

Where is The Water to Wash My Hands? Covid-19 and Water Availability in Nigeria

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Abstract

Water availability plays an essential role in the protection of human health during all infectious diseases outburst including the current Covid-19 outbreak. One of the major preventive strategies for Covid-19 is the regular washing of hands at all times to prevent the risk of infection and transmission of the virus. This raises the question of the availability of water in Nigeria as a catalyst to flatten the curve of the spread of Corona-virus in the country as statistics on water availability show only 60% of the population have access to safe drinking water and less than 50% in rural areas have access to potable water. This paper analyses water availability in Nigeria as an elixir to the spread of the virus by examining the adequacy of various interventions of law aimed at ensuring the provision of potable water for all and sundry particularly now that access to clean water is a critical requirement for healthy living in Nigeria. The paper submits that till date, water availability in Nigeria is still at a peripheral level. As a result, there's urgent need for an all-encompassing national water law that would ensure its availability without compromising the requirements of the environment and future generations.

Keywords *Water Availability, Environment, Covid-19, legal Framework, Nigeria*

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Introduction

Plagues and pandemics are disruptive activities which are not strange to the human race. Right from pre-historic periods, records have shown that at different points in history, humans have had to contend with diseases resulting from man's carelessness, curiosity, environmental revolt among other causative factors.² When such pandemics occur, they not only leave traces of woe behind but also redirect the trajectory of man's interaction either with fellow men or the interaction of man with his environment.³ While pandemics always come with negative tales, they also call for a critical appraisal of laws, societal values and practices that often leads to scientific and technological innovations which in turn leads to the reorganisation of the human society.

The Covid-19 pandemic is the most recent in the history of pandemics and is no exception in the way it is reshaping the world. This new strain of the corona virus disease commonly called Covid-19⁴ is widely regarded as the most crucial and challenging both to the environment and public health. Its impact has transcended records set by earlier pandemics in modern history.⁵ One significant feature of this virus is the fact that till date, there is no proven drug or vaccine known to be effective against the virus.⁶ To slow the spread of the virus, two major approaches generally adopted and backed by the recommendations of the World Health Organization (WHO) are social distancing and the constant washing of hands with soap to protect individuals and reduce the rate of the spread of the infection.⁷

² Carlton, E.J., Eisenberg, J.N.S., Goldstick, J., Cevallos, W., Trostle, J. and Levy, K. 2014. Heavy Rainfall Events and Diarrhea Incidence: The Role of Social and Environmental Factors. *American Journal of Epidemiology* 179(3): 344-52

³ Walsh, B. 2020. *The History of Pandemics*. Available online at <https://www.bbc.com/future/articles/20200325-covid-19-the-history-of-pandemics>. Assessed 26th May 2021.

⁴ Munster, V.J., Koopmans, M., Doremalen, N.V., Riel, D.V. and Wit, E.D. 2020. A Novel Coronavirus Emerging in China- Key Questions for Impact Assessment. *New England Journal of Medicine*. DOI: 10.1056/nejmp2000929

⁵ Azamfirei, R. 2020. The 2019 Novel Coronavirus: A Crown Jewel of Pandemics? *The Journal of Critical Care Medicine* 6(1): 3-4. DOI: 10.2478/jccm-2020-0013. Available Online at www.jccm.ro. Assessed May 2, 2021.

⁶ Ibid

⁷ World Health Organization (WHO). 2020. Information about Covid-19. Available Online at <https://www.who.int/emergencies/diseases/nove/-coronavirus-2019/questions-and-answers-hub/q-a-detail/q-a-coronaviruses/> Assessed 26th May 2021

Hand washing as an intervention strategy highlights the importance of water as a major preventive strategy in reducing the spread of the virus. This practice is only effective where water is both accessible and available for use both in individual homes as well as in public places. The privilege to turn on taps and access running water for drinking and washing of hands at these critical times, is a luxury accessible and enjoyed by only a few in Nigeria. With an estimated population of over two hundred million people, only about 71% have access to clean water at home.⁸ An estimated 55 million Nigerians, most of whom are rural dwellers, do not have access to clean water at home⁹ making hand-washing a mirage in most places where there is scarcity of running water. The increased need to engage in regular hand-washing would ordinarily increase water usage and put increased pressure on available water sources. This would in turn lead to increased pollution of these water sources; hence the need for effective water management.

