

People (human capital) and sustainable development: An analysis of the measures directed at the protection and sustenance of water resources in Nigeria

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Abstract

People determine what becomes of them by virtue of their actions and inactions. Therefore, the development and exploration of natural/mineral resources in the environment by man such as water resources is often associated with problems. However, some of these problems are natural whereas others are man-made. Hence, this study investigated the efforts made by the Nigerian government towards the protection and sustenance of water resources with the view to achieve sustainable development, especially goal 6 of the 17 SDGs of the UN. The method implicit in the study is a qualitative survey research approach in which data were sourced through secondary means and descriptively content analyzed. System theory was employed in the analysis. Findings revealed that Nigerian governments have taken some bold steps to protect, provide, and sustain water resources in Nigeria. But the efforts are not genuinely designed and/or implemented as they yielded little or no significant results in protecting, providing, and sustaining the water bodies and making clean water available, accessible, and affordable to the

citizens. Recommendations were made as a pathway to sustain water resources/bodies in Nigeria and make clean water available to the citizens.

Keywords: People, sustainable development, water resources/bodies, system theory, ecosystem, human capital development

Introduction

Man depends on the environment to eke out a livelihood. Hence, man's ability to survive; thrive, develop, and enjoy life or otherwise is subject to his capacity to harness the forces of nature in the environment to his utmost use and advantage. Onah, Aduma, & Obi (2021) averred that for man to survive and develop, he engages in socio-economic activities, the building of institutions, and relations starting from the period of civilization up to this modern era. Therefore, man's success and or failure are tied to the environmental variables shaping and influencing his activities cum development (Onah & Ogu, 2021). Man, therefore, must learn, understand, and build capacity for the mastery of self and the environment in pursuit of development. All that man has been doing or all his activities right from the dawn of civilization to the present 21st century known as "knowledge economy" is to develop self and the environment for the betterment of mankind.

It is against this backdrop that the United Nations (UN) declared "a Decade of Development" in the year 1960, which after its expiration; the UN has been consistently on the move for global development and partnership by declaring one development agenda after the other. These development agenda of the UN often cut across the global community by ways of Treaties, Pacts, MoUs, etc. signed by different UN member countries that further domesticate/localize such global development agenda in their home territories or environments via its national governments' machinery and apparatuses. Examples of these global development agenda of the UN are such as the 8 Millennium Development Goals (MDGs) that began in the year 2000 and expired/elapsed in the year 2015. However, at the expiration of the MDGs agenda in 2015, the UN being consistent in its vision for global development and partnership around the world launched another development agenda called the 17 Sustainable Development Goals (SDGs), also known as Vision 2030, that is, the expected year to end the program, evaluate and

report progress and possibly move on by setting up yet another development agenda after 2030 (UN SDGs, 2015).

All these efforts of the UN and the individual countries domesticating UN agenda and policies are in an attempt to coordinate, harness and integrate the variously scattered environmental variables that play roles in inhibiting or fostering development and its sustenance for the benefit of mankind. To this end, it is an established premise and irrefutable reality of all times that man and the environment are the two main recipients of development whether the good or the bad aspect of development (Onah, 2018; Darling, 2007; African Development Bank Group, 2014; UNHR, 2011). Therefore, efforts should be made vigorously to ensure that whatever development is achieved by man is sustained (preserved/conserved) without negative consequences befalling man and negatively altering the functionality of the ecosystem. In other words, there is a paramount need to establish a balance in the ecosystem when using natural resources such as water in the environment or when pursuing development goals and the needs of man. The purpose of establishing and campaigning for sustainable development is to guarantee development that is ethical, thereby serving as a fundamental requirement for the achievement of a balanced and integrated development that enthrones good conscience, social justice, equity, fair play, and humanity (Onah, 2018; Luetz & Walid, 2019; UNDP, n.d.). This is the pathway to the achievement of man's desired development that will be sustainable, especially regarding water resources as this study epitomizes.

Therefore, the focus of this paper among other things is to pinpoint what sustainable development is, how it came into being (historical origin), how it lacks compliance by man in the bid to use natural resources in the environment and carry out development have jeopardized the ecosystem thereby generating problems to man, following pollution, the drying up and shrinking of water bodies in Nigeria as a result of man's inability to manage development well and sustain same. Also, solutions were proffered as the aftermaths of the analysis of the measures geared towards resolving the challenges posed to man and the environment by man's inability to sustain development and especially the water bodies in Nigeria, being the focus of the study.

