 2030 (Falaju, 2017). In line with the Millennium Development Goals (MDG) and the commitment of the government of President Goodluck Jonathan in 2010, 75% of the population should have access to safe drinking water by 2015. Sadly, in 2011, the year after the commitment by President Goodluck Jonathan, the budgetary allocation to the Ministry of Water Resources was slashed by almost half. Since then, the budgetary allocation for water resource development has shown a consistent pattern of inconsistent commitment with the lowest allocation in fiscal year 2015, in

comparison with allocations in all the other fiscal years between 2010 and 2020 (Akpe, 2012).

In the first year of president Muhammadu Buhari's first tenure, the percentage of national budget dedicated to water resources development fell to 0.02%. In the three years after that, it rose slowly to 0.8%, 1.5%, and 1.7% respectively. The percentage of budget dedicated to water resources development in 2019 and 2020 has not indicated that the government intends to prioritize the sector. 73 billion naira (0.8%) out of a total budget of 8.9 trillion naira in 2019, and 100 billion naira (0.9%) out of a total budget of 10.5 trillion naira in 2020, did not indicate significant positive change in the prioritization of the sector by government (Akpe, 2012).

The National Water Policy of 2004 is a guiding instrument for the management of water resources in Nigeria. The objective of the policy was to further the exploitation and management of the national water resources in a sustainable manner to meet the needs of both the present and future generations. Hence, it is a harmony of other frameworks like Water Act of 1993, the preparation of the National Water Resources Master Plan in 1995, the Water Resources Management Reform Programme commenced in 1997. The policy framework is an attempt to harmonize and consolidate water objectives in a clear and coherent blueprint (FGN, 2004b). Sadly, the effort has not resulted in better water resource management and the gap between water needs and supply for most Nigerians.

The government of Nigeria, over time, has set up regulatory institutions and agencies for the exploitation and management of water resources such as National Water Resources Institute (NWRI), River Basin Development Authorities, federal ministry of water resources etc. Despite the numerous policies, legal and institutional regimes evolved by government for the management of water resources to

satisfy national water needs, the shortage persists. This is probably the case because satisfying water needs appears to be one of the least priorities of government as the aspirations are not duly pursued with a purposeful systematic funding and implementation. Sustainable development is "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (UN General Assembly, 1987). Efficient water resource management is necessary for water security. The key factors that have been implicated in the definition of water security include availability, access, and conflicts or disputes associated with water (Wouters, 2010). Water security therefore entails availability and access to water within the context of safety and security. It is the sustainable, management and use of water systems to meet present water needs. Water resource management system in Nigeria is multi-layered with a central authority for the management of water resources residual in the ministry of water resources, a water resource ministry at the state level, while the local governments are responsible for distributing water to rural areas (Ezeabasili, 2014). The challenges of water resource management in Nigeria has been severally blamed on the paucity of data (Adeaga et al, 2006), deficit of implementation of the integrated water management system (Adeoti, 2014).

Sustainability is the future as the international community transits to sustainable use of resources in a manner that takes the needs of the generation of the future into account. We observed that water resource is fundamental to the sustainable development of all sectors of the economy and political system, and the general wellbeing of the people. While Nigeria is naturally endowed with enormous water resources, most of its citizens and its national economy has been suffering from thirst and water shortage.

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Water drives economic growth, supports healthy ecosystems, agriculture, energy production, sanitation and sustainable waste management. The significance of water to economic growth, healthy living and the prevention of the spread of infectious diseases, manufacturing and industrialization cannot be overstated. Water is an indicator of life, a lack or under-supply of it increases the risk of infectious diseases, poor industrialization, poor personal and community hygienic, poor food production, conflicts, human rights abuses, and poverty. More than a million deaths yearly have been recognized to unsafe water and poor sanitation, with 90% of the deaths occurring in children under the age of five in developing countries (WHO, 2019). The goal six of the SDG aims to fulfil, particularly, all domestic water needs by 2030. In spite of the important significance of water, a resource naturally made available in its abundance in the country, its poor management and under-utilization is continuing to undermine the socio-economic development of Nigeria (Odume & Slaughter, 2017; Salau, 2017; Independent, 2018; Oyebode et al, 2015; Oyebande, 1978). Though Nigerians of different communities had always seen to their water needs in precolonial times through the maximization of the different water sources made naturally available to them, like streams, springs, ponds, rain water, and the wells they have dug for themselves, particularly in the northern region, efforts to manage and deliver water in a modern network system was introduced by the British colonial government (UNJPE, 2021).