As the pandemic continues to spread across the country, there would be an increased demand for domestic water and water for healthcare. This paper seeks to explore the use of law as a tool for examining the intervention strategy of hand-washing and the implication of this intervention on increased demand for water as a result of domestic and health care purposes in Nigeria. The paper will examine the legal framework on water management with a view to assessing how fit for purpose they are in addressing implications of the upsurge in water usage in the wake of the current pandemic.

To achieve this, the paper will review the existing legal and institutional frame work on water availability with a view to highlighting their effectiveness in coping with increased water usage. Relevant literature on water availability globally with specific reference to Nigeria is examined to establish the role of water in preventing and suppressing pandemics particularly Covid-19. This paper posit that to ameliorate the problem of water availability which has often been a back burner issue but has been brought to limelight by Covid-19, there is the need for the government to design a new policy direction on the availability of water and hasten the enactment of a legislative framework on water use and sustainability in

⁸ Raimi, M.O., Odubo, T.V., Omidiji, A.O., Oluwaseun, E.O. and Ochayi, E.O. 2018. The Sources Of Water Supply, Sanitation Facilities and Hygiene Practices in Oil Producing Communities in Central Senatorial District of Bayelsa State, Nigeria. *Moj Public Health* 7(6):337-345.

⁹ Ibid

Nigeria. The paper concludes by recommending amongst others the need for an accelerated enactment of this law to create an enabling environment for the development of a new structure for the management of the water resources with a view to making water more available to Nigerians even in the most remote areas and develop effective pollution prevention strategies.

A Global View on Water Availability

The sustainable welfare of the human race as well as all living things in the environment depends on the safe and wise use of available water. The combination of safe drinking water and hygienic sanitation facilities is a precondition for health and success in the fight against poverty, hunger, child mortality and gender inequality. It is also central to the human rights and personal dignity of every woman, man and child on earth.¹⁰ Over one billion persons lack access to basic water supply, while several billions do not have access to adequate sanitation, which is the primary cause of water contamination and diseases linked to water.¹¹

In line with the above, the water resources available for the use of mankind are broadly categorized along two major lines¹². Fresh water sources which consists of rivers, streams, lakes, wetland and underground water reservoirs which are the main source of safe drinking water for human population as well as for agricultural activities.¹³ Marine water sources on the other hand are of vital importance for countries with seaward boundaries and provide the natural habitat for exploitable fishing resources.¹⁴ Marine water sources include seas, lagoons and oceans. In nearly all countries of the world, water is required for every major aspect of development: clean water for drinking, and thus health; irrigation for agricultural production; for hydropower generation and cooling water for thermal and nuclear power plants; for

¹⁰ Gbadamosi, O. A. (2011) Progressive Realization of the Rights to Water and adequate Sanitation. *University of Botswana Law Journal* 12; 53 – 72

¹¹ WHO/UNICEF. Joint Monitoring Program for Water Supply, Sanitation and Hygiene (JMP)- Progress on household drinking water, sanitation and hygiene 2000-2020. Available at <https://www.unwater.org/publications/who-unicef-joint-monitoring-program-for-water-supply-sanitation-and-hygiene-jmp-progress-on-household-drinking-water-sanitation-and-hygiene-2000-2020/> Assessed June 10 2020.

¹² Pimentel, D., Berger, B., Filiberto, D., Newton, M., Wolfe, B., Karabinakis, E., Clark, S., Poon, E., Abbet, E., and Nandagopal, S. 2004. Water Resources: Agricultural and Environmental Issues. *Biosciences* 54(10): 909-917

¹³ Ibid

¹⁴ Ibid

transportation of people and goods through inland waterways; for maintenance of aquatic habitats; and for recreation.¹⁵

