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Arimoro, Augustine ORCID: <https://orcid.org/0000-0002-8698-9328> and Musa, Habiba (2020)
Towards sustainable water resource management in rural Nigeria: The role of communities. *The Journal of Sustainable Development Law and Policy*, 11 (1).

<http://dx.doi.org/10.4314/jsdlp.v11i1.2>

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JOURNAL OF SUSTAINABLE DEVELOPMENT
LAW AND POLICY



TOWARDS SUSTAINABLE WATER RESOURCE MANAGEMENT IN RURAL NIGERIA: THE ROLE OF COMMUNITIES

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Water, water, everywhere,
And all the boards did shrink;
Water, water, everywhere,
Nor any drop to drink
– Samuel Taylor Coleridge
(“The Rime of the Ancient Mariner” 1834)

ABSTRACT

Access to water is crucial for healthy living and survival. In developing countries such as Nigeria, rural communities often suffer from a severe shortage of the supply of fresh, potable water. The need to change the tide has led to the inclusion of the adequate availability of water for all as one of the 2030 United Nations Sustainable Development Goals. Evidence shows that the lack or poor supply of freshwater could lead to a prevalence of waterborne diseases and might negatively affect economically important activities. While water sustainability deals with ensuring adequate supply of water for the present and future generations, water resource management is the strategy for achieving water sustainability. Considering the above, this article examines the literature on water resource management vis-à-vis the legal framework for water

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management in Nigeria. The article notes that rural communities in the country have a critical role to play in water resource management in the country and in the quest to attain the goals for water. It is recommended that policies should be implemented to provide for sustainable management of water as well as a strategy for educating rural communities on what they must do to achieve the Sustainable Development Goals for water management in Nigeria at the rural community level. For example, there is a need to provide for private sector led water development projects in rural areas backed by government subsidy as well as programmes to enlighten community leaders on their role in ensuring water sustainability.

Keywords: Water, access to water, legal framework for water management, rural area, SDGs, Nigeria.

DOI: <https://dx.doi.org/10.4314/jsdpl.v11i2.2>

1. INTRODUCTION

Water is life and a precious natural resource. As a resource, water is an asset. In flooding, it becomes a threat; and wherever water is scarce, it leads to drought.¹ The adequate supply of water is central to life and civilization.² The target of the Millennium Development Goal 7.C was to halve the number of people with no access to safe drinking water and basic sanitary facilities by the year 2015.³ This led to a growth of between 81 per cent to 89 per cent for persons with access to safe drinking water from 2000 to 2015.⁴ The term “sustainable water resource management” is a concept that emphasizes the need to consider the long-term future needs with the present.⁵ Hence, sustainability focuses on meeting the

1 Raimi Morufu Olalekan, Omidiji Adedoyin, Adedipe Amakama Ayibatobira, “Digging Deeper: Evidence on Water Crisis and its Solution in Nigeria for Bayelsa State: A Study of Current Scenario” (2019) 3(4) *International Journal of Hydrology* 244. DOI: 10.15406/ijh.2019.03.00187.

2 Federal Government of Nigeria, *National Water Policy* (2004) at 3.

3 A. Saheed, J. Orgill et al, “Why ‘Improved’ Water Sources Are Not Safe” (2014) 92 *Bulletin of the World Health Organisation* 283-289 DOI: 10.2471/BLT.13.119594.

4 Ibid.

5 Daniel P Loucks, “Sustainable Water Resources Management” (2000) 25(1) *Water International* 3. DOI: 10.108D/025d80600008686793.

needs of both current and future generations.⁶ Furthermore, water resource systems that are managed to satisfy the changing demand placed on them now and in the future, without system degradation, are referred to as “sustainable”.⁷ What this means is that a strategy must be put in place to ensure that freshwater is not only made available for use in the present but there also has to be a need to ensure that future generations are not deprived by any misuse in the present.

This article aims to highlight the need for rural communities in Nigeria to play a key role, as well as examine the regime for water resource management in Nigeria and the role which local communities across the country can play in ensuring the sustainable management of water. It is expedient for Nigeria to efficiently manage its water resources to attain the sixth Goal of the United Nations 2030 Sustainable Development Goals (SDGs). Strategic management and provision of sustainable public water supply must be pursued by developing economies to improve the quality and standard of living, preserve the ecosystem as well as alleviate poverty.⁸ A strategy that involves rural communities as stakeholders in water resource management has been identified as one of the crucial methods to bring about sustainability to water utilization.⁹ Water supply is regarded as sustainable where there is an effective, reliable and consistent service at a level where supply matches demand; it can be financed or co-financed by the users with limited but feasible external support; and it is being used efficiently devoid of any negative effect to the environment.¹⁰

According to the United Nations (UN) resolution 64/292, “the human right to water entitles everyone to sufficient, safe, acceptable, physically accessible and affordable water for personal and domestic uses.”¹¹

6 Ibid.

7 Ibid.

8 Isaac Idowu Balogun, Adebayo Olatunbosun Sojobi and Emmanuel Galkaye, “Public Water Supply in Lagos State, Nigeria: A Review of Importance and Challenges, Status, Concerns and Pragmatic Solutions” (2017) 4(1) *Cogent Engineering* 2. DOI: 10.1080/23311916.2017.1329776.

