

Research Paper

Does economic policy in Nigeria enhance sustainable water and sanitation facilities?

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ABSTRACT

Over the years, economic policy in Nigeria has been a subject of concern for policymakers. The effectiveness of this policy in providing basic necessities for Nigerians has also been in question. There have been several controversies in terms of its implementation and sustainability over the years. In this paper, we investigate the impact of economic policies on providing sustainable water and sanitation facilities in Nigeria. In our analysis, the binary logistic model is adopted to understand how effective these policies are in providing these facilities. The results show that expenditure on social and community service leads to an increase in the use of unsafe sanitation facilities in the country. Furthermore, our study also shows that expenditure in the health services sector helps in reducing the use of such unsafe facilities. From the results, we recommend that policies aimed toward providing sustainable water and sanitation facilities need proper checks, improvement, and effective implementation so as to achieve viable results. These can be done by implementing supervised community projects on sanitation facilities and also by educating local communities through organized symposiums and workshops in rural and certain urban areas in the country.

Key words: economic policy, PEWASH, unsafe sanitation, water sanitation, WASH

HIGHLIGHTS

- This paper pays particular attention to how water and sanitation can be improved to better human lives.
- The paper looks at economic policy and how such policy can improve water and sanitation facilities within an economy.
- It tries to look at how policy can drive sustainable water and sanitation in Nigeria.
- It particularly looks at the different geopolitical zones in the country.

INTRODUCTION

Proper hygiene and substantial health benefits can be provided to people only if there is adequate, portable, and safe water supply integrated with proper sanitation facilities. Sanitation is defined as the availability of facilities and services for the safe disposal of human excreta and its appropriate disposal in an economically feasible, socially satisfactory, and technically and institutionally suitable way, while ensuring the protection of the environment and natural resources (Ezeudu 2019). The World Bank defined it as the 'intervention to protect people from exposure to diseases by ensuring a clean environment for living, with the goal of breaking the cycle of diseases' (World Bank in Ezeudu 2019). Generally, sanitation involves safe management of human waste, garbage, and wastewater and the provision of washing facilities for ensuring people's personal and domestic hygiene.

Access to portable water and provision of sanitation facilities constitutes one of the basic human needs necessary for the attainment of a better quality of life. Evidence from the literature shows how vital water is to human existence (OECD 2011; Nwankwoala 2011; Chukwu 2015). Investing in water and sanitation facilities usually confers a lot of economic, environmental, health, and social benefits; in fact, it forms a part of both MDG and SDG targets. Hence, access to safe potable water and sanitation reduces health risk, sustains human life, promotes sustainable economic development and safety of the ecosystem, and increases the productivity of the workforce (OECD 2011).

Nigeria is said to be blessed with abundant water resources, although there is temporal and spatial variation in rainwater availability, with the northeast corner of the country having a low precipitation of only about 500 mm and the southeast

having a perspiration of over 4,000 mm (FRN 2004). These variabilities have an adverse effect as a large percentage of the Nigerian population do not have access to potable water, with only 52% of the urban and 39% of rural dwellers having access to potable water (FOS Cluster Survey in FRN 2004).

Insufficient and unsafe water supply constitutes a serious public health problem (African Development Bank & OECD 2007) and poses a serious challenge to water resources management and environmental sustainability. As population increases, there is a subsequent demand for water, leading to a reduction in the quantity of water supplied, leaving some people to resort to the use of unsafe water as an alternative (Okoye 2015). Hence, as population increases, the demand for water also increases, leading to a reduction in the quantity and quality of water supply (Chukwu 2015).

The state of sanitation and access to water supply in Nigeria is so alarming; about 33.82% (47.3 million) Nigerians depend solely on surface water for domestic purposes such as drinking, washing, bathing, farming, and livestock raising, 28.27% (39.3 million) on hand dug well source, 24.38% (33.9 million) on pipe-borne water, 11.83% (16.4 million) on borehole water source, and 1.7% (2.4 million) on water vendors. Increased scarcity of water (through draught or other access restrictions) brings lots of hardships to people and also reduces household capacity to combine water with other assets in order to produce income (Ademiluyi & Odugbesan 2008; Ajibade *et al.* 2015).