## **METHODOLOGY**

This research work was solely relied on the previous literatures reviews of various authors from different organizations such as government report, Non-governmental reports, groups reports and individual report as well. Every organization have their own ways of

conducting supervision and maintenance in their projects. This research only focuses on the nature and policy of project supervision and maintenance in water sanitation and hygiene(WASH) in Nigeria states.

## **DISCUSSION**

Access to water generally for all economic use and clean drinking water is still a prevailing challenge across Nigeria. The Nigerian state has largely failed in its responsibility of providing potable water to the population, leaving about 2/3 or close to 70% of the population to resort to self-help in addressing their water needs. The situation is worse in the Northern part of the country with valued almost 30% or less of the population access to their daily water needs (Owoseye, 2018; USAID, 2019). In comparison with the urban areas where about half the population have access to potable water, almost 80% of the rural population lack access to potable water, leading to reliance on streams and ponds which may not be safe (Khatri & Tyagi, 2014). In 2018 survey by the ministry of water resources and the National Bureau of Statistics concluded that only 44% of the population have access to basic sanitation facilities, most of which are enjoyed by urban dwellers. Water deficiency and poor sanitation contributes to the spread of infectious diseases like diarrhoea and flu. The funding of water resource development in Nigeria does not commensurate with its aspirations and stated objectives as current average annual national commitment of 86 billion Naira (\$220 million) does not commensurate to the annual investment requirement of 974 billion Naira (\$2.5billion) necessary to meet SDG objective by 2030 (Falaju, 2017). In line with the Millennium Development Goals (MDG) and the commitment of the government of President Goodluck Jonathan in 2010, 75% of the population should have access to safe drinking water by 2015 (Akpe, 2012). Unfortunately, in 2011, the year after the commitment by President Goodluck Jonathan, the budgetary

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allocation to the Ministry of Water Resources was slashed by almost half. Since then, the budgetary allocation for water resource development has shown a consistent pattern of inconsistent commitment with the lowest allocation in fiscal year 2015, in comparison with allocations in all the other fiscal years between 2010 and 2020.

The National Water Policy of 2004 is a guiding instrument for the management of water resources in Nigeria. The objective of the policy was to further the exploitation and management of the national water resources in a sustainable manner to meet the needs of both the present and future generations. The policy framework is an attempt to harmonize and consolidate water objectives in a clear and coherent blueprint (FGN, 2004b). Sadly, the effort has not resulted in better water resource management and the gap between water needs and supply for most Nigerians. The challenges of water resource management in Nigeria have been severally blamed on the paucity of data (Adeaga et al, 2006), deficit of implementation of the integrated water management system (Adeoti, 2014).

Sustainability is the future as the international community transits to sustainable use of resources in a manner that takes the needs of the generation of the future into account. We observed that water resource is cardinal to the sustainable development of all sectors of the economy and political system, and the general wellbeing of the people. While Nigeria is naturally endowed with enormous water resources, most of its citizens and its national economy have been suffering from thirst and water shortage.

## **CONCLUSION**

Water drives economic growth, supports healthy ecosystems, agriculture, energy production, sanitation and sustainable waste management. The significance of water to economic growth, healthy living and the

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prevention of the spread of infectious diseases, manufacturing and industrialization cannot be overstated. Water is an indicator of life, a lack or under-supply of it increases the risk of infectious diseases, poor industrialization, poor personal and community hygiene, poor food production, conflicts, human rights abuses, and poverty. Results indicated 179 million of Nigerians do not have access to safely managed drinking water services, 48 million people still defecate in an open space. Therefore, there is need for establishment of genuinely sustainable water, sanitation and hygiene services in the country. WASH policy issues addressing sustainability of WASH services must always be given priority. Sustainable Development Goal 6 should go beyond drinking water, sanitation and hygiene but also address the quality and sustainability of water resources among the agenda.

## **RECOMMENDATION**

1. The money budgeted for the water resources institutions should be used effectively.
2. The available policies provided by water resources institutions should be fully implemented
3. Natural factors such as outcomes of climate change, hydrological extremes, and anthropogenic factors should be handled properly.
4. Strong monitoring team at all three tiers of government in the country should be provided.
5. The fiscal year budget by the three tiers of government on water should be double.