Materials and methodology

The research methodology implicit in this study is the qualitative survey method. It meticulously traced the origin of the concept of sustainable development from the 1987 inception till date by the UN agency, serving as the exigent global efforts to save man and the environment, while using natural resources in the environment and pursuing development. Hence, the study adopts secondary data sources gleaned from UN publications, the government's legal documents regarding environmental protection and sustainability, the Constitution of Nigeria, textbooks, articles published in peer-reviewed journals, Internet materials, etc. written by experts in the field of sustainable development, and the environment.

The authors juxtaposed these materials and descriptively content analyzed them in relation to the efforts made by man and the Nigerian government towards sustaining the water resources/bodies in line with goals number 6, and 14, of the 17 sustainable development goals (SDGs) of the UN (see UN SDG, 2015), for the purpose of man's benefits and the environment. Specifically, we descriptively content analyzed the nexus among people, sustainable development, and water resources; why protect and sustain water resource/bodies; sustainable human resource development and the major water bodies in Nigeria; analysis of some of the efforts made to safeguard water resources/bodies in Nigeria, results and discussion; and finally, conclusion and recommendations.

The theoretical framework of analysis

The study adopts system theory. The first ever known system theory in scholarship was propounded by Ludwig von Bertalanffy in the 1920s. The proponent studied system theory from a biological perspective; where the human body was studied and concluded that the human body is made up of systems such as the respiratory system, digestive system, reproductive system, etc. working harmoniously and cooperatively to form the entire human body. He noted that malfunctioning of any one part of the system or parts of the system may lead to the breakdown or failure of the entire human body. Therefore, efforts should be carefully made to ensure that all parts of the systems are treated well, healthy, and working fine. However, Onah, Asadu, & Aduma (2020) noted that other scholars such as Easton David (1953) leveraged the general system theory to propound the political system theory (sub-system theory) of demand and response mechanism of the flow of input-

output on how decisions and goals are reached in a polity – a political system. Onah, et al. (2020) further noted that even the structural-functionalism theory in sociology is an offshoot of the general system theory; modified and adapted in making analysis in sociology over how structures like institutions (church, bank, government machinery, market, school, etc) in society determine the roles they perform in alignment with their inherent structures as designed to operate. Asadu & Onah (2018) noted that system theory is multidisciplinary in nature and approach in its analyses of social phenomena. In other words, system theory is a macro-level order theory, which according to Onah, Asadu, & Aduma (2020) is due to its higher realm of an explanatory network, analysis, and deeper intergradations of social phenomena.

Against this backdrop, this study draws from the system theory to analyze the interdependency of the environment (water resources/bodies) as a subsystem to the entire ecosystem in human society (the general system) that must be protected jealously, used judiciously, handled with the utmost sense of justice and with a balanced view of life, in order to avoid drying up, pollution, going into extinction of plants and animals in aquatic habitat, and reduction of other abuses of water bodies by man with the view to achieving sustainable development. Therefore, if the water bodies being subsystems of the entire ecosystem – the general system which is the human society in this context are violated/abused by man or natural disaster, its negative implications will trickle down against man and the environment, such as the world is currently witnessing today in the ozone layer issue, climate change, and Nigerians faced with challenges associated with the drying up of Lake Chad, water pollutions, chaos in the water cycle and, its consequential harsh weather that is unsupportive to farming/agricultural activities. Henceforth, there is an established link between water bodies and the entire ecosystem in human society which should be balanced and protected to ensure sustainable development as both interact and shape activities of each other in a systemic relationship.