From Table 1, it can be seen that the state of sanitation and access to water supply in Nigeria is alarming; about 33.82% (40,376) of Nigerians depend solely on surface water for domestic purposes such as drinking, washing, bathing, farming, and livestock raising, 28.27% (33,750) on hand-dug well source, 24.38% (29,106) on pipe-borne water, 11.83% (14,123) on borehole water source, and 1.7% (2,029) on water vendors. Increased scarcity of water (through draught or other access restrictions) brings a lot of hardship to people and also reduces household capacity to combine water with other assets in order to produce income (Ademiluyi & Odugbesan 2008; Ajibade *et al.* 2015). Furthermore, in regard to the household type of toilet facilities, it is shown that about 54.99% of the people use nonflush pitlatrines, 3% use the water closet or the sewer system, and 30.76% use other unsanitary methods such as defecating in open fields and disposal into water bodies. Hence, millions of Nigerians are at risk of epidemic outbreak since surface water and environment are not safe, resulting in adverse effects on the quality of life (Ajibade *et al.* 2015).

In a bid to address the problems of the poor state of sanitation and access to good water supply, and also to provide good quality of affordable water and free access to all citizens, the government has made frantic efforts to initiate the concept of hydrogeological mapping and to establish good water quality laboratories and has also encouraged private sector investments. In Nigeria, it is the sole responsibility of the government and its agencies, both at the federal and state levels, to

Table 1 | Tabulation of the type of toilet facilities used by households in Nigeria

Variable	Frequency	Percentages (%)
Household type of toilet facility		
Flush to pit latrine	12,409	10.39
Bush/field	36,726	30.76
Cluster system	3,577	3.00
Nonflush pit latrine	65,655	54.99
Not a de jure resident	853	0.71
Others	166	0.14
Total	119,386	100.00
Sanitation and access to water supply		
Drinking, washing, farming, and livestock raising	40,376	33.82
Hand-dug water source	33,750	28.27
Pipe-borne water source	29,106	24.38
Borehole water source	14,123	11.83
Water vendors	2,029	1.7
Total	119,386	100.00

Source: Demographic Health Survey Data (DHS 2018).

Table 2 | Definition of variables

variables	definition	source
Unsafesanit	Poor sanitation facility (1,0)	Constructed
Swater	Sustainable water facility (1,0)	Constructed
Typetoilet	Type of toilet facility	DHS (2018)
Ehealth	Expenditure on health (billion Naira)	CBN (2018)
Escserv	Expenditure on social community services	CBN (2018)
Hv201	Source of drinking water	DHS (2018)
Corrpi	Corruption perception index	WGI (2020)
Ccr	Control of corruption	WGI (2020)

promote water resource development. Such agencies include the Federal Ministry of Water Resources, Federal and State Ministry of Agriculture and Environment, State Water Agencies, and nongovernmental agencies such as UNICEF, World Bank, and AfDB (Chukwu 2015).

The Nigerian Government has been increasingly concerned about the poor level of operation and maintenance of water infrastructure, and consequently, enacted the Water Act 101 of 1993, prepared the National Water Resources Master Plan in 1995, and initiated the Water Resources Management Reform program that commenced in 1997, which provided inputs for the formulation of a Water Resources Policy and principles and strategies (FRN 2004). Also, the Federal Government of Nigeria in 2000 enacted a water policy to meet the policy target of improved water from 40% in 2000 to 60% in 2003 and the projection of service coverage to 80% in 2007 and further to sustained service coverage of 100% in 2011 (FGN 2000; Chukwu 2015). The government has shown much commitment in order to meet the sustainable development goals (SDGs) on WASH. The SDG 6 constitutes one of the goals of the partnership for an expanded water, sanitation and hygiene (PEWASH) framework 2030, the National Roadmap for the Elimination of open defecation 2025, and the national action plan for WASH. The PEWASH and the national action plan were formulated in order to combat the challenges affecting the WASH sector, with the aim of achieving 100% WASH coverage by 2030.

