

# Challenges of Water Supply in Nigeria Since 1999 and its Consequences on Economic Development

**Ele Samson**

*Department of History  
Faculty of Arts and Social Sciences  
Gombe State University, Gombe, Nigeria  
E-mail: elesamson@gmail.com*

## ABSTRACT

*There is a dialectically strong relationship between infrastructure and national development. The developmental height attained by industrialized nations of the world is influenced by the availability of infrastructure. The Challenges of water supply prevalent in any given nation has the capacity to slow down the pace of national development therein. This is undoubtedly true because, water, often regarded as the well spring of life or blue gold is critical to the sustainability of mankind, animals, plants including the functionality of the various sectors of the Nigerian economy. Without doubt, it plays significant social-economic roles in the society. However, the provision of potable drinking water to the generality of the Nigerian masses has increasingly become problematic due to factors such as pollution, climate change, inadequate funding, collapsed infrastructure, corruption, increased population and so on. Government's effort at redressing the water question since 1999 has not adequately satisfied the people's thirst. With the aid of primary and secondary sources of data therefore, this study examines the challenges of water supply in Nigeria Since 1999 and its consequences on economic development. The main aim is to assess the causes of water scarcity, it's implication and the developmental challenges it poses to the Nigerian State in the 21<sup>st</sup> century.*

**Keywords:** *Water, economic development, pollution, infrastructure*

## INTRODUCTION

Water has been viewed as the global common heritage and everyone should, *albeit* effectively, have an inalienable social and political right to it. However, fresh water shortage has been noticed around the globe. The challenges of water supply have constituted a factor inducing conflicts in some parts of the world because the earth's fresh water is diminishing due to man's activities and climate change. Nigeria as a nation is in no way disassociated from the challenges of water supply. With the attainment of independence in 1960, our new indigenous leaders did not only inherit political power but the infrastructure including water facilities and distribution network from the colonial government. The question therefore is to what extent have they been preserved, reconstructed, and even multiplied to ignite the development of the nation? With the current preponderance of water scarcity in the country, it is increasingly becoming obvious that not much have been achieved in that regard. The social, economic and political implication of this is disturbing. Infrastructure are basic facilities provided by the public or private organizations to facilitate efficient development in an organization, the society, community or nation in general. They can be

compartmentalized into social and economic infrastructure. While the former encompasses recreation and tourist services, health care services, welfare, housing and education, the latter involves the provision of facilities such as potable water, electricity, roads, railways, airports, communication, etc. that can enhance the economic development of a nation. There is a direct relationship between the availability of infrastructure and urbanization because they serve as baits for the concentration of population in a given area (Ali, 2009).

Multi-national Corporations, NGOs, wealthy individuals in the society can play a role in complementing government's effort in the provision of infrastructure yet, there is a limit to which they can be involved. Thus, some have argued that the government has the central responsibility of making these necessities of life available to its citizenry. To some extent, the success or failure of any government is assessed on its commitment to this and other important issues in the country because apart from the tax payers revenue, it controls and determines how the income accrued from petroleum export is disbursed.

Water, which is the crux of this research can be viewed as an aspect of economic infrastructure. Studies on fresh water have hitherto been confined to professionals such as hydrologists, engineers, scientists, city planners and meteorologists. In contemporary times however, with the shortage of fresh water various organizations comprising human rights and environmental groups, international agencies, NGOs and diverse community groups have indicated interest in the water question (Barlow and Clarke, 2002) calling for actions that would help preserve, protect and ensure the systematic distribution of the earth's fresh water to meet the need of humanity. The term water is a component of the environment which consists of land, air, sea, living organisms, including plants and animals. The environment by extension is a layer of life support mechanism with a combination of nitrogen, oxygen, hydrogen, carbon dioxide, water vapour, dust particles and other elements and compounds. Water is derived from various sources such as the ocean water constituting 97% of the earth's water, ice 2%, and 1% fresh water obtained from the rivers, lakes, underground water, the atmospheric and soil moisture (Odey, 2009). Water, as it is generally alluded to, sustains life. It is impossible to survive without the availability of water. This work is however limited to discourse on fresh water. The World Trade Organization categorizes water as a "good". Those in the water business referred to it as "blue gold"; a tradable good with the aim of profit maximization. Little wonder the ever increasing state of commoditization and cartelization of water around the world (Barlow and Clarke, 2002).

Based on the above, this study, therefore, examines the challenges of water supply in Nigeria since 1999 and its consequences on the nation stressing the roles played by urban and industrial pollution, infrastructure collapse, inadequate funding, population increase, climate change, corruption and other related factors in subverting the populace's accessibility to safe drinking water.