## **REFERENCE**

Adeaga, O., Oyebande, L. & Balogun, I. (2006). PUB and water resources management practices in Nigeria. Predictions in Ungauged Basins:

- Promise and Progress (Proceedings of symposium S7 held during the Seventh IAHS Scientific Assembly at Foz do Iguaçu, Brazil.
- Adeoti, Olusegun (2014). An institutional analysis of the implementation of integrated water resources management in Nigeria. Doctor of Philosophy (Ph. D) Thesis Academic Year: 2013 – 2014, Cranfield University
- African Development Fund Nigeria (2007) Rural Water Supply and Sanitation Sub-Programmes for Yobe and Osun States. Appraisal Report.
- Akpe, A. (2012). Nigeria president promises water, slashes budget. <https://pulitzercenter.org/reporting/nigeria-president-promises-water-slashes-budge>
- Akpor, O.B. & Muchie, M. (2011). Challenges in meeting the MDGs: The Nigerian drinking water supply and distribution sector. *Journal of Environmental Science and Technology*, 4 (5), 480-489.
- Chukwu, K. E. (2015). Water supply management policy in Nigeria: challenges in the wetland area of Niger Delta. *European Scientific Journal*, 11(26), 303-323
- Ezeabasili, A. C. C., Okoro B. U., & Ezeabasili, A. I. (2014). Water resources: management and strategies in Nigeria. *An International Journal of Science and Technology*, 3(1), 35-54.
- Falaju, J. (2017). Nigeria Water Resource Roadmap and the huge financial deficit. *The Guardian*. <https://guardian.ng/features/nigeria-water-resource-roadmap-and-thehuge-financial-deficit/>
- Federal Government of Nigeria (2004b). National water policy <http://extwprlegs1.fao.org/docs/pdf/nig158231.pdf>
- Idu, A. J. (2015). Threats to water resources development in Nigeria. *Journal of Geology and Geophysics*, 4(3), 1-10. doi:10.4172/2329-6755.1000205
- Khatri, N., & Tyagi, S. (2014). Influences of natural and anthropogenic factors on surface and groundwater quality in rural and urban areas. *Frontiers in Life Science*, 8(1), 23–39. doi:10.1080/21553769.2014.933716
- Odume, N. & Slaughter, A. (2017). How Nigeria is wasting its rich water resources. *The Conversation*. <http://theconversation.com/how-nigeria-is-wasting-its-rich-waterresources-8311>
- Omole, D. O. (2013). Sustainable groundwater exploitation in Nigeria. *Journal of Water Resources and Ocean Science*, 2(2), 9-14. doi: 10.11648/j.wros.20130202.11
- Owoseye, A. (2018). World water week: how two thirds of Nigerians survive without potable water. *Premium Times*. <https://www.premiumtimesng.com/health/health-news/281693-worldwater-week-how-two-third-of-Nigerians-survive-without-potable-water.html>
- Oyebande, L. (1978). Urban water supply planning and management in Nigeria. *GeoJournal*, 2(5), 403-412. [www.jstor.org/stable/41142135](http://www.jstor.org/stable/41142135)
- Oyebode, O. J, Adebayo, V. B., & Oyegoke, S. O. (2015). Water and Development Challenges in Nigeria. *International*

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- Journal of Scientific & Engineering Research, 6(8), 1145- 1160.
- Salau, S. (2017). Government urged to maximise economic benefits of water resources. The Guardian. <https://guardian.ng/business-services/government-urged-to-maximiseeconomic-benefits-of-water-resources/>
- Sustainable Urban and Rural Water Supply Sanitation and Hygiene Program for Results (2021). Environment and Social Systems Assessment. Federal Republic of Nigeria World Bank Program-For-Results Financing.
- United Nations General Assembly (1987). Report of the world commission on environment and development: Our common future. Oslo, Norway: United Nations General Assembly, Development and International Co-operation: Environment.
- USAID. (2019) Nigeria Water. <https://www.usaid.gov/nigerAia/water>
- WHO & UNICEF n.d. “Nigeria: estimates on the use of water sources and sanitation facilities (1980 - 2015)” [data file]. Joint Monitoring Programme (JMP) for Water Supply and Sanitation. <https://www.wssinfo.org/documents/>
- Wouters, P. (2010). Water security: global, regional and local challenges. Institute for Public Policy Research (IPPR). [www.jstor.org/stable/resrep16067](http://www.jstor.org/stable/resrep16067)