The Nigerian Government launched the PEWASH and ODF road maps in 2016 and the National Action Plan in 2018. A National Water Resources Bill and revised national water supply and sanitation policy are pending with the national assembly for approval. The aim of these plans and legislations is to address the policy gaps in the water sector and translate the SDGs into Nigeria's national development agenda. The government has clearly demonstrated urgency in meeting the SDGs in the form of a presidential declaration of a state of emergency in the WASH sector. In WASH service delivery, Nigeria also makes use of proven approaches and strategies, and these include the community-led total sanitation, village-level operation management, WASH committee management, water safety planning, harmonized procurement guidelines, and sanitation marketing and financing (WASH NORM 2018). The findings from this study will help the government of Nigeria and others elsewhere to pursue policies that are specifically targeted at ensuring sustainability in water and sanitation facilities and access to these facilities. Therefore, it is important to study these issues as it could serve as a lesson for other countries.

Despite these policies and strategies mapped out to actualize the set objectives, the provision of portable water and a healthy environment has not been easily achieved in Nigeria. It is, therefore, the aim of this paper to investigate the following objectives: to determine the probability that households have access to sustainable water facilities and to determine the effect of economic policy on sanitation facilities in Nigeria.

ECONOMIC POLICY LINKAGES OF WATER AND SANITATION IN THE LITERATURE

In all literature, it has been argued that the total volume of water available in surface and groundwater resources is enough to meet the current drinking water demands of the Nigerian people (African Development Bank/OECD 2007), but its supply is limited due to certain factors such as corruption, poor infrastructure, noncompliance, and poor implementation of economic policy (Chukwu 2015). Scholarly evidence has revealed several challenges in ensuring proper water and sanitation facilities in Nigeria, including the following: a lack of distribution capacity, weak and inefficient institutions, policy inconsistency, unsustainable public sector spending, poor water quality, conflicts over water use and management, poor political precedence for water issues, suboptimal level of investment in the areas of water infrastructure, and poor maintenance (African Development

Bank/OECD 2007). Chukwu (2015) conducted a descriptive investigation on the wide gap that exists between water need and supply in the wetlands of Niger Delta, Nigeria, and the study found that the challenges in ensuring sustainable water supply in the area include a lack of compliance with economic policy, corruption, low level of infrastructure, disjointed responsibility, and the inability to recover the cost of water supply. Kooy & Harris (2012) applied political economy analysis in their study on water, sanitation, and hygiene service delivery using Vietnam and Sierra Leone as a case study. Their study found similar political economy governance challenges in both countries as a result of political short-termism, patronage networks and favoritism, and the lack of collective action.

Furthermore, Akpabio (2012) conducted a descriptive assessment constraint using policy trends and policy practices in Nigeria relating to the provision of water supply and sanitation in the past 20 years. Their result shows that apart from other challenges that characterized WASH coverage in most developing countries, Nigeria faced peculiar challenges such as multiethnic group politics, long years of military rule, and a substantial increase in executive corruption. Nwankwoala (2011) investigated different interrelated approaches to water and sanitation problems in Nigeria by adopting different government policies and implementation. The study employed descriptive analysis in order to identify challenges in governance, policies, and priorities as factors responsible for poor water and sanitation service delivery. It was identified in the study that these challenges were the reasons for poor service delivery of water and sanitation in the country.

In the same vein, Adewunmi *et al.* (2020) studied the effectiveness of onsite sanitation and solid waste management in public places in Nigeria and tested the hypothesis of inadequate economic policy by employing logical sampling methods. It was found that existing sanitary facilities were insufficient to match the demand of the populace; also, the maintenance of these facilities was not up to the mark as a result of inadequate monitoring.

