Assessment of Water, Sanitation and Hygiene (Wash) Services and Practices in Public Schools in Nigeria

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Abstract

Water supply and sanitation provision has been at the core of international attention reflected in various international directives and declarations over the past four decades. The sustainability of water, sanitation, and hygiene (WASH) systems is critical for ensuring that communities have access to clean water, proper sanitation, and hygiene facilities, and for meeting the national and sustainable development goals targets. This paper assessed WASH services and practices in public schools in Federal Republic of Nigeria. The assessment covered five areas which are water supply service level 37%, sanitation service level 30%, functionality of sanitation services 73%, handwashing service 35%; and functionality and availability of handwashing services 35%. Thus, the overall score for financial sustainability WASH service provided in schools 26%. The WASH in schools performance index by zone are South-West 53%; North-Central 45%. North-East 44%; North-west 44%, South-South 42%; and

South-East 34%. From the above review, it is seen that with the exceptions of south west zone, all the other geopolitical zones have less than 50% of WASH services in schools which implies that Nigeria may not be able to meet up the sustainable development goal six (SDG-6) in water and sanitation before the year 2030. There is therefore need for the three tiers of government to brace up to meet up this challenge before it is too late.

Keywords: Assessment, Water, Sanitation, Hygiene, Practices, Services, Schools

Introduction

The environment plays a major role in maintaining a healthy life. Thus, water sanitation and hygiene (WASH) practices from an aspect of environmental public health (EPH) in disease prevention and control, especially water and sanitation related disease. According to Sridhar and Omishakin (2015), it is estimated that about 80 percent of all diseases in developing countries are related to unsafe water supply and inadequate sanitation. The federal ministry of Health affirms that there are about fifteen diseases that are related to water and sanitation among which include typhoid, dysenteries, yaws, elephantiasis, guinea worm, malaria, and cholera (Sridhar & Omishaken, 2015). Water serves as an important medium through which many illness are spread in the human population. The essential role water plays in human survival cannot be over-emphasized, especially in the sustenance of life and provision of health. Thus, it is impossible to separate issues of water and sanitation, including hygiene from life as they impact significantly on health and general wellbeing.

The importance of water, sanitation and hygiene has been recognized at the local, national and international level all over the world. It is in this regard that in 2010, the United Nations General Assembly (UNGA) recognized the right to drinking water and sanitation is a basic, human right and called on member states to intensify efforts to provide safe, clean, accessible and affordable drinking water and sanitation as a basic human right and called on member states to intensify efforts to provide safe, clean, accessible and affordable drinking water and sanitation for all (UNGA, 2010). Also, in 2015, the member states of the United Nations adopted the 2030 Agenda for sustainable development, goal 6 of which aims to "ensure availability and sustainable management of water and sanitation

for all" (United Nations, 2015). It should also be noted that water, sanitation and hygiene practice have become global issues and one of the United Nations Millennium Development Goals (MDGs) which is aimed at ensuring environmental sustainability targeted towards reducing by half the proportion of people without sustainable access to safe drinking water and basic sanitation by 2013. It is expected that if the proportion of the population using improved drinking water source and the proportion of the population using improved sanitation facility increases, there will be a reduction in disease transmission and mortality/morbidity rules (UNICEF, 2015).

Hutton and Chase (2017) opine that globally, the use of improved drinking water sources increased from 1990's 76% to 2015's 91%, and four out of five people in urban areas use piped borne water. However, unlike water supply which met its MDG target. According to Hutton and Chase (2017), data on handwashing practice globally has become more frequently collected and indicates low usage of soap and water after contact with excreta. The World Health Organization (2017) and the United Nations Children's Emergency Fund (UNICEF) (2017) state that in 2020, 489 millions people worldwide still lacked access to improved drinking water facilities – water points that can deliver safe water because of their design and construction – including 122 million people using surface water (river, dam, lake, pond, stream, canal or irrigation carnal) for drinking water. People's access to improved sanitation facilities -facilities designed to hygienically separate excreta from human contact -increased from 2000 – 2020 (Wolf et al, 2018). However, in 2020 494 million people were still practicing open defecation (WHO, UNICEF, 2021). In addition, 670 million people do not have handwashing facilities with soap and water (WHO, UNICEF, 2021).