9 Anyanitha Distanont and Sasipin Distanont, “Collaborative Triangle for Effective Community Water Resource Management in Thailand” (2018) 39(3) *Kasetsart Journal of Social Sciences* 374. DOI: 10.1016/j.kjss.2017.07.015

10 Henry Bikwibili Tanto, Danny Mulala Simatele, Tracey JM Mckay, “Towards a Pro-community-based Water Resource Management System in Northwest Cameroon: Practical Evidence and Lessons of Best Practices” (2019) *Geo Journal* DOI:10.1007/s10708-019-10085-3.

11 A Saheed, op cit (note 3).

Consequently, the discussion in this article covers a background of the water challenge in Nigeria; the SDGs, particularly Goal 6 which deals with ensuring availability and sustainable management of water and sanitation for all;¹² an analysis of the policies needed to manage the country's water resources/the legal framework for water resource management in the country;¹³ and future directions for effective management of water resources in the rural communities. For this article, a literature review of the results of previous studies are undertaken. Furthermore, an analysis of the proposed Water Resource Bill of 2018 is undertaken. The article discusses the role of rural communities towards achieving water sustainability and makes recommendations for sustainable water resource management in Nigeria with rural communities playing a key role.

2. THE WATER CHALLENGE

In Africa, about 115 people die per hour as a result of hygiene and drinking-water related diseases.¹⁴ While a systematic development of water supply and management in Nigeria dates as far back as the colonial era,¹⁵ Nigeria is currently bedevilled by an acute public water supply challenge.¹⁶ The interdependence between water demand and adequate supply is exemplified by the link between water and poverty. It is no surprise, therefore, that due to general poverty and inadequate access to improved water supply and sanitation, the chances of contracting communicable diseases are high. According to the United Nations Children's Fund (UNICEF): "Poor access to improved water and sanitation in Nigeria remains a major contributing factor to high morbidity and

12 United Nations, "Progress of Goal 6 in 2019" available at <<https://sustainabledevelopment.un.org/sdg6>> accessed 9 July 2020.

13 Kennedy O. Doro, Solomon Ehosioko and Ahzegbobor P. Aizebeokhai, "Sustainable Soil and Water Resources Management in Nigeria: The Need for a Data-Driven Policy Approach" (2020) 12 *Sustainability* 1. DOI: 10.3390/su12104204.

14 Resty Naiga, "Conditions for Successful Community-based Water Management: Perspectives from Rural Uganda, (2018) 14(2) *International Journal of Rural Management* 110-135 DOI: 10.1177/0973005218793245.

15 Niyi Gbadegesin and Felix Olorunfemi, *Assessment of Rural Water Supply Management in Selected Rural Areas of Oyo State, Nigeria* (ATPS Working Paper Series No. 49) (African Technology Policy Studies Network 2007) 1.

16 Balogun *et al*, *op cit* (note 8).

mortality rates among children under 5.”¹⁷ As many as 70,000 under-5 children die as a result of vulnerability to water-borne diseases every year in Nigeria.¹⁸ Statistics show that only 26.5 per cent of the population use improved drinking water sources and sanitation facilities.¹⁹ Out of Nigeria’s current population of nearly 200 million, an estimated 55 million Nigerians do not have access to clean water.²⁰ Also, 23.5 per cent of the country’s population defecate in the open.²¹ Sometimes this is done on the river mostly in riverine communities. This, of course, contaminates the water available to the people.

Ironically, while Nigeria is so rich in water resources with states such as Benue, Niger, Kaduna, Rivers, and Cross River that are named after rivers, Nigeria has a severe shortage of clean water, especially in rural communities. It is important to focus briefly on access to water in rural communities in Nigeria because it is a serious problem that has lingered on for too long despite many decades of development initiatives in the country.