Increase in public health expenditure was found to reduce infant and under five mortality rates in sub-Saharan African countries. These results were achieved as a result of viable economic policies (fiscal policies) put in place to help solve the issue of lack of proper water and sanitation facilities in SSA countries (Kalbessa 2018).

Abubakar (2017), in his work on the access to sanitation facilities among Nigeria households, used data from the 2016 World Development Indicator and the 2013 Nigeria Demographic and Health Survey (NDHS). Employing descriptive frequency and percentage and inferential statistics (χ^2 , ANOVA, *t*-test, and multivariate regression), the result revealed that in the last two decades, the proportion of Nigerians with access to improved sanitation has declined, while the practice of open defecation has risen. Furthermore, the result indicated significant relationships between different types of household sanitation facilities and socioeconomic factors.

Similarly, Ezeudu (2019) descriptively assessed the past, present, and future status of urban sanitation in Nigeria in relation to access coverage, institutions, and policies as well as future challenges and prospects. Grouping the material into two periods, before 1999 and after 1999, the study revealed that due to a lack of data, the past status was not easy to assess and the present status revealed that water supply cases receive much attention than sanitation due to a merging of policies, implementation, and discussion on both water and sanitation. When the agenda for sanitation was taken up for discussion, it was revealed that rural areas receive more attention than the urban areas; this is also true when one looks at the literature on the issue of water and sanitation. The future of urban sanitation is double-sided, which depends on the actions or inactions of the government and other stakeholders. Therefore, the study recommended a balanced and sustained urban development planning and restructuring.

Hoang & Nguyen (2011) performed a descriptive study of the economic benefit of improved sanitation and the economic cost of unimproved sanitation in developing countries. Their result showed that the economic cost of unimproved sanitation is high, the global failure to meet the MDG target for water and sanitation will amount to US\$38 billion and sanitation accounts for 92% of this amount, and in developing countries, the spending required to ensure new coverage is US\$142 billion (using 2005 US\$ value). The result also revealed that investing in sanitation is economically and socially valuable, since every US\$1 invested in the MDG target for sanitation and universal access to sanitation in the non-OECD countries will yield global returns of US\$9.1 and US\$11.2, respectively.

METHODS

Data source

The data for this study are sourced from the Nigerian Demographic and Health Survey (DHS, 2018), the Central Bank of Nigeria (CBN, 2018) statistical bulletin, and the World Governance Indicators (WGI, 2020) (Table 2). The sample size of

the population is about 119,386 persons from different households in Nigeria. The Nigerian Demographic and Health Survey Data (DHS, 2018) is the latest released so far. The next to be released will be available by 2023, and this is mainly because it has a time interval of 5 years. This is one of the major reasons why we decided to use DHS (2018) for the analysis. The time series variables range from 1996 to 2018. They include government expenditure to public infrastructure (expenditure of social and community services – escserv), government expenditure on health, corruption perception index, and control of corruption. These variables (expenditure of social and community services (escserv), government expenditure on health, corruption perception index, and control of corruption) are used as proxy to capture the effect of economic policy. Economic policy could be fiscal or monetary policy. Fiscal policy is described by the use of taxation and government expenditure to influence the level of economic performance. It is the measure of adjustment between revenue and expenditure to ensure economic stability (Mesagan & Yusuf 2019). For the purpose of this study, fiscal policy was adopted as a measure of economic policy (government expenditure to public infrastructure (expenditure of social and community services – escserv), government expenditure on health).

Variables employed

The variables of interest include the type of toilet facility used by a household (*typetoilet*) and the household's access to safe drinking water. The constructed dichotomous variable on unsafe sanitation facilities (*unsafesanit*) takes the value of 1 if a household uses only pit latrine and 0 otherwise; that is, if a household uses only the sewer-system toilet facility. This dummy gives us insights into how sustainable the sanitation facilities of households are in terms of the number of persons who use the sewer-system toilet facility. Further, according to the World Health Organization (WHO, 2017), improved/sustainable water facilities or sources are those potentially capable of delivering safe water by nature of their design or construction or by using appropriate treatments. These include piped water, boreholes or tube wells, protected dug wells, protected springs, rainwater, bottled water, and water delivered by tankers/trucks. Thus, a sustainable/improved water facilities' variable for this study was constructed following WHO (2017). Ekeocha & Iheonu (2021) have used similar definitions. Table 1 summarizes the definition of variables used in the study.