The nexus among people, sustainable development, and water bodies

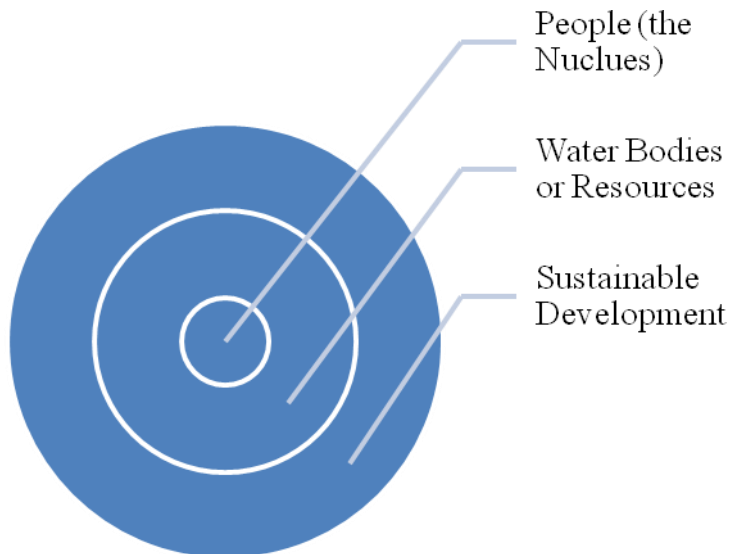
Man is the measure of all things according to Aristotle. Therefore, people and sustainable development correlate because, it is the people that use natural resources in the environment, and also strive to achieve desired development

which implications of how people go about the pursuit of these developmental objectives necessitated the need for sustainable development – which is still for the good of the people. To this end, everything about sustainable development is all about the people. Sustainable development, therefore, begins with the people, revolves around the people, and ends with the people. This is because the people determine what gets done, how, why, where, and when in resource control; allocation, and uses (Onah, Asadu, & Amujiri, 2022). Therefore, people as the architect of their own destinies determine what the environment becomes, whether good or bad. Hence, people are at the receiving end of all environmental consequences of human and natural activities in the ecosystem. The water cycle is a good example of this hypothesis that depicts how water is generated by nature and consequently circulated, and its uses by man epitomize the intervening variables with dominion effects.

People or human capital derives all forms of development – sustainable development inclusive. Therefore, human capital should be adequately trained and developed to ensure the achievement of sustainable development. If people are not well trained, educated, knowledgeable, skillful, experienced, etc. to generate and drive values to sustain development (Tasheva and Hillman 2019; Didenko, 2013; Kianto et al. 2017), they will be ignorant and unable to maintain or manage the environmental water bodies properly, thereby abusing nature such as causing pollution, fishing with chemical substances, depleting the ozone layer, etc. which make life hard with its implications on man and the environment. People are resources known as people resources or human capital. Hence, human capital must be developed first to ensure the development and sustenance of the water bodies in the friendly pursuit of a balanced ecosystem.

The main wealth of a nation and the propelling force for national development is dependent on the ability of a nation to develop quality and experienced people resources, to drive socio-economic development (Kotsantonis and Serafeim, 2020; Subramony et al. 2018). Relatedly, Hassan et al. (2019) averred that economic progress or development across the globe is a function of the development of human resource/capital, which Abah (2007) corroborated by affirming that the effective and efficient utilization cum maximization of natural and all other resources in the environment like financial capital and machinery rely on quality

human resource development itself. Therefore, the below diagram summarizes the nexus and the interdependency and interaction among the people, sustainable development, and water bodies.



Source: Onah, et al. (2022)

Figure 1: Depicts the nexus among the 3 variables (people, water bodies/resources, and sustainable development) of the study. It shows that people are the nucleus or at the centre stage of the activities driving water bodies and sustainable development. Hence, people determine if water bodies are sustained or not by their activities in the uses of water bodies and development in the environment.

Why protect and sustain water bodies

“All life is water,” says a Greek philosopher, Thales. Goal number 14 of the 17 SDGs of the UN emphasizes the need to conserve and sustain water resources and life below water as a means to achieve sustainable development (UN SDG, 2015). Hence, water resources are vital and strategic to the actualization of the 17 SDGs, because of life below water, blue economy, and minerals extracted from oceans and seas, and the general uses of water to mankind, and its roles in the interactions of the ecosystem in the environment is vital for man’s survival and development. The need to conserve water resources is important, serving as a pathway to the realization of the Vision 2030 agenda. Therefore, Goal number 6, and its sister

Goal 14, of the SDG are global agenda pursued by each member country of the UN, not only Nigeria.