Evidence shows that contaminated water and poor sanitation are associated with the transmission of diseases and other symptoms such as cholera, bacillary diarrhea, viral hepatitis A, typhoid, polio and acute respiratory infections, etc. (WHO, 2010). According to the World Health Organization (WHO), inadequate access to water, sanitation and Hygiene (WASH) services is responsible for nearly 2 million deaths annually, worldwide, and most of their children (WHO, 2019). The World Health Organization further stated that sub-Saharan Africa still has the largest burden of morbidity and mortality due to inadequate WASH facilities (60%

and 53% of all Dalys – Daily Adjusted Life yeas and deaths attributable to inadequate WASH facilities respectively) (WHO, 2019). The United Nations Children Education Fund (UNICEF) documented hat approximately a third of the Wod's population lacks adequate sanitation with about a quarter of that figure not privy to portable water supply, which is the cause of deaths of nearly 800 children worldwide (UNICEF, 2018). Attah et al (2023) observed that the WASH Programme was established as an international intervention body to help control disease outbreaks in communities.

In Nigeria, the responsibility of water supply is shared among the three tiers of government in the country – federal, state and local. According to Goldface-Ironkaile (2021), the federal government is in charge of water resources management; the state governments have the primary responsibility for urban water supply and the local governments together with communities are responsible for rural water supply; however, the responsibility for sanitation and hygiene is not clearly defined. Water supply service quality and const recovery are low. National policies and initiatives encourage the participation of private sector and reform of policy at the state level (USAID, 2007). Adeoti (2007) noted that the national water supply and sanitation recognizes the importance of water supply and sanitation as it is central to healthy society and national development. Jasper et al (2012) and Olukanni (2013) assert that several researchers have pointed out the WASH programme is not getting the proper attention and implementation has been abysmal. Atta et al (2023) added that the governments of this nation at all tiers are still battling with the basic provision of water and sanitation issues, and even with interventionist programmes put in place to remarry the situation, the condition does not seem to be improving as our population keeps escalating proportionate to our poverty level.

The WASH programme is not only meant at the community level but also at institutions such as hospitals, schools, churches, correctional facility, etc in different places. Thus, for the purposes of this paper, the emphasis is on public schools at eh primary and secondary levels in Nigeria to see how WASH programmes and services are carried in the thirty-six states and six geo-political zones in the country. WASH programmes and services are examined in the following six areas: water supply service level, sanitation service level,

functionality of sanitation service in school, hand washing service level, functionality in hand washing services and financial sustainability of service providers.

Study Area: Nigeria

The Federal republic of Nigeria, with an area of 923,769 kilometers (made up of 909,890 square kilometres of land area and 13,879 square kilometers of water area), is situated between 3^{1} and 14^{11} East Longitude and 4^{1} and 14^{11} North Latitude. The longest distance from East to West is about 767 kilometres, and from North to South 1,605 kilometres. The country is bordered on the West by the Republics of Benin and Niger, on the East by the Republic of Cameroon, on the North by Niger and Chad Republics and on the south by the Gulf of Guinea.

The coast of Nigeria is a belt of mangrove swamps traversed by a network of creeks and rivers the great Niger delta. Beyond these lie successive belts of tropical rain forest (that break into a more open woodland with hilly ranges) and the undulating plateau (with hills of granite and sandstone), rising from 609.6 metres on the average to 1.828. 6 metres eastwards. Midway north of the country the vegetation is grassland interspersed with trees and shrubs, which terminate in the Sahel Savannah region of the semi-arid north-east.