### **The Importance of Water from Historical Perspective**

All over the world and throughout history, migrations and settlements of people were not limited to areas that could provide adequate security, economic opportunities, but water supply. Little wonder that most ancient rural communities were situated closer to the rivers, lakes, springs and streams. This is to buttress the significance attached to water. Eventually,

with increase in population through natural birth and immigration, such rural settings became abode of fortification for the people and also centres of commerce, industry, education and religion with a welding administration. For example, “The Kanuri... originally colonised the basin of the Lake Chad by dominating the earlier Afro-Asiatic language speaking peoples of that area” (Selected Historical Writings of Abdullahi Smith, 1987). No doubt, the Lake Chad Basin offered a lot of attraction to the Kanuri that is, water and the various resources in it.

Similarly, linguistic evidence has been utilized to demonstrate that the original homeland of the people speaking the Kwa family of languages, namely, Yoruba, Igala, Idoma, Edo, Esan, Ebira, Igbo, Ijo, Nupe, Gwagi were the Niger-Benue Confluence Region before migrating to their present abode (Obayemi, 1976). This region is noted for the presence of two big bodies of fresh water in Nigeria- Rivers Niger and Benue with their associated importance such as water supply, fishing activities, means of transportation and social contact exchanging political, economic and cultural ideas between various communities. With regards to the Igala for example, the Rivers Niger, Benue and Anambra are three important rivers that played instrumental role in the historical development of their kingdom. The relevance of these rivers could be seen in how they influenced settlement patterns, occupation and world view in the area. Indeed, the earliest Igala settlements were situated in proximity to the rivers, lakes and streams (Ukwedeh, 2003).

Ayegba Om’Idoko, the king who ruled Igalaland as early as the 17<sup>th</sup> century recognized the strategic significance of the River Niger to the economy and defence of the Igala Kingdom, thus, strategically devised means to ensure that part of the river that went through the Idah plains came under his effective control. In fact, Ukwedeh (2003) indicates that pre-colonial riverain power politics was more intense than the politics for the control of the inland borders. Apart from utilizing water for cooking, sanitation, washing, drinking by humans and animals even irrigation farming, it also played important role in certain aspects of craft production in the pre-colonial era such as in the processing of palm oil, local beer, to mention but a few. In the colonial era, the British were not only mindful about sanitation, but the importance of water to the Nigerian society and economy.

Water infrastructure were provided but these were not evenly distributed across the country. This turned out to be one of its limitations. For, it has been contested that the provision of infrastructure- modern sanitation, electricity, pipe borne water, paved roads, medical services and schools by the colonial government were concentrated in the towns while the rural dwellers were denied such privileges yet, they constituted the social engine and labour that produced the export crops which sustained the colonial economy. And, even the scanty facilities provided were meant to enhance the exploitation of our material resources (Rodney, 1972). Again, even within the towns and cities, the European Reservation Areas (current GRAs) were better stocked with water facilities and other modern infrastructure than the areas where indigenous peoples resided (Yunusa, 2001). The importance of the availability of safe potable water to the society and economy of post colonial Nigeria is a fact that cannot be overstressed. But this has become a challenge in recent time.

## **Challenges of Water Supply in Nigeria**

Access to water in Nigeria was 47% in 1990 but rose slightly to 54% in 2010 (The Free Encyclopaedia). The National Sanitation coverage for 2010 was just 32%. Recently, it has been estimated that only 58% of the masses have access to potable water, that is 87 million people, while 63 million are sidelined (Azubike, 2013). This varies from urban to rural communities as the latter is worse hit by the problem. Yet, The World Health Organization recommended 120 litres of water per person daily to meet domestic water utilization and function effectively. However, given the proliferation of the challenges of water supply, most people could not attain this.

In examining the preceding, it is pertinent to pose the following questions- why is there still water scarcity in Nigeria despite the huge sum of money that was claimed to have been sunk into the sector by successive regimes? Why is the country plagued with water challenges despite the various watersheds, rivers and springs it is endowed with? Should the problem of water scarcity be solely attributed to the factor of climate change? Should colonialism be blamed for the water challenges in Nigeria today? These are critical questions that demand answers and these will be unveiled in the course of the discourse.

## **Factors Militating against the Provision of Potable Water in Nigeria**

**Industrial and Urban Pollution:** The Niger Delta Region comprising Rivers, Bayelsa, Cross River, Delta, Edo, Akwa Ibom, Abia, Imo and Ondo States, has been plagued with environmental degradation impacting negatively not only on drinking water, water resources, vegetation, wild life but also on soil fertility. This was the devastating consequences of oil spillage and gas flaring in the region. Oil spillage has become a recurrent phenomenon in the area. The network of pipelines that transport crude oil to refineries transverse farmlands, water ways and fishing grounds and over time, some get eroded and burst. This, coupled with the unpatriotic activities like oil bunkering has increased the malaise. The studies conducted by Ukase (2009) indicates that between 1982 -1992, there was the spillage of over 1.6 million gallons of oil on the environment by Shell Petroleum alone. And, in contemporary times, the same company records 200 separate spillages per annum. He further shows that over 2,300 cubic meters of crude oil in 300 different incidents were spilled into the River from 1999 – 2004 by the oil companies (Ukase, 2009).