The measurement for access to water shows the number of persons who have a reasonable means of acquiring an amount of water that is safe for drinking, washing and other essential household activities.²² This is usually expressed as a percentage of the population.²³ Safe water is regarded to include treated surface water and untreated uncontaminated water from sources such as natural springs, sanitary wells and protected boreholes.²⁴ Most commentaries on water supply often focus on water supply in urban areas generally rather than on water supply in rural communities.²⁵ Some factors have been identified as the reasons for the

17 UNICEF, “Water, Sanitation and Hygiene” (2020) available at < <https://www.unicef.org/nigeria/water-sanitation-and-hygiene> > accessed 9 July 2020. at para 1.

18 Ibid.

19 Ibid.

20 WaterAid, “Nigeria” (2020) available at < <https://www.wateraid.org/uk/where-we-work/nigeria> > accessed 9 July 2020.

21 UNICEF, op cit (note 17).

22 HT Ishaku, M Rafee Majid, AP Ajayi and A Haruna, “Water Supply Dilemma in Nigeria Rural Communities: Looking Towards the Sky for an Answer” (2011) 3 *Journal of Water Resources and Protection* 598 DOI: 10.4236/jwarp.2011.38069

23 Ibid.

24 Ibid.

25 Alua Omarova, Kamshat Tussupova, Peder Hjorth, Marat Kalishev and Raushan Dosmagambetova, “Water Supply Challenges in Rural Areas: A Case Study from Central Kazakhstan” (2019) 16(5) *International of Environmental Research and Public Health* 1 DOI: 10.3390/ijerph16050688.

poor access to water in the rural areas in Nigeria. These include poor coordination, poor maintenance culture, poor technical institutional structure and overbearing bureaucratic control by supervising ministries among others.²⁶ In their study, Obeta and Nwankwo identified a litany of factors responsible for short water supply in rural communities in Nigeria. These include rapid population growth; seasonality of water sources; absence of water infrastructure; long distance to stream/spring water sources; non-protection of stream/spring water sources; inadequate community participation; lack of political will; politicizing water projects; limited financial capacity; ageing water infrastructure; misappropriation of water supply projects funds. They also named topographic constraints; poor maintenance of water supply facilities; tradition and culture; urbanization; vandalism and damage to water facilities; geological factors; and ownership of water supply facilities among the constraints.²⁷ The result of their investigation shows that factors affecting water supply in rural areas are mainly physical environment barriers, water infrastructure deficit, socio-economic problems, geographical location, and management bottlenecks.²⁸

As of 2019, the World Bank estimates that a total of 98 million Nigerians live in rural areas.²⁹ This is nearly 50 per cent of the population of the country. In most rural communities in Nigeria, there is a shortage of basic infrastructure even though most of the food consumed in the urban areas are produced there. The deplorable lack of potable water for drinking and various household chores in rural areas is a cause for concern. Many rural dwellers trek several kilometres to streams or ponds to fetch water.³⁰ In some communities, the population rely on wells for water and run short of water during the harmattan season. In other

26 Michael Chukwuma Obeta and Cletus Famous Nwankwo, "Factors Responsible for Rural Residential Water Supply Shortage in South-eastern Nigeria" (2015) 8(3-4) *Journal of Environmental Geography* 21-31 DOI: 10.1515/je-geo-2015-0009.

27 Ibid.

28 Ibid.

29 The World Bank, "Rural Population of Nigeria" (2019) available at < <https://data.worldbank.org/indicator/SPRUR.TOTL?locations=NG> > accessed 11 July 2020.

30 One of the writers of this article experienced this on a trip to a community in Edo State during the Harmattan Season. Most wells had become dry and the villagers had to travel to the local stream, a distance of about 3 miles to fetch water.

parts of the country, the villagers rely on ponds for their water supply. Sometimes these shallow ponds may be available for both man and animals and are always potential breeding grounds for communicable diseases.³¹ It is worrisome that there are rural communities where villagers defecate in rivers, streams and other water sources.³² This practice of defecating in water sources is prevalent in the riverine communities in the southern part of Nigeria. A study shows that open defecation appears to exist in Cross River, Akwa Ibom, Delta and Bayelsa States of Nigeria.³³ As recently as 2017, a member of the Bayelsa State House of Assembly, Kate Owoko, donated what was described as a “floating toilet” which she built and commissioned for members of her constituency in Okor Ama and Oweideo Ama communities in Amassoma LGA, Southern Ijaw Constituency of Bayelsa State.³⁴ The latrine was built on a river to allow open defecation. Having examined the state of water supply in rural communities above, section 3 of this article discusses access to water as an essential component of the SDGs.