Over the last two decades, the global use of water has continued to increase and this is attributed to several factors such as phenomenal increase in population, rising agricultural demand, urbanization and associated water stress, as well as frequent droughts in the arid and semi-arid regions of the world amongst others.¹⁶ The false notion that water is plentiful¹⁷ and will always be available led to the need to develop a global framework for the management and utilization of global water resources. The Sustainable Development Goal 6 which is to “Ensure available and sustainable management of water and sanitation for all”¹⁸ is hinged on the fact that water is the foundation of life and livelihood and is key to sustainable development and that the availability of water is crucial for the achievements of many of the other 17 sustainable development goals. Water availability has therefore become a pressing societal and geopolitical issue all over the world and in some regions, issue of critical national concern.¹⁹

Water Availability and Use in Nigeria

In Nigeria, as in many other countries of the world, water is generally regarded more or less as a nature-given resource. The country is considered to be abundantly blessed with water resources. The Hydrology of Nigeria is shown in Figure 1.²⁰

¹⁵ Gliek, P.H. 2003. Water Use. *Annual Review of Environment and Resources* 28: 275-314

¹⁶ Sharma, N.P. and Damhaup, T. 1996 *African Water Resources: Challenges and Opportunities for Sustainable Development*, (Technical Paper No. 331, Africa Technical Department Series). The World Bank, Washington D.C

¹⁷ Cosgrove, W.J., and Loucks, D.P. 2015. Water Management: Current and Future Challenges and Research Directions. *Water Resources Research* 51(6). <https://doi.org/10.1002/2014WR016869>

¹⁸ Guppy, L., Mehta, P., and Qadir, M. 2019 Sustainable Development Goal 6: Two Gaps in the Race for Indicators. *Sustainability Science* 14(2):501-513

¹⁹ Ibid

²⁰ Ayoade, J.O. 1970. The Seasonal Incidence of Rainfall. *Weather* 25 :414-418

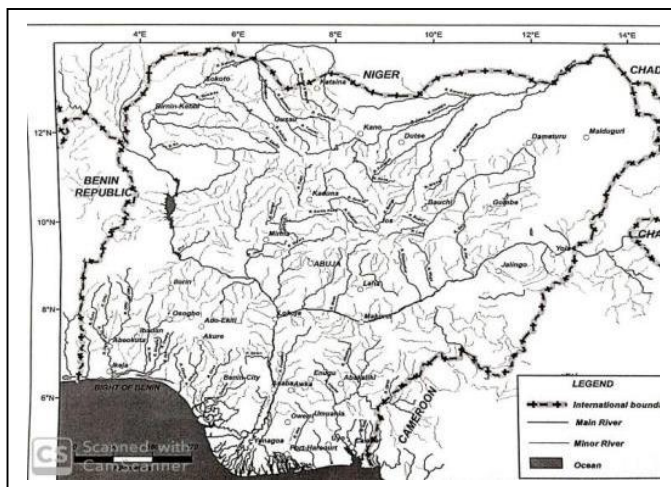


Figure1. Hydrology of Nigeria. Source. - Ayode 1970.

The Nigerian freshwater environment consists of a number of rivers and their flood plains, streams, lakes and wetlands, with the rivers and streams relatively evenly distributed all over the country.²¹ Rainfall constitutes a significant source of water in Nigeria and from the figure above, it can be deduced that the hydrology of Nigeria is dominated by two great rivers systems, the Niger-Benue and the Chad systems.²² With the exception of rivers that empty directly into the Atlantic ocean (Cross River, Ogun , Osun, Imo, Qua Iboe and a few others), all other waters in Nigeria find their way directly into the Chad Basin or down the lower Niger to the sea.²³ The two river systems (Niger-Benue and Chad) are separated by a primary water shed extending north-east and northwest from the Bauchi Plateau which is the main source of their principal tributaries. Rivers Niger and Benue are the largest rivers in Nigeria and these two rivers divide Nigeria in the shape of letter “Y” thus dividing the country into three parts. These water bodies support a multiplicity of economic activities, including fishing, transportation and recreation. Most importantly, all these freshwater bodies are the source of drinking water for a large proportion of the population in areas where there are no public water supply facilities. The River Niger is also the major source of hydroelectricity.