Yilkur & Gongden (2013) attested that irrespective of the numerous water resources and the enormous funds budgeted yearly for the water sector, a huge chunk of the Nigerian population is yet to have access to water, as a result of natural and man-made factors. Water resources cover about 70 percent of the earth (Martin, 2001), hence water is supposed to be available, but shockingly, it is not available for the people (Yilkur & Gongden, 2013). Therefore, upon the above submissions forming the departure to the reasons for sustainable development are the same courses of action why water bodies or resources are to be protected and sustained. In other words, the aims and objectives of sustainable development according to Onah (2018) cited in Onah & Asadu (2019) suffixes here among other things are adopted with some modifications below:

1. the avoidance of negative environmental consequences that accompanies the exploration of natural resources like water bodies/resources and striving for developmental activities.
2. to avoid creating problems for future generations while trying to solve today's problems of development like abusing water bodies through inordinate activities of man such as pollution, disposal of industrial wastes into seas, lakes, and oceans, etc.
3. to ensure that development achieved today will not fizzle out tomorrow through preservation and right uses of water bodies.
4. to protect man, the environment, and other natural resources from the adverse effect of development.
5. to avoid extinction of both renewable and non-renewable natural resources while exploring and harnessing resources in the environment such as the drying up of Lake Chad, and extinction of certain species of animals and plants.

Sustainable human resource development and the major water bodies in Nigeria

People dwell in an environment thereby basically interacting with the living/biotic and the non-living/abiotic factors both in the aquatic, non-aquatic, and terrestrial habitats. Hence, the activities of people in the environment have either positive or negative implications on the ecosystem, to the extent that mankind is not

exonerated from the negative consequences of man's ill activities in the environment. Therefore, man is at the receiving end of both good and bad outcomes of imbalanced and/or balanced activities in the ecosystem. Therefore, people should be properly trained; educated, acquire relevant skills, be developed, and be empowered with the right knowledge, ability, and attitude to know and be able to take the right decisions and actions towards protecting and saving the water bodies in the environment. This is because, if the water bodies are negatively impacted and misused, it will dovetail on man, who is the recipient of the consequences of the actions and inactions in the environment, whether the consequences are the product of his making or natural disaster. Against this backdrop, Abada et al. (2022) remarked that the Lake Chad water basin in Nigeria is undergoing massive changes that are adversely affecting the people living around the area and eking out a livelihood as sources of earning are being impoverished, face despair, and conflicts associated with the changes. Therefore, something urgent needs to be done to arrest the situation.

Sustainable development strengthens the need for sustainable human resources. It is the quality human capital that sustains the development of the environment – water bodies inclusive. Therefore, the concept of sustainable development evolved in 1987 following a United Nations (UN) conference organized by the World Commission on Environmental Development (WCED), held in Brundtland, India. WCED (1987) defined sustainable development as a “development that meets the needs of the present generation without jeopardizing the ability of the future generation to meet their own needs”. Henceforth, all developmental efforts of man have been consistently advocated to be in line with the ethos and principles of sustainable development (SD) (World Commission on Environmental Development [WCED], 1987) and also consequently in alignment with environmental impact assessment (EIA). This ensures that developments achieved are ecosystem friendly and do not constitute a risk to the overall well-being and progress of the people living now and of future generations. Mohammed (2013) averred that sustainable development is how national resources are preserved by the state for the general utilization by the citizens present and the capacity to preserve the natural resources for future generations.

The principles of sustainable development encapsulate that human health and environmental impact assessments (EIAs) should be strongly observed and

complied with to ensure balanced development (Mohammed, 2013; Kozié'n, 2021; Emas, 2015; Klarin, 2018). The overall aims are to guarantee proper utilization, allocation, and conservation of the ecosystem for the benefit of the present and future generations, within the spectrum and implementation of sustainable development goals, with the three main pillars of sustainable development, which according to scholars are known as the economy, human health, and socio-cultural variables (Mensah, 2019; Halisçelik & Soytaş, 2019; Purvis, Mao, & Robinson, 2018; Arushanyan et al. 2017; Boyer et al. 2016). Sustainable development, therefore, is a prerequisite for the continuous existence, survival, and thriving of man who is the Chief beneficiary of the environment and upon whom the outcome of development both the good and bad revolve around.

Sequel to the lack of sustainable water resources in Nigeria, the water bodies - the aquatic territories that represent oceans, lakes, streams, seas, reservoirs, dams – artificial water bodies, rivers, etc. that float or stagnant in a place, thereby serving different purposes for human needs such as drinking, agricultural, and industrial uses that generate values to mankind are drying up fast, contaminated, and polluted, thereby creating problems for man and the environment. Worthy to note is that water bodies or aquatic territories contain and support the existence of life of certain animals and plants (see Goal Number 14 of the UN SDG, 2015). Hence, almost every water body whether stagnant or floating, dirty or clean, natural or artificial, attracts the existence of life. Thus, a water body is a composition of both living and non-living organisms existing together and interacting, thereby shaping and influencing the ecosystem. Therefore, maximum efforts should be made to protect and sustain them and have a balance in their existence as man maximizes their resourcefulness both as food, the substance of medicine, arts/creative works, tourism, inheritance from nature, etc. in order to ensure that they do not go into extinction, dry up, contaminated, etc. with a view to serving different socio-economic values and benefits to man and the environment.