3. SUSTAINABLE DEVELOPMENT GOALS AND WATER RESOURCE MANAGEMENT

For the sake of a background to this section, it is worthy of note that all 193-member states of the United Nations General Assembly (UNGA) agreed to transform our world through the 2030 Agenda for Sustainable Development (the 2030 Agenda) in 2015.³⁵ The 2030 Agenda defines a

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- 31 Cornelius C. Agbadike, “Population Growth and the Dilemma of Rural Life and Economy in Nigeria” (2010) available at < www.ajol.info-ujah > accessed 11 July 2020.
 - 32 Afe Babalola, “The Scourge of Open Defecation in Nigeria: Need for Immediate and Urgent Intervention” *The Vanguard* 25 December 2019 available at < <https://www.vanguardngr.com/2019/12/the-scourge-of-open-defecation-in-nigeria-need-for-immediate-and-urgent-intervention/> > accessed 9 July 2020.
 - 33 Randymay Eja Kalu, Kimboline Donatus Etim, Okon Aniekanabasi Jonathan and Matthew Egbobor Eja, “Open Defecation Profile of Rural Communities in Cross River and Akwa Ibom States of the Niger Delta, Nigeria” (2019) 8(12) *International Journal of Current Microbiology and Applied Sciences* 2332-2340 DOI: 10.20546/ijcmas.2019.812.275.
 - 34 The Cable, “Amid Criticism, Bayelsa Lawmaker Defends Construction of ‘Floating Toilet’” *The Cable* 25 July 2017 available at < <https://www.the-cable.ng/amidst-criticism-bayelsa-lawmaker-defends-floating-toilet-project> > accessed 10 July 2020.
 - 35 Augustine Arimoro and Abba Elgujja, “Public-Private Partnership and the Achievement of Sustainable Development Goals” in AB Kagu and EA Attah

plan of action for people, the planet and prosperity. By agreeing to the Agenda, member states committed to ending poverty in all its forms and to take bold steps to move the world on to a sustainable and resilient path.³⁶ As Ekhatior suggests, there is a need for developing economies to look beyond the barriers and work towards achieving the 2030 Agenda.³⁷ Water is inseparably linked to development, yet there is considerable pressure on water resources because of unsustainable development.³⁸ It is expected that by 2030 the global demand for water will increase by 50 per cent. Meanwhile, agriculture, which currently consumes about 70 per cent of global water usage, is expected to increase by around 70 per cent by 2050.³⁹ That is to say, even though agriculture accounts for about 70 per cent of the global consumption of water now, this is expected to further grow by at least another 70 per cent in the next 30 years.

The 2030 Agenda sets forward 17 SDGs and 169 global targets, relating to development and outcomes for 15 years (2015-2030).⁴⁰ Specifically, Goal 6 – Ensure availability and sustainable management of water and sanitation for all – reflects the concern and strategy to make water accessible to populations of the world.⁴¹ The goal is to make freshwater, in sufficient quantity and quality, available for all aspects of life and sustainable development. This aligns with the human right to water.⁴² The target for achieving SDG 6 can be summed up as follows:

(eds), *Perspectives on Governance and Accountability* (Centre for Research and Capacity Development on Humanitarian Studies 2019) 337.

36 The United Nations, *Sustainable Development Goal 6* (The United Nations 2018) 12. available at < https://sustainabledevelopment.un.org/content/documents/19901SDG6_SR2018_web_3.pdf> accessed 11 July 2020.

37 Eghosa Osa Ekhatior, “Barriers to Implementation of SDGs in Africa: The Need for Effective Business and Government Collaboration” (2019) *AfronomicsLaw B* available at < https://www.researchgate.net/publication/337622369_Barriers_to_implementation_of_SDGs_in_Africa_the_need_for_effective_business_and_government_collaboration> accessed 25 July 2020.

38 United Nations University, “Water-Related Sustainable Development Goals”(2020) available at < <https://inweh.unu.edu/projects/water-related-sustainable-development-goals/>> accessed 13 July 2020.

39 Ibid.

40 Arimoro and Elgujja, op cit (note 33).

41 The United Nations, op cit (note 34).

42 See United Nations (UN) Resolution 64/292. Principle 4 of the Dublin Conference states that: “It is vital to recognise first the basic right of all human beings to have access to clean water and sanitation at an affordable price. In July 2010 the UNGA formally recognised the right to water and sanitation and acknowledged that clean drinking water and sanitation and sanitation are essential to the realisation of human rights.

achieve access to safe and affordable drinking water; achieve access to sanitation and hygiene and end open defecation; improve water quality, wastewater treatment and safe reuse; increase water-use efficiency and ensure freshwater supplies; implement integrated water resources management; protect and restore water-related ecosystems; expand international cooperation and capacity-building, and support stakeholder participation. This article is concerned specifically with the need to support the rural communities as stakeholders in the realization of SDG 6. The vexed question here is this: what framework is available for promoting rural dwellers participation in realizing Goal 6 of the 2030 Agenda? The answer is water sustainability.