²¹ Ibid

²² Ayode, J.O. 1975. Water Resources and their development in Nigeria *Hydrological Sciences Bulletin* Vol XX 4 12/1975

²³ Ibid

Despite the large volume of rainfall, streams and lakes, Akpabio's study explains that there is scarcity of fresh or wholesome water for human consumption in the country leaving Nigeria as one of the countries still relatively far away from attaining the goal of universal access to water.²⁴ Furthermore, according to the World Bank²⁵, water production facilities in Nigeria were "rarely operated to capacity due to broken down equipment, or lack of power or fuel for pumping."²⁶ Due to inaccessibility to safe water supply, it is common practise for a majority of the population in urban and rural areas to search endlessly for water. Women and children bear the brunt of this burden as they have to spend several productive and considerable hours seeking for water by walking far distances from their homes. Perhaps the most affected are the majority of the rural communities in Nigeria where improved water supply systems such as piped water networks or boreholes do not exist. In situations where they do exist, they are either malfunctioning or completely broken down and this forces a lot of households to rely on alternative sources, portable or not, for domestic purposes.²⁷ This pathetic situation is further compounded by pollution of water bodies leading to water supply shortages particularly in urban centers. Publicly operated water supply sources have not been able to cope with increasing demand as these sources yield little or no water during the dry season and are prone to frequent breakdown leading to water crisis and shortages. These water supply sources include shallow wells, rivers, springs, ephemeral streams and rainwater.

The National Health Policy²⁸ reports that Sixty-one percent (61%) of households in Nigeria have access to an improved source of drinking water. Improved sources according to the report include: piped water within a dwelling place; public water tap or borehole; a protected well; spring water; bottled water; and rainwater. It should be noted however, that most of these sources are individually funded. Besides, access to an improved source of

²⁴ Akpabio, E.M. 2012. Water Supply and Sanitation Services Sector in Nigeria: The Policy Trend and Practice Constraint. *Zef Working Paper Series No 96*. University of Bonn, Center for Development Research (ZEF), Bonn. Available online at <http://hdi.handle.net/10419/88393>

²⁵ World Bank. 2017. *A Wake up Call: Nigeria Water Supply, Sanitation and Hygiene Poverty Diagnostic*. Wash Poverty Diagnostic. World Bank, Washington DC.

²⁶ Ibid

²⁷ Federal Office of Statistics. 2002. Multiple Indicator Cluster Survey 1999) Nigeria. Available at <https://www.nigerianstat.gov.ng>. Assessed 28th May 2021

²⁸ National Health Policy. 2016. Promoting the Health of Nigerians to Accelerate Socio - Economic Development. Available Online at <https://naca.gov.ng/wp-content/uploads/2019/10/National-Health-Policy-Final-Copy.pdf> Assessed 26th May 2021

water does not necessarily imply that it is safe to drink from that source.²⁹ The most common source of drinking water is a tube well or a borehole (37%) dug and funded by individuals. A higher proportion of urban households (76%) have access to an improved source of drinking water, compared to rural households (49%). These figures suggest that Nigeria did not meet its MDG target of at least 75% of the population having access to improved drinking water by 2015. These facts coupled with the realization that access to clean water is now a critical requirement for healthy living in Nigeria in the wake of the outbreak of the coronavirus and its preventive strategies indicates a critical need for focused attention on the provision of potable water to all and sundry in Nigeria.

In a more recent survey by The Water, Sanitation, Hygiene National Outcome Routine Mapping Report of 2019³⁰ conducted by the Federal Ministry of Water Resources, up to 171 million Nigerians are off the SDG target for access to safely managed drinking water supply services with only 14% of the population having access to safely managed drinking water supply services. Safely managed drinking water supply services increases from the North to the South, with the North East having the lowest access at 2% and the South West having the highest at 31%. Access for the rural population is at 7%, four times lower than access levels for the urban population at 29% with notable differences between the richest and poorest households. The survey found that just 18% of households pay some form of tariff to get water from their communal water sources, while only 31% of the population have access to improved water supply within the premises. The average time to fetch water is 19mins for households whose water points are not located within premises and up to half (49%) of the households are not satisfied with the level of the water supply services mainly due to the location and time spent to fetch.