The main water resources or bodies that can be identified in Nigeria such as below are having serious challenges like the drying up of Lake Chad, which some stakeholders argued is responsible for the herdsman-farmers conflicts in the Northeast Nigeria, as both fight over the scarce water bodies that are gradually drying up. In the past 58 years, more than 90% of the Lake Chad water resource has shrunk, whereas, in 2021, it occupies less than 10% of the total surface area it

hitherto occupied in the 1960s, which approximates 25,000Km² (Lake Chad Basin Commission, 2021). Similarly, water bodies in Nigeria have different challenges which are man-made and natural. Some of the water bodies in Nigeria are:

1. The Niger-Benue River system
 2. The Lake Chad system
 3. The Cross River Basin
 4. The Anambra River Basin and
 5. The Ogun-Oshun Basins
 6. The Oguta Lake
- Etc.

Problems of water resources/bodies in Nigeria

The challenges associated with water bodies in Nigeria could be grouped into two categories which are; (1) natural and, (2) man-made problems. The natural problems are such as erosions, desertification, excessive wind, flooding, drying up of water bodies, etc. The man-made problems are problems caused by man mostly knowingly but ignorantly overlooking them in the process of using water resources and the ecosystem thereby having negative consequences on the water bodies and the environment. Idu (2015) also classified the problems of water resources into two; which are natural and anthropogenic.

The artificial/man-made problems are such as:

Deforestation

Oil spillage

Negligence

Ignorance

Pollution

Dumping refuse and building along coastal lines/regions

Illegal fishing that endangers aquatic animals into extinction from a particular water body

Fishing with harmful chemical substances like Gamelan 20

Breaking up of the ozone layer by human activities results in negative effects on the water bodies

Disposal of industrial wastes inside water bodies like seas, oceans, lakes, streams, etc.

Natural resources endowed by nature to man in the environment are for man's use and are not always renewable. Hence, these natural resources must be properly

harnessed, utilized, and sustained with a view to ensuring their continued existence and establishment of harmony and balance through the maintenance of ecosystem friendliness. Ngene et al. (2021) averred that effective management of water resources depends on good policy and institutional implementation capability, which is lacking in Nigeria. Thus, abuse is imminent. These natural resources especially those that are non-renewable such as water bodies, crude oil, ozone layer, forestry, wildlife, etc. are always violated and at risk of making them go into extinction thereby exposing man and the environment to danger and health challenges as a result of their depletion, such as humanity is currently undergoing certain health risk due to the depletion of the ozone layer, climate change, drying up of Lake Chad, etc. This further validates the early hypothesis that man is the Chief recipient of development and all efforts to exploit natural resources from the environment, thus necessitating the need for adequate sustenance and maintenance of all the intervening variables towards establishing functional and balanced ecosystem friendliness among all the environmental factors, forces, and circumstances facing man as he uses resources and carries out developmental quests.

Man's quest for development and use of natural resources in the environment like water bodies used basically for domestic/home activities, and industrial and agricultural purposes are essential for man's survival and progress. Notably, Odume & Slaughter (2017), Oyeboode et al. (2015), and Salau (2017) posited that socioeconomic development in Nigeria has been retarded due to the poor management and use of water resources. This is basically caused by man's negligence in the need of the utmost importance for the preservation of the ecosystem, leading to man building along coastal lines, engaging in deforestation activities, pollution, illegal poaching or fishing, especially with chemical substances like Gamelan 20, etc. have all contributed to the abuse of water bodies in Nigeria. Particularly, the fast shrinking of Lake Chad and other numerous water bodies in Nigeria, and the extinction of certain vital wildlife, and plants of inestimable herbal and/or medicine values are major problems facing water resources in Nigeria. This has also created a dominion effect on the entire ecosystem as it has triggered conflict over access to and uses of water bodies among stakeholders in Nigeria, forced migration, created violent social conflict, and the controversial bill presented to the Senate by the Presidency on regulating

water bodies, which is perceived by other ethnic groups as a subtle attempt to take away land and water bodies from the indigenous communities who are the owners and hand them over to the Fulani herdsmen for cattle grazing businesses.