River Niger (Africa's third longest River) rises from the mountains to the east of Sierra Leone and flows from the first two-thirds of its 4,184 kilometers length outside Nigeria before entering the country from the north-west. It receives the River Benue which rises from the Republic of Cameroon) at Lokoja and then flows for about 547 kilometres into the Atlantic Ocean. River Niger has as its tributaries, the Sokoto, Kaduna and Anambra Rivers while River Benue receives Katsina-Ala and Gongola Rivers. This second great drainage system runs from the central plateau into Yobe River and eventually empties itself into Lake Chad. Other important river systems include Benin, Escravos, Sombreiro, Bonny, Cross River, Imo, Ogun and Osun.

Nigeria is also blessed with favourable and varied climatic conditions. The climate is equatorial and semi-equatorial in nature, characterized by high humidity and substantial rainfall. There are two seasons the wet and dry season the wet season

lasts from April to October, while the dry season lasts from November through March.

Conceptual Clarification: Water, Sanitation and Hygiene (WASH)

The concept of water, sanitation and hygiene (WASH) has been at the core of international attention reflected in various international directives and declarations by government and inter-governmental organizations all over the world over eth past four decades (Apabio, 2012). Water, sanitation and Hygiene (WASH) is used by non-governmental organization and aid agencies in developing countries of the world. According to the World Health Organizations and the United Nations Children Education Fund (WHO – UNICEFF) (2017), the purpose of providing access to WASH services include achieving public health, gains, improving human dignity in the case of sanitation, implementing the human right to water and sanitation, reducing the burden of collecting drinking water for women, reducing risk of violence against women, improving education and health outcomes at schools and health facilities, and reducing water pollution

Access to WASH services is also an important component of waters security (REACH, 2020). Thus, within the United Nations sustainable Development goal (SDG)_ 6, the universal, affordable and sustainable access to WASH is a key issue within international development and is the focus of the first two targets of SDG 6. Targets 6.1 and 6.2 aim at equitable and accessible water and sanitation for all. In 2017, it was estimated that 2.3 billion people all over the world live without basic sanitation facilities and 844 million people live without access to safe and clean drinking water (WHO, UNICEF, 2017). According to WHO and UNICEF (2006), nearly 80% of the people using water from unimproved sources are reportedly concentrated in arid regions namely sub-Saharan Africa, Eastern and Southwestern Asia.

Over the years, extensive studies have made on the WASH – attributable burden of disease and injuries and the typical diseases and conditions associated with lack of WASH include diarrhea, malnutrition and stunting, in addition to neglected tropical diseases. It has also been found out that lack of WASH poses additional health risks for women, for example, during pregnancy, or in connection what

menstrual hygiene management (WHO, 2010). Access to WASH needs to be provided at the household level but also in non0household settings like schools, healthcare facilities, workplaces (including prisons), temporary use settings, muss gatherings and for dislocated populations (Cronk et al, 2015). According to UNICEFF (2015), in schools, group handwashing facilities and behaviours are a promoting approach to improve hygiene. UNICEF (2015) observed that lack of WASH facilities at schools can prevent students (especially girls) from attending schools, thus reduces their educational achievements and future work productivity.

The concept of Wash groups together water supply (access to drinking water services), sanitation, and hygiene because the impact of deficiencies in each area overlap strongly against each other. Succinctly, WASH consists of access to drinking water services, sanitation, services and hygiene. According to the Joint Monitoring Programme (JMP) of the World Health Organization and the United Nations Children Emergency Fund (WHO/UNICEF), the challenges for providing WASH services include providing services to urban slums, failures of WASH systems in the months and years after installation (for example, leaking water distribution systems), polluted water sources and the impacts of climatic change.