With reference to water supply and availability in Nigeria, there is a lack of clearly defined water supply and sanitation policy direction. This can be attributed to weak institutional and regulatory framework for administration

²⁹ Ishaku, H.T., Majid, M.R., Ajayi, A.P., and Haruna, A. 2011. Water Supply Dilemma in Nigerian Rural Areas. Looking Towards the Sky for Answers. *Journal of Water Resource and Protection* 3: 598-606 doi:10.4236/jwarp.2011.38069

³⁰ Federal Ministry of Water Resources (FMWR), Government of Nigeria, National Bureau of Statistics (NBS) and UNICEF. 2020. Water, Sanitation and Hygiene: National Outcome Routine Mapping (WASH NORM) 2019: A Report of Findings. FCT Abuja. Nigeria

and service delivery with limited mandate for Local Government Environmental and Sanitation Units or Departments. There is also poor maintenance culture for existing facilities (both Urban and rural). High maintenance and operating costs and inadequate manpower all culminate in weak coordination. Inadequate funding/poor revenue collection coupled with (weak) investment and limited (absence of) private sector participation are a part of the myriad of problems of water supply in Nigeria.

Water Availability as a key factor for Covid-19 Suppression and Prevention
Measures to suppress the Covid-19 pandemic, including hand-washing, self-isolation and lockdown protocols are based on the assumption that societies, communities and households have sustainable access to acceptable amounts of adequate quality water. As a simple tool to promote public health, handwashing with clean water is one of the most effective ways to prevent the transmission of not just the corona virus but also other diseases such as diarrhea, cholera and typhoid. Therefore, millions of people are heeding the advice of health experts to wash their hands. However, in a scenario where 3 billion people around the globe do not have handwashing facility with water and soap at home, this small action to prevent infection remains out of reach.³¹

Ensuring water availability is an essential need, particularly in the context of the non-pharmaceutical intervention of regular handwashing as a preventive strategy to slow the spread of the virus. A sizeable number of people in Nigeria are likely to be the most affected by this pandemic if there is no improved means of access to water sanitation and hygiene (WASH) thus highlighting the importance of access to water as a preventive measure during the pandemic. People living in informal settlements with limited sources of water, the old and aged persons within the low income bracket could become particularly vulnerable as they have to rely on communal water points and toilets, private vendors and water tankers. High water costs and limited access could prohibit generous use of water for hand washing, whilst needing to leave home to access communal facilities and queuing for access

³¹ World Health Organization (WHO) & United Nations Children's Fund (UNICEF). 2019. *WASH in Health Care Facilities: Global Baseline Report 2019*. Geneva: World Health Organization and the United Nations Children's Fund (UNICEF). https://www.who.int/water_sanitation_health/publications/wash-in-health-care-facilities-global Report/en/. Assessed 27th May 2021.

in close proximity to others makes self-isolation and social distancing difficult to implement.³²

The provision of water through storage, supply and treatment solutions and resilient water management would create an enabling environment to encourage hand hygiene and cleaning thus effectively aiding the prevention and control of Covid-19. Investing in WASH not only increases the protection of communities against the spread Covid-19, but also prevents the spread of other infectious diseases.³³

Legal and Institutional Framework on Water Availability in Nigeria

Water, as a basic necessity for human survival is recognized by government in Nigeria. Consequently, government, over the years, and at different levels have designed several legislative interventions and policies to ensure its availability for all. These interventions have been hinged on the need for a sensible and comprehensive development of the country's water resources to provide safe drinking water for the populace in both urban and rural areas. Attempts have been made to make water available for agricultural development through irrigation schemes, and the generation of electricity along the country's main watersheds.

Historically, Pre-colonial Native communities in Nigeria had customary laws relating to water rights.³⁴ In general, there are no customary restrictions to access water from large sources. However, to the extent water resources are found on land, access to such resources would be affected to a large degree by rules governing possession of land. With respect to smaller bodies of water, particularly in the more arid areas, non-family members would need permission to access resources owned by family groups. Where the water is to be used by livestock, similar permission is usually required prior to watering by non-family members in areas where access to the relevant resources are controlled a family or other community groups.³⁵