While water sustainability is used here to mean working towards effectively making water available for the present generation and for the next generation, water resource management refers to the strategy to be put in place to ensure water sustainability. “Sustainability” in general terms, means the “ability to be maintained at a certain level.”⁴³ The term was first coined several hundreds of years ago by Hans Carl von Carlowitz in his 1712 text titled *Sylvicultura Oeconomica*.⁴⁴ In the text, he prescribes how forests should be managed on a long-term basis.⁴⁵ It was in the 1980s that the term attained recognition by contemporary environmentalists.⁴⁶ Increased global trade in agricultural commodities has been identified as one of the chief reasons why there has been an increase in freshwater consumption.⁴⁷ Sustainability has been described as the study of “how natural systems function, remain diverse and produce everything it needs for the ecology to remain in balance.”⁴⁸ Water sustainability in the context of this discussion is the ability to “control water demand and reduce activities (e.g., agricultural production) that require large amounts of water...Water sustainability...requires an overall reduction in water use, which cannot be achieved without a holistic

43 Denna K Kreisel, “Sustainability” (2018) 46(3-4) *Victorian Literature and Culture* 895-900 at 895. DOI: 10.1017/S1060150318001134.

44 Ian Scoones, “Sustainability” (2007) 17(4-5) *Development in Practice* at 590. DOI: 1080/09614520701469609.

45 Ibid.

46 Ibid.

47 Jeroen Vos and Rutgerd Boelens, “Sustainability Standards and the Water Question” (2014) 45(2) *Development and Change* 100.

48 Environmental Science.org, “What is Sustainability and Why is it Important?”

approach...”⁴⁹ The Brundtland Report in 1987 described sustainable development as one that satisfies the needs of the present without adversely affecting the conditions for future generations.⁵⁰ In simple terms, sustainability is based on a doctrine that everything mankind needs for survival and well-being is dependent on our natural environment. Furthermore, it is a way of saying let us work towards the needs and aspirations of the present without compromising the ability to meet those of the future. Thus, we need to work towards ensuring that while adequate water supply is provided, there must be a strategy to ensure that it is sustained for future generations.

In the same vein, the low access to safe water supply in rural communities can be explained in part to be as a result of poor sustainability of water infrastructure.⁵¹ To paint a clear picture of the availability of freshwater in the entire universe, a survey conducted by the US Water Science School shows that out of the 100 per cent of the total global water resources, the oceans constitute 96.5 per cent, other saline water 0.9 per cent while freshwater is just 2.5 per cent.⁵²

4. LEGAL FRAMEWORK FOR WATER RESOURCES MANAGEMENT IN RURAL COMMUNITIES IN NIGERIA

This article does not aim to discuss the general regime for water governance in the country. The assessment undertaken is limited to the rules for the management of water resources in rural communities. Similarly, this is not a discussion on the general body of laws that deal with water resources, for example, rules laid down for prohibiting the pollution of water or oil spillage.

49 W Yang, DW Hyndman, JA Winkler *et al*, “Urban Water Sustainability: Framework and Application”(2016) 21(4) *Ecology and Society* DOI: 10.5751/ES-08685-210404.

50 My Climate, “What is Sustainability” available at < <https://www.myclimate.org/information/faq/faq-detail/detail/News/what-is-sustainability/>> accessed 14 July 2020.

51 Sara J Marks, Kristin Komives and Jennifer Davies, “Community Participation and Water Supply Sustainability: Evidence from Handpump Projects in Rural Ghana” (2014) 34(3) *Journal of Planning Education and Research* 276-286 DOI: 0.1177/0739456X14527620.

52 Water Science School, “Groundwater Flow and the Water Cycle” available at < https://www.usgs.gov/special-topic/water-science-school/science/groundwater-flow-and-water-cycle?qt-science_center_objects=0#qt-science_center_objects> accessed 14 July 2020.