The water bodies in Nigeria are being polluted, floating blockaded with illegal buildings and dumping of refuse along coastal lines, speedily shrinking and drying up at the same time, thereby creating water scarcity for man, animals, industries, etc. as evident in Nigerians undergoing different challenges brought about by lack of access, availability, affordability, and satisfaction of having the right quantity and quality of water across space and time in different regions in Nigeria. All these challenges are associated with the inability of man to correctly comply with sustainable development while using resources in the environment and also while pursuing his developmental needs and goals.

All the above human-oriented problems faced by the water bodies are controllable when sustainable human development is massively embarked on. But with a low (0.539) human development index in Nigeria (UNDP, 2019), and weak water governance system have resulted to the water bodies being in continuous degeneration to the detriment of the ecosystem's functional benefits to mankind and the environment.

Analysis of some of the efforts made to safeguard water bodies in Nigeria

Both at the level of federal, state, and local governments, Nigeria being a federation has made certain efforts as governments preoccupied at different levels have tried protecting, providing, and safeguarding the water bodies. Idu (2015) remarked that the water supply in Nigeria exists at tripartite levels among the federal, state, and local governments. Some of these efforts are going to be identified, reviewed, and analyzed in relation to serving the purposes for which they were made. Mostly, some of the efforts are in the form of laws, policies, policy statements, administrative machinery, institutional mechanism, and agencies created and saddled with the responsibilities of protecting, providing, and safeguarding Nigeria's water bodies. The reasons behind these efforts of the government could be attributed to what Ngene et al. (2021), and The Economist (2019) described as the critical roles played by water in achieving development in society and sustainable human endeavor at levels. These efforts shall be discussed

in details under different institutional creations and policies in this section, for easy understanding, and proper evaluation.

First and foremost, Nigeria being an integral member of the UN co-signed and has domesticated the 17 Sustainable Development Goals (SDGs) of the UN being pursued by the global community, in which environmental and water resource protection is captured according to the UN SDGs (2015), in which goals numbers 6, 13, and 14 that reads: “Clean Water and Sanitation”, “Climate Action”, “Life Below Water”, respectively affects sustaining water bodies. Nigeria domesticated the 17 SDGs of the UN by having a policy framework and office that oversees the implementation of these goals directly under the appendage of the office of the Presidency and governors of each of the 36 states of the federation. The SDGs office reports to the governors who in turn report to the federal government on the implementation of these goals. At times, the SDGs office attached under the governor liaises with the relevant government ministries, agencies, departments (MADs), and commissions to ensure vigorous pursuit and realization of the SDGs objectives.

Also, the NEEDS, SEEDs, and LEEDS creations of the FGN are offshoots of institutional mechanisms created to respond to the goals and objectives of the millennium development goals (MDGs), which are still used today by the federal, state, and local governments in Nigeria to pursue and implement the SDGs agenda, since both are offspring of the same species. That is, the 8 MDGs which began in 2000 and ended in 2015 gave birth to the 17 SDGs in 2015, in consolidation of the achievements of the 8 MDGs and expansionism drive to better the lots of human society. For example, Idu (2015) noted that the responsibility to provide/supply potable water to the citizens is domiciled by the state governments.

Water bodies or resources in Nigeria are managed by the FGN with state governments coming in for the urban water supply, whereas local councils take care of the rural communities (Lohdip, 2011). World Bank (2010) remarked that water supply and access in Nigeria is at a low ebb due to faulty equipment, and lack of power, or fuel to operate water machines, thereby leading to 60 million Nigerians lacking access to drinking water which culminates in declaring a state of emergency in Nigeria’s water, sanitation and hygiene in 2018 (World Bank, 2021).

Institutional creations like the River Basin Development Authorities (RBDAs). The River Basin Development Authorities (RBDAs) were created as a result of the passage of Decree 25 of 1976. The present law on RBDAs is cap 396 Laws of the Federation of Nigeria, 1990, for the RBDA Act. Also, is the National Water Research Institute (NWRI). The federal government of Nigeria (FGN) in the bid to

protect water bodies created in the year 2007 an agency known as the National Environmental Standards and Regulations Enforcement Agency (Nigeria) (NESREA), which monitors, controls, regulates, maintains, and ensures compliance with aquatic laws in the territorial waters bodies of Nigeria.