³² Joshi, D. & Nicol, A. (2020). COVID-19 Is a Deadly Reminder That Inclusive Water Supply and Sanitation Matters For All Of Us. *Integrated Water Resources Management Institute, Blog, March 20, 2020*. <https://www.iwmi.cgiar.org/2020/03/covid-19-is-a-deadly-reminder-that-inclusive-watersupply-and-sanitation-matters-for-all-of-us/>

³³ Ibid

³⁴ Ramazzotti, M. 2008. *Customary Water Rights and Cotemporary Water Legislation*. FAO Legal Papers Online #76. Available online www.fao.org/legal/prs-ol Assessed 28th May 2021

³⁵ Ibid

These rules were known to all and observed by all and sundry. They were handed down orally from generation to generation to preserve the sanctity of the environment. Water was considered as a common resource, subject to community control and incapable of being privately owned. Therefore, laws regarding the use, protection and preservation of water sources were enforced by elders or traditional rulers as the case may be. Colonial Nigeria saw to the enactment of the Water Works Act, 1915, the Minerals Act 1917 and The Public Health Act of 1917. All these laws were made by the colonial masters to prevent the introduction of injurious substances into the various sources of water supply for human and animal consumption. It is worthy of note that while these laws in their own capacity criminalized the pollution of water, none were targeted specifically at improving the supply or availability of water in Nigeria. The Water Works Act for example, was passed specifically to keep water from being polluted. The Act expressly prohibited the pollution of water in Nigeria by noxious or harmful matters. The Minerals Act in its own stead vested the Head of State of Nigeria with power to make regulations for the prevention of pollution of any watercourse while The Public Health Act of 1917 prohibited the fouling of water and decimation of the atmosphere.

Following the independence from British rule in 1960 and till date, several legal frameworks have been put in place that form the core of water laws and the basis of water law administration in Nigeria. It is however important to note that most of these laws are pollution prevention laws and are not directly related to water supply or its availability in Nigeria. As regards water supply and availability in Nigeria, the relevant laws with direct bearing on water supply are, The River Basin Authority Act of 1976, The Water Resources Act of 1993, the National Water Resources Institute Act, and The Constitution of the Federal Republic of Nigeria 1999 as well as various states Edicts on water.

The River Basin Development Authorities (RBDAs) came into existence following the promulgation of Decree 25 of 1976. These Authorities were charged with the responsibility of comprehensive water resources (surface and ground water) development of Nigeria for multipurpose uses. The RBDAs were created as a response by the federal government to intervene

in water provision as a result of the drought of the early seventies.³⁶ The current enabling law is the River Basin Development Authorities Act³⁷. The Act spells out the functions and objectives for these Authorities and it can be inferred from their existence nationwide that they are the main Federal Government channel for water management in Nigeria. Section 4(1) (a)-(d) of the RBDA Act vests the Authorities with the legal powers to undertake comprehensive development of both surface and underground water, to construct and maintain dams' irrigation and drainage system, to supply water to all users, and to construct and maintain infrastructural services including roads and bridges across project sites. As comprehensive as this law is in vesting powers on the RBDAs, one major pitfall is in the area of operation of the Authorities. The operational domains of all the Authorities are along political boundaries and not hydrological boundaries.³⁸ Each RBDAs have independently and without coordination been exploiting basin water for the development of irrigation agriculture.³⁹ The clear lack of coordination between the various RBDAs, the single minded pursuit of irrigation agriculture mandate has resulted in an unsustainable approach to water use and supply through lack of an integrated approach to water resources management. This continued focus on water for irrigation clearly goes contrary to the aim of setting up the Authorities as their functions also include the supply of water for domestic and industrial use. It is therefore suggested that there is a need for restructuring and re-ordering of priorities of the Authorities particularly now that there is increased pressure on water for domestic use.

The National Water Research Institute Act⁴⁰ created the National Water Research Institute saddled with the responsibility of performing engineering research function related to such major water resources projects as may be required for flood control, river regulation, reclamation, drainage, irrigation, domestic and industrial water supply, sewage and sewage treatment. The Institute is further charged with the performance of other functions related to planning of water resources management and river basin development.