Nigeria adopted a National Water Policy in July 2004 following the Water Resources Act of 1993. The Policy was designed to provide a background for a framework for addressing the water challenge in the country. The policy recognizes the need for a balance for water uses, water allocation and water protection through a regulatory system. The Policy provides for a strategy to “promote the importance of the private sector participation in the provision of rural water supply and sanitation services at the community level.”⁵³ Furthermore, a strategy to “promote decentralized repair and spare parts delivery for rural and small-town water supply”⁵⁴ is mentioned in the document. However, it is doubtful whether this strategy has been implemented since it was thought of. Pending the passing of the Water Bill 2018, the Water Act of 1993 provides the regulatory framework for water resources management in Nigeria. Section 1 of the Water Resources Act 1993 vests the right to use and control all surface and groundwater in the country in the Federal Government. The Act itself was put in place to promote optimum planning, development and use of the country’s water resources and other matters.⁵⁵ The law (i.e. the Act of 1993 in section 10 requires an application for a grant of a licence for the purposes mentioned in section 9 i.e. the diversion, storage, pumping or use on a commercial scale of any water or the construction, maintenance, operation, repair of any borehole or any hydraulic works. There is, however, no specific detail on water management in rural areas in the Act of 1993.

The law for water resources management in Nigeria does not take into perspective the crucial role of the rural communities in the country. Worthy of note is that many rural communities in the country have customary rules regarding water management. These rules of native law and custom are largely unwritten and handed down from generation to generation.⁵⁶ Under customary law, watercourses or water bodies in any community is common to all and cannot be privately owned. For example, there is no private ownership of the streams, ponds, lakes, or watercourses in most rural communities in the country. The only peculiarity here relates to private underground water or where rainwater is harvested. For

53 See page 18 of the National Policy on Water.

54 Ibid 19.

55 See the long title and objectives of the Water Resources Act 2003.

56 I. J. Goldface-Irokalibe, “Water Management in Federal and Federal-Type Countries: Nigerian Perspectives” available at < https://media.africaportal.org/documents/Joe_Goldface_en.pdf > accessed 13 July 2020.

example, in some parts of southern Nigeria, private citizens dig plastered wells (which look like underground tanks) where they can store rainwater harvested and channelled from the rooftops of buildings. In the case of common water sources in the rural areas, even where the surrounding lands are privately owned, it is usual for the community to lay down rules, which are usually enforced by elders or the traditional rulers for the preservation of the water source.⁵⁷

The efforts by the Federal Government of Nigeria to pass a new Water Resources Bill into law is acknowledged. The highlights of the National Water Resources Bill, if passed into law, is to ensure that water resources in the country are protected through the establishment of a regulatory framework for water management in the country. It has been noted that the Bill is aimed at achieving the objectives of the SDGs.⁵⁸ According to Gbajabiamila:

This Bill guarantees our right to use water but guide against private ownership of water and ensure that the water resources of the nation are protected and managed in a sustainable and equitable manner for the benefit of all persons...⁵⁹

The Bill aims to establish the National Council on Water Resources, the Nigeria Water Resources Regulatory Commission, River Basin Development Authorities, Nigeria Hydrological Services Agency, and a National Water Resources Institute.⁶⁰ The Federal Government of Nigeria intends to achieve a sustainable distribution of water in the country, and create opportunities for public-private partnerships (PPPs).⁶¹ However, the Bill has not been received without controversies such as the Federal Government's proposed control of the water resources in the states of the federation. This is because the proposed Bill, if passed, will transfer

57 Ibid.

58 Jerome-Mario Utomi, "Nigeria: The National Water Resources Bill" *Thisday* 29 September 2019 available at < <https://allafrica.com/stories/201909300268.html> > accessed 13 July 2020.

59 Femi Gbajabiamila, "Lead Debate of the Executive Bill on National Resources" available at < <https://placng.org/i/wp-content/uploads/2019/12/LEAD-DEBATE-ON-THE-EXECUTIVE-BILL-ON-NATIONAL-WATER-RESOURCES-%E2%80%93HON-FEMI-GBAJABIAMILA-1.pdf> > accessed 24 July 2020. Femi Gbajabiamila is the current Speaker of the House of Representatives in Nigeria.

60 The Nation, "Politics of a Water Bill" *The Nation* 1 July 2018 available at < <https://thenationonlineng.net/politics-of-a-water-bill/> > accessed 14 July 2020.

61 Ibid.

ownership of every lake and every river, including the creeks and ancestral waters, to the Federal Government.⁶² Some who have opposed the Bill assert that it amounts to the Federal Government taking more powers from the states and further whittling down the principle of true federalism.⁶³

Just like the Act of 1993, the proposed Bill does not incorporate a clear role for rural communities in the efficient management of water resources in the country. Hence, this article seeks to suggest ways in which the rural communities in Nigeria can support the attainment of SDG Goal 6 as far as water resource management is concerned.