The FGN also created the Federal Ministry of Water Resources (FMWR) to ensure that management, supply, and access to clean water are available for Nigerians. But this has not been achieved, as the Ministry focuses on water supply for agricultural purposes like building and maintaining dams, especially in the Northern region, and pays less attention to water provision for drinking and domestic purposes for Nigerians. Nigeria has no consolidated water laws presently. However, President Buhari's Water Resources Bill is perceived as another form of RUGA for attempting to deprive people access to dig common wells and drill boreholes in their homes without getting permission from the FGN and off course making some payments. Hence, his controversial water resources bill is anti-people as perceived especially by southerners, and thus, was rejected twice in 2018 by the law makers, but his desperation made him bring back the bill again in 2020 (Olubajo, 2021). However, other efforts made by President Buhari towards the protection of water bodies and provision of water for Nigerians according to Agbakwuru (2021) are:

“Approval of the National Water Resources Policy by the Federal Executive Council in September 2016; Approval of a 15-year Roadmap developed by the Federal Ministry of Water Resources in 2016; Approval and Launching of Partnership for Expanded Water Supply, Sanitation and Hygiene Program in November 2016; Approval of the National WASH Action Plan for the revitalization of the sector and declaration of a “State of Emergency” on the sector in November 2018 and Launching of the “Clean Nigeria Campaign” in 2019 to make Nigeria Open Defecation Free by 2025.”

Nigeria has played significant roles at the level of multi-lateral cooperation through efforts of regional governments in the management of water resources. Nigeria participated and is still a key player in the regional arrangement that created the Lake Chad Basin Authority in 1964. The LCBC was established by the Fort-Lamy Convention on 22 May 1964 by the following founding members: Nigeria, Cameroon, Chad, and Niger, for the management of the Lake Chad River that cuts across the aforementioned countries (LCBC, 2021). The LCBC since its creation has been putting up efforts to manage the water resource to ensure sustainability. However, climate change, drought, population explosion, and food and human insecurity in the region have forced 42 million persons living around Lake Chad

into migration in search of better means of livelihood and security of their lives (LCBC, 2021).

The establishment of the hydrological agency or institute in Nigeria is another effort by the FGN toward water bodies' protection and sustenance. The Nigeria Hydrological Services Agency (NIHSA) established by the FGN maintains hydrological stations based across the country for gauging surface water points. It also controls groundwater exploration and monitoring. By extension, the agency studies environmental factors, thereby warning and predicting, advising citizens and the government on the right policy measures and actions to take towards ensuring a sustainable environment regarding water bodies in Nigeria.

Results and discussion

From the World Bank (2010) publication cited above, it is apparent that Nigeria is endowed with an abundance of water resources/bodies to the extent that some water bodies in Nigeria are connected directly to the Atlantic Ocean, thereby having a ceaseless flow with a constant supply of water. However, the challenge has always been the inability of Nigerian governments at different levels to harness the waters for efficient and effective supply to the citizens (Ngene, et al. 2021), and for other various purposes. Be that as it may, the government has not done enough towards providing her citizens with constant and clean water supply in their homes, offices, farms, and markets; public places; churches, schools, communities, towns, villages, etc. are lacking access to clean, potable, and affordable drinking water, a basic need for all human beings (see Goals 6 and 14 of the 17 SDGs of the UN, 2015). Reasons for this abysmal performance regarding water provisions are pointed to epileptic power supply, lack of well-trained engineers and professionals in the water management scheme, corruption by government officials and civil servants, lack of spare parts, and lack of maintenance of water supply facilities. However, any serious government can live above these excuses.

Despite all these shortcomings of the FGN, they are not ready to genuinely protect the water bodies nor make water available for Nigerians as evident is the contentious water resources bill being subtly forced on the legislature to pass into law, by the President. Ezeamalu (2020) reported that Wole Soyinka cautioned that the bill should be dropped because, if it is passed into law, it would hand over to the President "absolute control over the nation's entire water resources, both over and underground." The conceptualization and the real intention behind the bill are absurd and unthinkable, considering the World Bank (2021) report that only 48

percent of the Nigerian population has access to drinking water. Yet, the FGN wants to strictly regulate and deny citizens flexible access to underground water in their homes and elsewhere, even when the citizens have the financial capacity to sink their own boreholes, and dig wells.