³⁶ Adewumi, A.A. 2010. The Regulation of Water Resources in Nigeria. Law and Policy. *Petroleum, Natural Resources and Environment Law Journal* 2(1): 23-42

³⁷ River Basins Authority Act Cap L5 Laws of Federation of Nigeria 2004

³⁸ Akindele, S.T., and Adebo, A. 2004. The Political Economy of River Basin and Rural Development Authority in Nigeria: A Retrospective Authority Case Study of Owena -River and Rural Development Authority (ORBRDA). *Journal of Human Ecology* 16(1): 55-62

³⁹ Ibid

⁴⁰ National Water Research Institute Act Cap N 83 Laws of the Federation 2004

Although the Institute has a specific legal mandate to promote the establishment of a uniform national data collection system relating to surface and subsurface water resources, it is yet to fulfill this mandate owing to a variety of factors including paucity of funds, shortage of skilled manpower, and inadequate equipment among others. One of the major problems of water supply is the lack of adequate data required for proper planning which is one of the major responsibilities of the Institute.

The Water Resources Act, 1993⁴¹ and the Constitution of the Federal Republic of Nigeria 1999⁴² vests ownership of all water courses affecting more than one state of the federation, as well as all underground water throughout the federation in the federal government of Nigeria. Section 2 of the Water Resources Act provides that any person may take water without charge for his domestic purpose or for watering his livestock, such water may be used water for the purpose of fishing or for navigation to the extent that such use is not inconsistent with another law for the time being in force. The Constitution has water supply on the concurrent legislative list, thus making water supply management a function of government at all levels, Federal, State and Local Government. Having the issue of water supply on the concurrent legislative list presents the challenge of role assignment and coordination.

Although the three levels of government, Federal, State and Local, share the responsibility for water resources management, there is a lack of inter-governmental coordination with each segment seemingly pursuing its own independent water agenda usually along political lines. At the State level, State Governments have established statutory bodies known as State Water Authorities with different names charged with the responsibility of providing water for urban and rural centers in each state.⁴³ These authorities are saddled with the general responsibility for water supply development and management within their respective states. The Oyo State Water Corporation is the Authority saddled with water supply development in Oyo State while the Lagos State Water Authority is charged with water supply within Lagos Metropolis.

⁴¹ Now Water Resources Act Cap.W2 LFN 2004

⁴² Section 20 of the Constitution of the Federal Republic of Nigeria 1999 provides that “The State shall protect and improve the environment and safeguard the water, air and land, forest and wildlife of Nigeria.

⁴³ Ramazzotti. 2008. Op cit.

In terms of policy directions on water supply, two policies clearly stand out. The National Water Supply and Sanitation Policy (NWSSP) introduced in the year 2000 to provide guidelines on urban and rural water supply and define the institutional and funding responsibilities of the Federal, State and local Governments. The projected target of the policy was that by 2007, private operators will be responsible for 35% of urban water supply, 40% of small towns' water supply and 25% of rural water supply. This target was clearly not accomplished going by the current state of water supply in Nigeria. The 2004 National Water Policy was designed to change the approach of previous government programs in the water sector which had been centered on water resources development, while proper management and conservation of the resource was not given adequate attention. The policy tried to fashion out new ways as regards management and control of water resources in the vision of optimizing the use of Nigeria's water resources at all times, for present generations to live in harmony with environmental requirements, without compromising the existence of the future generations.

The Policy also advocated a National Water Law that will take into account the different physical, social and economic circumstances that exist in different areas of the country. It will provide a flexible framework which enables appropriate arrangements to be introduced while recognizing these differences and also taking into account the principle of equality before the law and other legislation or policy. The set objectives of this policy are yet to be achieved and the national law advocated by the policy is yet to see the light of day.

Despite all these provisions of the various legislative interventions, studies still show that water supply in Nigeria is at a very low level. One major characteristic of the legal framework on water management in Nigeria is that they are all direct responses to environmental challenges. As a result, they try to prevent the pollution of water bodies. The supply and availability aspect of water management is clearly neglected accounting for the poor figures that the country records in terms of water supply and availability.

Water Availability During and Beyond Covid-19

Having examined the existing legal and institutional framework, the following are strategies that could be deployed in the short, medium and long term towards making water available to cope with the increased need for water whilst the corona pandemic lasts and even in its aftermath.