Model specification

In this paper, we intend to investigate the impact of economic policy on sustainable water and sanitation facilities in Nigeria. To achieve these objectives, we apply the binary logistic regressions. The choice of this model is as a result of its efficiency in dealing with variables that take the form of 0 and 1. The model gives efficient and reliable estimates of the variables in the model. Furthermore, the binary logistic regression model is well known for its ability in capturing marginal effects of the relationship between the independent variables and the dependent variable in the model. Thus, let $swater_i^*$ be the latent variable for sustainable water facility in Nigeria. To determine the probability that households have access to sustainable water facility, we estimate the following logit regressions:

$$swater_i^* = \mathcal{L}(Toilet_i\beta + E_i\theta + C_i\theta + \varepsilon_i) \quad (1)$$

where ε_i is the white noise error term shown as $i = 1, 2, \dots, N$. Thus, $swater_i = 1$ if $swater_i^* > 0$, that is households have access to sustainable water facility, and $swater_i = 0$ if $swater_i^* < 0$, otherwise. $Toilet_i = (typetoilet_i, unsafesanit_i)'$ is a (2×1) vector of type of toilet facility and unsafe sanitation facility, E_i is a (2×1) vector of government expenditure on health and on social community services ($ehealth_i, escserv_i$)', and C_i is a (2×1) vector of corruption perception index and control of corruption ($corrpi_i, ccr_i$)'. β , θ , and θ are the corresponding parameters. We impose the logistic distribution function $cdf - \mathcal{L}(\cdot)$ for the nonlinear parameterization of the binary logistic model to determine the predicted probability that households have access to sustainable water facility. Then, given the compact vector $G_i = (Toilet_i, E_i, C_i)'$, the probability that households have access to sustainable water facility is given as in Equation (2).

$$Pr(swater_i = 1/G_i) = \Phi(Toilet_i\beta + E_i\theta + C_i\theta + \varepsilon_i) \quad (2)$$

Similarly, to achieve objective two, let $unsafesanit_i^*$ be the latent unsafe-sanitation variable. To determine the effect of economic policy on sanitation facilities, we estimate the logit model expressed in Equation (3).

$$Pr(unsafesanit_i = 1/B_i) = \Phi(E_i\theta + C_i\theta + \varepsilon_i) \quad (3)$$

The foregoing definitions hold, where $B_i = (E_i, C_i)'$ is a compact vector. In effect, $unsafesanit_i = 1$ if $unsafesanit_i^* > 0$, that is Nigerian households' sanitation facilities are unsafe, and $unsafesanit_i = 0$ if $unsafesanit_i^* < 0$, meaning the facilities are safe.

RESULTS

The statistics result in Table 3 represents the nature of the variables and it is described using the number of observations, mean, standard deviation, and minimum and maximum values. Unsafe sanitation had 119,386 responses with a mean value of 31.106 of unsafe sanitation facilities and a standard deviation of 14.40. Toilet type of households represented a mean value of 24.603, meaning that toilet type by households represents about 24.60% of the different types of toilets of households in the sample. It has a standard deviation of 9.58 and a maximum value of 99.

Table 4 reports the binary logistic regression results. Government expenditure on social community services has a significant and positive relationship with unsafe sanitation facilities, such that expenditure on social community services is more likely to increase the use of unsafe sanitation facilities by 0.73%. In contrast, expenditure on health is negatively related to the use of unsafe sanitation facilities in Nigeria. The more the expenditure on health, the less likely that sanitation facilities will be unsafe by 0.13%.