WASH, Programmes and Services in Nigeria

Nigeria is a country that operates the federal system of government at three levels – the federal, state and local. In Nigeria, the responsibility of water supply is shared among the three tiers of government with the federal government being in charge of water resources management. State government being in charge of urban water supply; and the local government being responsible for rural water supply. In terms of WASH programmes and services, the responsibility for WASH services delivery rests on the state government at the sub-national level, while the federal government through the Federal Ministry of water Resources (FMWR) is responsible for national WASH policies, regulations, guidelines and strategies (Federal Government, 2022). In Nigeria, national policies and initiatives encourages the participation of private sector and reform of policy at the state level (USAID, 2015).

Akpabio (2012) and FGN (2022) have observed that Nigeria is one of the countries in sub-Saharan Africa (SSA) whose records on general access to water supply and sanitation facilities by the citizens remains very poor. According to the Nigerian tide newspaper and Premium Times Online news reporter, as around 2015, 67% of Nigeria's total population had access to at least basic water supplies; this was 82% of the urban population and 54% of the rural population. The premium Times (2018) opines that most people in Nigeria do not have access to clean water, especially in the rural areas. The global water sanitation and hygiene statistics shows that 79% of Nigerians go through the challenge of water scarcity (FGN, 2022). In 2015, about 60 million Nigerians lacked access to "at least basic water" (FGN, 2022). As for sanitation, only 33% of the total population had access to "at least basic sanitation". This was 39% of the urban population and 27% of the rural population; and approximately 122 million people still lacked access to "as least basic" sanitation (WHO/UNICEF JMP, 2012). The United Nations University Institute for Development Economics Research (2000) reported that in the urban areas, access to stand pipes substituted to a large extent to piped water access; and adequate sanitation is typically in the form of septic tanks, as there is no control sewage system.

The 2021 WASH National outcome Routine Mapping (WASHNORM) estimates the current levels of access to at least basic services nationally at 67% for water, supply services. 46% for sanitation services and 17% for hygiene services. While 77% of publicly used water facilities are functional at the time of the survey (a cumulative increase to 8% since 2018), a deeper look at the critical element of the dependability of these water facilities are constructed according to standard designs and configuration and only 11% have adequate structures for operation and maintenance (FGN, 2022). It should be noted that the statistics on access to water and sanitation are conflicting due to divergent definitions, indicators and methodologies applied by different agencies. Across the country, most water facilities do not remain functional for a long as they soon breakdown and in some cases fall into disrepair. Consequently, household, schools and healthcare facilities access to hygiene, sanitation and water supply services is negatively impacted.

Global Perspectives of WASH Programmes in Schools

Schools are one of the non-household settings or WASH. The others are health care facilities, workplaces (including Prison), temporary use settings, mass gatherers, and dislocated populations (Cronk et al, 2015). According to Kooldeval and Van de Walle (2010) and UNICEF (2012), more than half of all primary schools in the developing countries with available data do not have adequate water facilities and nearly two third lack adequate sanitation. Arebelbis et al (2013) observed that even were facilities exist, there are often in poor condition; and children are able to more fully participate in school when there is improved access to water. It has also been observed that lack of Wash facilities can prevent students from attending school, particularly female students. UNESCO (2014) observed that strong cultural taboos around menstruation, which are present in many societies, coupled with a lack of menstrual hygiene management services in schools, results in girls staying away from school during menstruation.

In the opinions of Dairenhauer, et al (2016), the reasons for missing or poorly maintained water and sanitation facilities at schools in developing countries include lacking inter sectoral collaboration, lacking cooperation between schools, communities and different levels of government; as well as a lack in leadership and accountability. WASH in schools, is sometimes called SWASH, which significantly reduces hygiene relate diseases, increases students' attendance and contributes to dignity and gender equality. WASH in schools contributes to healthy, safe and secure school environments. It can also lead children becoming agents of change for improving water, sanitation and hygiene practices in their families and communities. According to Agol et al (2018), data from over 10,000 schools in Zambia was anlayzed in 2017, and confirmed that improved sanitation provision in schools was correlated with high female-to-male enrolments ratios, and reduced repetitions and drop-out ratios, especially for girls.