There is the need for a clear and coherent regulation on water supply in Nigeria. This regulation will create a clear path for the government to follow in ensuring that water is made available to all and sundry in Nigeria both for the immediate need and for posterity purposes. Although this may not have an immediate impact on water supply during the Covid-19 crisis, it would reflect a clear commitment by the government towards ensuring the adequate provision of water for the citizenry. The Draft National Water Resources Bill has been before the Federal legislature since 2007 and is yet to see the light of the day. This bill largely informed by the national water policy contains provisions for the equitable, beneficial, efficient, and sustainable use and management of the nation's surface water and groundwater resources and will establish a new institutional framework for Nigeria's water resources.

The issue of water supply is contained in the concurrent list of the constitution making it the responsibility of the government at all levels to provide an input in the availability of water. While much is expected by the Federal government to define institutional roles and develop supporting policies for water supply and sanitation delivery in Nigeria, there is the need to provide policy guidance at the state level as water supply and sanitation is mostly the state governments' responsibility. The Federal Republic of Nigeria is made up of 36 states; suffice to say that the States have a high degree of autonomy and the commitment to water availability is clearly uneven. While some states have created strong enabling environments (some states being more advanced than that which obtains at federal level), other states are yet to start the reform process. This uneven commitment to water supply and sanitation and shaping its enabling environment is also reflected in vast disparities in rates of access to water supply services across states hence the need for a uniform commitment.

There is also the need for a composite institutional framework on water management in Nigeria. This would involve the establishment of an independent water commission that will take charge of regulation matters.

As a regulatory body, its independent status will allow its regulatory and monitoring mechanisms to operate without pressure or influence from government or lobbyists so as to pave way for a better enforcement process that will ensure investor confidence in both private and public sectors. Furthermore, its independence will guarantee the continuity of water policy during changes in government.

The private sector should be given a major role in the water supply sector which will in turn be an engine for private sector job creation and economic growth. The activities of the private sector are usually run on a sustainable basis using sound business principles. Creating an enabling environment for private sector participation will allow for the promotion of different technology options and management styles in water service delivery. This participation should however be in accordance with national policies and guidance and consistent with State regulation of the water services sector.

The above recommendations represent long and medium-term solutions to water availability in Nigeria. As a short-term solution and an immediate response to the increased need for water for the management of Covid-19, the government needs to invest in nature-based solutions to improve water storage and supply, thereby increasing water availability and potentially reducing competition between different water users and uses. There is a small but growing body of evidence that nature-based solutions are cost-effective, efficient, and adaptable and that they also offer co-benefits. These nature-based solutions can prove to be viable solutions in the long run, more so, as budgetary allocations are being reduced due to the economic effects of Covid-19. Examples of such nature-based solutions include rain water harvesting and enhancing aquifer storage. These techniques are easier to maintain and less expensive and will serve as a stop gap to reduce the shortage of water and reduce the competition between water users and water uses. In Kitui County, Kenya, the use of rain water harvesting has helped to increase water supply, benefiting health and livelihoods and reducing the potential for competition between users.⁴⁴

⁴⁴ Masila, T., Udoto, M.O., and Obara, J. 2015. Influence of Rain Water Harvesting Technologies on Household Food Security among Small Scale Farmers in Kyuso Sub- County, Kitui County, Kenya. *IOSR Journal of Agriculture and Veterinary Science*. 8(2): 80-86

Conclusion

The general welfare of the Nigerian nation requires, particularly in the wake of the current pandemic, the water resources of the country be put to beneficial use to the optimum level of which they are capable. Although it is laudable that our laws are directed at preventing pollution of water bodies in the quest for a sustainable management of water resources, water resources management transcends pollution prevention. Water supply and availability is an aspect that is clearly in a state of quagmire in Nigeria. The new normal is for people to source for water for their domestic use. The corona virus preventive mechanism of regular hand washing may suffer a huge set back where water is not readily available. It is clearly imperative now for the government to develop short, medium- and long-term plans to make water available for all Nigerians. This is to ensure that water is made available to all and sundry in Nigeria both for the immediate need and for posterity purposes thereby allowing the present generation bequeath to the future a rich water legacy capable of enduring unto many generations ahead.