In Enugu state, for instance, successive administrations right from the 1999 return from military to civilian democratic rule have not been able to provide the inhabitants of the city with safe drinking water to date. It is only in a few places that pipe-borne water flows in Enugu city based on scheduled arrangement usually once or twice, or a maximum of three in a week. At times, the water stops running for weeks and months and years, and decades due to power failure, breakdown of machines, and other silly and intolerable excuses being given by the Enugu State Water Management Corporation. Towards this end, Ede (2021) remarked that “the problem of water scarcity in the state capital, which has thrown many residents into hardship, is as old as the city itself. It has defied all solutions by different administrations”. People pay through the nose to get water from private vendors via tanker/lorry drivers who are shlyock businessmen that exploit the poor masses through the water supply, thereby impoverishing the masses more. In Trans Ekulu, many people rely on wheel barrow and truck pushers for daily water supply. The only alternative, though not for drinking, according to Ezenwaji, Eduputa, & Okoye (2016) is a shallow well that exists in almost all the yards in Enugu metropolitan as obtained in other urban areas/cities in Nigeria. The case of Enugu State is a sample reflection of the 36 states of the federation except in a few state capitals and towns where the rich drill personal boreholes for personal water use, and at times, they sell to the poor citizens in the neighborhood who could not afford to drill their own boreholes.

Away from state capitals and towns to communities and villages, what exists is a sad and unimaginable situation where people trek miles daily to fetch water from unhygienic lakes, streams, or rivers. These water bodies endowed by nature in the villages are often unclean because no government cares for the water bodies. Hence, people drink contaminated and unhygienic water, thereby being exposed to certain illnesses like diarrhea, typhoid, cholera, etc. that kill and impoverish the people the more. Ishaku, Majid, Ajayi, & Haruna (2011) averred that more than 70% of households in rural areas in Nigeria lack access to potable water supply. He further stated that they depend wholly on self-water supply (that is, free source) gotten from rivers, streams, rainfall, water ponds, and uncovered shallow wells which are pronto water-borne diseases like cholera, typhoid fever, malaria parasites, and dysentery. Anih & Ubong (2021) highlighted that the importance of water in the achievement of sustainable development cannot be over-emphasized,

yet Nigerians are suffering from a lack of potable water for drinking, domestic, industrial, and agricultural uses despite being blessed with water resources in abundant.

Nigeria's government has undertaken certain bold and notable efforts and policies toward water resources management and sustainability. Some of the efforts have been highlighted and discussed briefly above, with the attendant policies and implementation strategies meant to achieve the objectives. However, these efforts of the government are not enough to make a significant change in the protection and sustenance of water bodies in Nigeria, and consequently making water available, accessible, and affordable to the citizens, as and when needed.

Conclusion and Recommendations

The imperative of establishing ecosystem friendliness or balance toward achieving sustainable development needs to be created and sustained. This is to avoid problems associated with environmental hazards and abuse by man while using and exploring natural resources in the environment. Thus, certain efforts were put in place so far by the governments in managing and sustaining the water bodies in Nigeria. But the efforts have not yielded any significant results in terms of making clean water available, accessible, and affordable to the citizens for drinking, domestic, agricultural, and industrial purposes. Therefore, the following recommendations should be considered as a means to genuinely address the issues of water availability, accessibility, affordability, and sustainability in Nigeria.

1. The FGN should hand off the control of the water resources/bodies in Nigeria and entrust it to the state and local governments respectively.
2. The FGN should provide constant electricity, and adequate funds, and sustain the declared state of emergency on water availability in Nigeria, thereby launching and implementing operation massive water supply by drilling boreholes and building water reticulation and treatment plants in various communities across Nigeria.
3. The governments at all levels in Nigeria should cooperate and engage in more partnerships with NGOs, building frameworks for public-private partnerships, foreign development partners and donor agencies, and private citizens to provide water to Nigerians and protect water bodies in Nigeria.

4. Educate and re-orientate the citizens to avoid certain inimical man-made acts that destroy the water bodies such as oil spillage, building along coastal lines, fishing with harmful substances, water pollution, sewage disposal, etc.
5. The Constitution of the Federal Republic of Nigeria (1999) in the Second Schedule Items 29 and 64 should be amended to remove economic activities from the water like fishing from the Exclusive Legislative List, where the FGN controls water resources to be domiciled with the Concurrent Legislative List, where the state governments will control water resources with ease.

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