There are several methods to improve the situation of WASH infrastructure in schools as observed by Dayenhauer et al (2018), among which include broadening the focus of the education sector, establishing a systematic quality assurance system, distributing and using funds wisely. Other practical recommendations include have a clear and systematic mobilisation strategy, support the education sector to strengthen intersectoral partnerships, establish a constant monitoring

system which is located within the education sector, educate the educators and partner with the school management (Duren-hauer, 2016). According to Tiberghein (2016), the support provided by development agencies to the government at national, state and district levels is helpful to gradually create what is commonly referred to as enabling environment. For schools. Other ways to enhance WASH in schools is to engage some stakeholders such as community members, community-based organizations, education official and local authorities (Tiberghien, 2016). Conclusively, supervised daily group handwashing in schools is an effective strategy for building good hygiene habits, with the potentials to lead to positive health and education outcomes for children.

WASH Programmes and Services in Schools in Nigeria

The Federal Government of Nigeria (FGN) through the sector-wide sustainability Checks (SWSC) undertook assessment of WASH in schools in order to ascertain the level of WASH facilities in schools where they are provided. It is the sum of the sustainability index for the components of water supply, sanitation, and hygiene services and equity of access in schools across the country. The sustainability index for WASH in schools is a composite of six factors made up of different parameters which are water supply level, sanitation service level, functionality of sanitation services, handwashing service, functionality and availability of handwashing services and financial sustainability WASH service providers in schools.

The overall sustainability index for WASH services in schools in the country us 465 (FGN, 2022). according to FGN (2922), at regional level, the south-west has the highest index of 53%, followed by North-central and North East at 45% and 44% respectively, while the south East has the lowest index of 34%. FGN (2022) stated further that data from states shows that the FCT has the highest index of 67%, followed by Lagos and Bauchi at 66% and 54% respectively. The states with the least index are Kwara 25%, Imo 25% and Enugu 265. The sustainability index for wash that is a composite of six factors scores for schools in the country are as follows: water supply level 37%, sanitation service level 30%, functionality of sanitation service 73%, handwashing service 35%, functionality and availability of

hand washing services 35% and financial sustainability WASH service providers in schools 26%. The detail breakdown is as follows:

(1) **Water Supply Service Level:** This factor measures the level of access to water supply services in school. It includes the parameter of access to at least a basic water supply service, and of students per functioning basic water point. From the survey data, the factor score for water supply service level in schools is 37% at the national level. Across Nigeria, the score was found to be highest in the North-west and south-west at 43% while the lowest score was in the south-east at 22%. At the state level, the Federal Capital Territory (FCT), Kaduna, Lagos and Gombe scored the highest with 74%, 57%, 57%, and 55% respectively. Kaduna, Borno, Benue, Kano, Okiti, Anambra and Sokoto had the lowest scores with 47%, 46%, 44%, 43%, 42% and 41% respectively.

(2) **Sanitation Service Level:** The sanitation service level combines the parameters of access to at least a basic sanitation faculty for the safe disposal of human waste (feces and urine), ability to maintain hygienic environment through garbage collection and safe disposal around the school. The national sustainability score for sanitation service level is 30%. The score for sanitation service level was highest for schools in the south-west region at 53% and lowest for schools in the south-east at 19%. A eth state level, the score was high as 70% for Lagos and 53% for the FOT, while Bayelsa at 2%, Kogi at 4%, Sokoto at 6%, Imo at 7% and Gombe at 9% have the lowest score among the states.

(3) **Functionality of Sanitation Service in Schools**

Beyond access to sanitation services, the sustainability index also measured the functionality of available sanitation facilities in schools at the time of visit of survey. This factor included parameters around number of available toilet cubicles that are functional and in use, number of single-sex and mixed sex usable sanitation facilities and number urinals available and in use at the time of survey. The National sustainability score for sanitation service in schools is 73%. Further analysis shows that the states with highest index of function ability of sanitation services in schools are Bauchi

at 100%, Kaduna 96%, Abia 95%, Lagos 90%, Benue 88% and Borno 88%. This means that in those states, where sanitation facilities are available in schools, theory are functional and are in useable conditions.