5. DEFINING A ROLE FOR RURAL COMMUNITIES IN THE MANAGEMENT OF WATER RESOURCES

Given that people who dwell in rural communities in Nigeria suffer more from severe shortage of water supply, there is a need to address water resource management at the rural level in the country. In the same vein, the world is challenged by water stress and food insecurity. This is because food production, which often takes place in rural areas, is the largest consumer of freshwater.⁶⁴ Furthermore, community management can be a leading model for the implementation of rural water supply systems.⁶⁵ In African communities, the importance of water is not only socio-economic. Water has cultural and spiritual importance.⁶⁶ For example, among the Mzimvubu people in the Eastern Cape Province of South Africa, traditional leaders and cultural practices have played a significant role in the allocation of water among the people.⁶⁷ The concern here is to

62 Ibid.

63 Vanguard, "Water Resources Bill: Don't Throw Nigeria into Fresh Calamity IYC Tells FG" *Vanguard* 18 September 2019 available at < <https://www.vanguardngr.com/2019/09/water-resources-bill-dont-throw-nigeria-into-fresh-calamity-iy-c-tells-fg/> > accessed 14 July 2020.

64 Kate Brauman, Stefan Siebert and Jonathan A Foley, "Improvements in Crop Water Productivity Increase Water Sustainability and Food Security – A Global Analysis" (2013) 8 *Environ. Res. Lett* 1.

65 Ton Schouten, "Scaling Up Community Management of Rural Water Supply" (2006) available at <<https://www.lboro.ac.uk/research/wedc/well/water-supply/ws-factsheets/scaling-up-rws/>> accessed 13 July 2020.

66 Farai Kapfudzaruwa and Merie Sowman, "Is there a Role for Traditional Governance Systems in South Africa's New Water Management Regime?" (2009) 35(5) *Water SA* 683.

67 Ibid.

develop ways in which rural communities can on their own, manage their water resources, improve on their water supply and establish their community water supply systems. In the case of Nigeria, the public authority can leverage on strong community support to prevent waste and contamination of water.

Traditionally, citizens have always relied on the government alone to provide for all of their infrastructure needs.⁶⁸ In the face of budget deficits and competing demands for scarce government resources, it is expedient that both government and citizens seek alternative means for the procurement of infrastructure for use by citizens.⁶⁹ It has been argued, and rightly so, that strong traditional leadership, resolute devolution and other factors such as the active participation of rural communities and people-centred development process can be tools for the effective management of water resources.⁷⁰ According to Naughton, with 70 per cent of the world's extreme poor living in rural areas, and improved water access still lacking for close to 768 million people around the world, strategic investment in safe and sustainable drinking water for the citizens living in rural communities is a critical step towards the eradication of extreme poverty in the world.⁷¹

It cannot be over-emphasized that Nigeria needs effective strategies for involving local communities in water resources management, and this must be reflected in the framework for water resources management in the country. In the design of such a strategy, there should be a deliberate aim to ensure that measures taken by rural communities contribute to the achievement of SDG 6 to ensure sustainable water management for all. Accordingly, the strategy needs to involve the promotion of integrated water resources management at the local communities in the country.⁷²

68 Augustine Arimoro, "Public-Private Partnership and the Right to Property in Nigeria" (2019) 19(2) *African Human Rights Law Journal* 763-778.

69 Augustine Arimoro, "Institutional Framework for Public-Private Partnerships in Nigeria: Is it a Case of Too Many Cooks for One Pot of Broth?" (2019) 40(2) *Business Law Review* 73-79.

70 Henry Bikwibili Tanto, Danny Mulala Simatele, Tracey JM McKay, op cit (note 9).

71 Meleesa Naughton, "3 Innovative Ways to Manage Rural Water Supply" (2013) available at < <https://blogs.worldbank.org/water/3-innovative-ways-manage-rural-water-supply> > accessed 13 July 2020.

72 UNDP, "Sustainable Management of Water Resources in Rural Areas in Uzbekistan: Technical Capacity Building (Component 2)" available at < <https://www.uz.undp.org/content/uzbekistan/en/home/projects/sustainable->

Given that the public authorities in Nigeria have become practically incapable of providing for the water supply needs of rural communities, local communities should be encouraged, where they can afford it, to provide their borehole systems through contributions of members of the community, with government providing technical expertise or subsidizing the cost. The projects should be supervised by community members without involving politicians. To our mind, this is better than some of the politicized water projects in the past where politicians would commission so-called boreholes during the rainy season that would become dry during the harmattan season.⁷³ It has been noted that hundreds of millions of dollars have been wasted on clean water projects in rural Africa.⁷⁴ According to the International Institute for Environment and Development (IIED), up to US\$360m was spent on building boreholes and wells that become useless because they are not maintained or fixed when they break down.⁷⁵

To ensure the sustainability of water supply in rural areas, the public authorities may resort to establishing an enduring Community-Based Management (CBM) model.⁷⁶ The CBM model involves a significant reduction in public expenditure and enabling the decentralization of the sector to allow private sector participation in the delivery of public goods.⁷⁷ In Uganda for example, rural water supply covers those communities that have a population of fewer than 5000 people. To provide for their water needs, the communities typically construct deep and shallow wells fitted with handpumps, protected springs and rainwater harvesting tanks.⁷⁸ The systems are usually managed by the community

management-of-water-resources-in-rural-areas-in-uzbe0.html> accessed 13 July 2020.