Furthermore, there is a negative and significant relationship between the type of toilet facility used and unsafe sanitation in Nigeria. A better type of toilet facility is associated with a reduction in unsafe sanitation in Nigeria. About 20% and 39% of

Table 3 | Descriptive analysis of the variables

Variable	Obs.	Mean	SD	Min.	Max.
Unsafe sanitation facilities	119,386	31.106	14.40	11	99
Toilet type of households	119,386	24.603	9.58	11	99
Expenditure on health	22	0.692	0.462	9	219
Expenditure on social community services	22	12.11	19.56	9	169
Control of corruption	22	-1.13	0.16	-1.34	-0.81
Corruption perception index	22	22.46	4.48	14	27

Table 4 | Binary logistic regression result

	(Logit) unsafe sanitation facilities	(Margins) unsafe sanitation facilities	(Logit) sustainable water facilities	(Margins) sustainable water facilities	Wald test p-values
Expenditure on social community services	0.1986**	0.0073**			0.0001
Expenditure on health	-0.0367**	-0.0013**			
Corruption perception index	0.2840	0.0104			
Control of corruption	-12.9620	-0.4750			
Type of toilet facility of household			-0.2010***	-0.3920***	
Unsafe sanitation facilities			-3.8144***	-0.7437***	
Constant	-26.59* (-2.42)	-26.59* (-2.42)	2.195*** (33.13)	2.195*** (33.13)	0.0000
Observations	119,386	119,386	119,386	119,386	
Wald test (p-value)	0.0001*	0.0001*	0.0001*	0.0001*	

t-statistics values are in parentheses.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table 5 | Logit model-predicted probabilities

Variable	Obs.	Mean	SD	Min.	Max.	% Classified
Unsafe sanitation facilities	119,000	0.653	0.476	0	1	87.5
Sustainable water facilities	119,000	0.544	0.498	0	1	69.98
Plogit unsafe sanitation facilities	16	0.75	0.401	0	1	
Plogit sustainable water facilities	119,000	0.544	0.096	0.352	0.874	

people were less likely to have used unsafe sanitation over the last one year due to an increase in better toilet facilities. Furthermore, the results are jointly statistically significant at a 1% level of significance, as given by the Wald test probability value of 0.0001. Table 4 also shows a negative and significant relationship between sustainable water and unsafe sanitation in Nigeria (see Table 4, column 3 and 4). This suggests that when sanitation facilities are unsafe, the likelihood that the water facilities will be sustainable will decrease by 74.4% at a 1% level of significance. The type of toilet facility used reduces the likelihood that water facilities in Nigeria are sustainable by 39.2%.

Table 5 shows the predicted probabilities of the logit model, and this reveals that about 65.3% of Nigerians have unsafe sanitation facilities as most of them use pit latrines exclusively for defecation, and 54.4% Nigerians have sustainable water facilities, given that they have access either to boreholes, protected wells and spring water, public taps, and stand pipes or to water piped into their homes. However, the logit model was able to predict that 75 percent of sanitation facilities in Nigeria are not sustainable, but 54.36% of water facilities are sustainable. Furthermore, the correctly classified percentage for bad sanitation facilities is 87.50 and that for sustainable water facilities is 69.41%, while others are mis-classified.

DISCUSSION

We looked at the impact of economic policy on the use of sanitation facilities in Nigeria by considering its effect on unsafe sanitation and sustainable water supply. We found that government expenditure on social services had a positive and significant effect on unsafe sanitation in Nigeria. This is in line with other studies that produced similar results (Ajibade *et al.* 2015). We also found that health expenditure had a negative and significant relationship with unsafe sanitation in Nigeria, implying that expenditure on health reduced unsafe sanitation in Nigeria. This lends credence to other studies that yielded similar results (Kalbessa 2018). According to the National Action Plan for the revitalization of Nigeria's WASH Sector, although the policy has made considerable progress in the water, sanitation and hygiene (WASH) sector, access to high-quality, reliable, and sustainable services still remains low (National Action Plan WASH report 2018). This is in line with the findings of this work. There are several possible reasons why health expenditure significantly reduced unsafe sanitation in Nigeria. First, money spent in improving the health condition of the people will reduce the rate at which individuals use unsafe sanitation. Second, expenditures in health will provide good health conditions for the people, thereby reducing the rate at which individuals make use of unsafe sanitation in Nigeria.