(4) Hand Washing Service Level (including Access to Soap)
This factor of sustainability check for WASH in schools measures the parameter of availability of basic hand hygiene service with water and sop based on the proportion of schools with a hand washing station at the time of survey. It also indicates the ratio of students per hand washing station available in the schools. The national sustainability score for handwashing service level is 35%. The highest service level was noticed in the south-west at 51%. At the state level, the FCT has the highest average at 72% while the lowest is Zamfara at 6%.

(5) Functionality of Hand Washing Services: The functionality score measures the proportion of functional hand uplifting stations in the schools at the time of visit. The national average for functional hand washing stations in schools is estimated at 84% across schools in Nigeria, meaning that 84% of hand washing facilities in schools where they are available are functional. The south-West has highest hand washing functionality level of 89% followed by the North-central at 87%, and the south-south at 87%. At the state level, Kwara, Ebonyi and Jigawa states had the lowest score at 48%, 46% and 20% respectively.

(6) Financial Sustainability Of Service Providers: The factors of sustainability of WASH services of schools include financial provision for the operation and maintenance of WASH facilities provided in schools. Financial sustainability ensures continuity in the delivery of WASH products and services. This means that WASH services in schools are properly financed. This factor measures the proportion of schools with annual budget allocated for WASH services or school based management committees effectively and regularly collection and properly managing fees and contributions for WASH services. Results of the sustainability check analysis indicates a national score of 26% for financial sustainability of service provision for WASH in schools. At the zonal level, the south-east

had the lowest potential for financial sustainability at 9% while the south-west was at 17%.

Conclusion

Water, sanitation and hygiene is a critical social need of man in any society. Therefore, it is important to note that the sustainability of WASH facilities and services is a complex and dynamic system which can be influenced by various external factors such as policies, governance, and funding. The state and federal governments in Nigeria who are the custodian or public secondary schools in Nigeria, have made, are asking and will continue to in our secondary schools system especially in provision and upgrading of school infrastructure. The intent of such improvement is to make the schools better, however, it is not known clearly how modernizing and improving the learning environment as regards WASH facilities, practices and services. There is no clear budgetary provisions either by the state or federal governments for WASH programmes and services in public secondary schools. There is absolute need therefore for the state and federal governments to rise up to the challenges facing the public secondary schools in the nation. The governments should also come up with approaches and strategies for planning and implementation of WASH programmes and services in public secondary schools in the nation. In order to meet up global standard and enhance sustainable development of the school system to meet up the sustenance development goal in the sub-sector. Thus with concated effort and commitment by the government, this will be achieved with ease.

Recommendations

Based on this assessment, it is necessary to make certain recommendations to make our schools system better.

(1) Both the state and federal governments should begin to make necessary budgetary provisions annually for WASH programmes and services in secondary schools in the country.

(2) There is need for external parties such as the African Development Bank the European union, the world Bank, UNICEF, and international partners like the United States Agency for International Development (USAID), Water Aid, and Japan International Cooperation agency (JICA) should come with WASH services and progrmmes that will be centre on schools to improve the quality of WASH in the school setting.

(3) The following ministries – Education, Environment and Health at the state and federal levels should cooperate and collaborate on how to establish WASH facilities, programmes and services in public schools and also set up a services in public schools and also set up a monitoring team to regulate its activities in schools.

(4) The local government councils in the state should be encouraged to be involved in WASH programmes and services in the secondary schools in the rural areas for effective coverage of the scheme.

(5) The state and Federal Ministry of Education should endeavour to include WASH programmes and services in the school curriculum in order to divine home WASH in the lives of the students.

(6) The schools themselves should endeavour to establish WASH clubs in their schools so as to inculcate sanitation, hand washing and water supply services in schools.

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