73 Godwin Chukwudum Nwaobi, "Corruption and Bribery in the Nigerian Economy: An Empirical Investigation" Available at < <https://econwpa.ub.uni-muenchen.de/econ-wp/pe/papers/0404/0404006.pdf>> accessed 24 July 2020.

74 Annie Kelly, "Money 'Wasted' on Water Projects in Africa" *The Guardian* 26 March 2009 available at < <https://www.theguardian.com/society/katineblog/2009/mar/26/water-projects-wasted-money>> accessed 13 July 2020.

75 Ibid.

76 Luke Whaley and Frances Cleaver, "Can 'Functionality' Save the Community Management Model of Rural Water Supply?" (2017) 9 *Water Resources and Rural Development* 56-66 DOI: 10.1016/j.wrr.2017.04.001.

77 Firminus Mugumya, "Enabling Community-Based Water Management Systems: Governance and Sustainability of Rural Point-water Facilities in Uganda" (2013) unpublished PhD Thesis Dublin City University 9.

78 Ibid.

members with support from the district and sub-country local governments.⁷⁹

Communities need to be sensitized about the need to preserve water resources and to avoid wasting water. This is one of the key points for the introduction of community-based water resource management.⁸⁰ According to Day, some of the advantages of engaging community-based water resource management include the following:⁸¹

- Local water users often possess detailed indigenous knowledge related to water resources, water needs, and historical changes that have occurred related to water use;
- Water users recognize that water is a fundamental component of their subsistence-based livelihoods, which helps to weave relationships between water users;
- Communities can monitor agreed water usage daily, as part of their daily activities;
- Communities often have historical mechanisms for conflict and dispute resolution related to water resource management, which may require continued support and assistance to evolve and adapt to global challenges;
- Effective water management requires community participation; this principle is well understood in the development literature.

6. CONCLUSION AND RECOMMENDATIONS

With increasing freshwater scarcity around the world, the need to ensure that water resources are efficiently managed has become pertinent. Water sustainability is a core agenda and the SDG 6. As such, member states have a mandate to ensure that they can deliver sustainable water to their citizens if this goal is to be achieved by 2030. This article considered the concept of water resources management as it affects rural communities in Nigeria. These communities suffer more from acute water shortages than people in the urban areas. It is also a cause for concern that agricultural practices put a strain on water resources management and

79 Ibid.

80 St John Day, "Community-based Water Resources Management" (2009) 28(1) *Integrated Water Resources Management* 47-62 DOI: 10.3362/1756-3488.2009.005.

81 Ibid.

given that most rural dwellers in Nigeria are mostly into agriculture, the government needs to address water resources management in the rural communities decisively.

While water sustainability deals with the need to make water supply adequate for the present and future generations, efficient water resource management is the strategy that can be adopted to make water sustainability possible. In this article, the concern has been to examine the need for water sustainability and how water resources can be managed optimally in rural areas given the acute shortage of water supply in those communities.

Unfortunately, the Federal Government of Nigeria has not treated water sustainability in rural communities with the attention it deserves. There is no clearly defined framework to sustain water supply in rural areas. The proposed 2018 Water Bill, like the Water Act of 1993 before it, does not provide any guidance for water resources management in the rural communities. It is recommended, therefore, that a clear framework for water resource management at the rural community level be included in the new water bill for the country. For example, the bill should clearly provide for an opportunity for private-sector driven water projects in the rural areas. This public/private-sector initiative should be structured as a partnership between the public-sector and private investors in the form of private-financed initiative (public-private partnership). Under this style of PPP, the public authorities will subsidize the utility charges. The law should create an agency to support the enlightenment and/or education of community leaders on ensuring water resource management for sustainability. Furthermore, federal and state governments need to create programmes to sensitize rural communities on water sustainability. Apart from increasing the productivity of water in the rural areas, there should be an aim to increase the value-added from every drop of water used for example for purposes of irrigation. Finally, practices that achieve more output per unit of water consumed for agricultural purposes should be promoted.