Our analysis shows that expenditure on social community services increased unsafe sanitation, suggesting that expenditures on social community services did not reduce unsafe sanitation, rather it increases it. Our findings suggest the possibility of political complexities at the federal, state, and local government levels resulting in spending very little expenditure on social communities, and, therefore, the need to stimulate strong leadership at all government levels could be a favorable starting point. However, our research did not include social expenditure on community services at various levels of government, so we could not explore this further. Furthermore, we could not investigate the role of quality governance in the study and how it impacts the provision of safe sanitation in Nigeria. Therefore, we recommend that future studies consider addressing these limitations.

CONCLUSION AND POLICY RECOMMENDATION

This paper was designed to analyze economic policy on sustainable water and sanitation facilities in Nigeria. The Binary Logistic model and logit model predicted probabilities were adopted, and the results showed that sanitation facilities are crucial in determining how sustainable water facilities in Nigeria will be, since unsafe sanitation facilities also imply poor water facilities. Expenditure on social and community services led to an increase in unsafe sanitation. Therefore, a foolproof system

of monitoring community projects should be employed by the government to check how funds are distributed for this purpose. We understand that monitoring can be highly challenging and also involves high cost, but certain steps can be taken to tackle these. First, groups involved in monitoring can be used to monitor the quality of projects and their implementation to ensure that sanitation facilities provided are of good quality and also ensure that they are made use of properly. Feedback on how to make the facilities and the environment conducive to the health of the people is important.

The financing of WASH in Nigeria stems from a mixture of domestic public resources and official development assistance (ODA) and also to a smaller extent, other official financing sources. Between 2014 and 2017, the government has spent a little under US\$500 million. In 2018, funding was reported to be a bit lower than that of 2017, with the funding value totaling US \$393, with smaller levels of the government's own funding and a little close to USD\$38.3 million from external sources, suggesting that there has not been much significant scale-up in funding this area. Therefore, there is need for the government to be consistent in providing funds meant for improvement in providing safe sanitation and water facilities in Nigeria.

Furthermore, the President of Nigeria in November 2018 declared a state of emergency in the Water, Sanitation, and Hygiene (WASH) sector, demonstrating political will at the highest level of government, and launched a national wide campaign tagged 'Clean Nigeria: Use the Toilet' to jump-start the country's journey toward becoming Open Defecation Free (ODF) by 2025. This move was stringently followed by different states to ensure that toilets all over the country are clean and fit for use by all Nigerians. This policy should be sustained in order to achieve the target of Open Defecation Free (ODF) by 2025.

Also, the Federal Government of Nigeria in 2000 enacted a water policy to meet the policy target of improved water from 40% in 2000 to 60% in 2003 and the projection of service coverage to 80% by 2007 and further to a sustained service coverage of 100% in 2011. The government has shown much commitment to meet the Sustainable Development Goals on WASH. The Sustainable Development Goals (SGD-6) is one of the goals of the PEWASH framework 2030, the national road map for the elimination of open defecation 2025, and the national action plan for WASH. The PEWASH and the national action plan were formulated in order to combat the challenges affecting the WASH Sector, with the aim of achieving 100 percent WASH coverage by 2030. It is, therefore, recommended that the government continues with this water policy and improve upon it so as to provide improved water and sanitation facilities all over Nigeria.

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CONFLICT OF INTEREST

There is no conflict of interest whatsoever among authors.

DATA AVAILABILITY STATEMENT

Data cannot be made publicly available; readers should contact the corresponding author for details.

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