Indeed, the various Multi-National Oil Companies such as Mobil Oil (Exxon-Mobil), Chevron, Shell Petroleum Development Company and Agip operating in the region have not adequately succeeded in resuscitating the facilities including the sources of drinking water destroyed by their oil exploration. Thus, the masses are left to suffer from water scarcity. This is especially serious for the poor peasants who unlike the bourgeoisies could not afford continuous patronage of bottled water or other private commercial water providers to alleviate the problem caused by water shortages. Apart from oil spillage, gas flaring has also played its part in contaminating fresh water in the Niger Delta Region. About 1.8 billion standard cubic meters of gas produced in Nigeria is continuously being flared into the atmosphere daily (Emordi and Azelaman, 2009).

The implication of this is the occurrence of acid rains and the acidification of sources of fresh water rendering it unfit for human consumption. And it was this degradation of the environment that informed youth restiveness in the region and posed a serious challenge to national development in the 21<sup>st</sup> century, but for the Amnesty Programme. In addition to oil spillage and gas flaring, some sources of fresh water supply such as streams, rivers, and lakes have also been polluted through the emission of untreated industrial fluid waste and chemical substances into them. The role of fertilizer companies and other chemical industries in this respect cannot be over-emphasized. The National Fertilizer Company of Nigeria (NAFCON) for instance was noted to have contaminated River Kaduna in Northern Nigeria making it unsafe for human utilization and drinking for some time (Akpan, 2009). The following excerpt succinctly summarised the causes of water pollution.

*Water, which is considered the mainstay of any organic being, is highly threatened by pollution from various sources ranging from mild ones like sewage to dangerous contaminants such as fertilizers and pesticides. Spillages from oil and silts constitute major sources of water pollution. The pollutants clog the water ways and greatly deplete the amount of oxygen supply to aquatic beings.... agricultural runoff like silt and fertilizer causes the growth of a toxic form of algae called "Pfiesteria Piscida" which also diminishes the supply of oxygen to the water through a process called eutrophication (Onogwu, 2009. p.186).*

It is undoubtedly true that the effects of all these are not limited to aquatic beings but humans and animals as well since safe fresh water is a basic necessity to all. In addition, the generation of massive waste water by residents, preponderance of refuse dumps, toxic waste and open defecation in some areas to a considerable extent has played its role in contaminating fresh water.

**Infrastructure Decay:** Apart from the role of water contamination, infrastructure decay has also increased the challenges of water supply in some parts of Nigeria. Many water facilities are obsolete and in the state of total disrepair thus, remained cosmetic figures. There are many hand operated taps across the country which remained dry most of the time. Paradoxically, irregular water supply itself hastens the deterioration of water equipment. It is responsible for pipes damages, rust and leakages which further compounds the problem of water supply (Yunusa, 2001).

**Inadequate Power Supply:** Electricity supply is instrumental to adequate provision of potable water to the masses. However, with the erratic power supply being experienced by the urban and rural communities, this is a far cry. Research has shown that power generating capacity of Nigeria's power station is 5400 Megawatts (MW) but just 1, 600 (29%) MW was generated. It further demonstrated that 37,500 MW was required to meet global benchmark, but only less than 3000 MW was actually realized in the 4<sup>th</sup> and 1<sup>st</sup> quarter of 2007 and 2008 respectively. This indicates a per capita consumption rate of 27 kW/hr per person while the world per capita consumption was fixed at 2500 KW/hr per person (Mawali and Aminu, 2010). Diverse socio-economic activities including water generation and distribution are to a considerable extent dependent on sufficient power

supply the absence of which has adverse consequences for the nation. In a study on the water question in Zaria, Yunusa (2001) succinctly informs that the water plants requires a minimum of 22.4 hours of electricity supply per day. The public corporation that supplies electricity to the water plants and pump stations supplies only about 10 hours of electricity daily. The result is the gross under supply of water to the entire city as the water equipment lie idle.

**Under-Funding:** Funding, a critical factor to facilitate water supply is grossly inadequate. For instance, funds are required to be expended on the refurbishing or building of more laboratories for the implementation of water quality and control initiatives; for the establishment of Hydrometer Data Collection Centres and refurbishing the existing ones in conformity with World Meteorological Organization (WMO) Specifications; for the provision of Chlorine and Water Treatment Plants, Water Preservation and Storage Facilities (provision of over-head tanks, etc.); and Generating Sets, development of more Water Basins and Dams, motorized bore-holes, hand operated taps, and other related equipment. A closer examination of the Nigerian situation indicates that poor funding has resulted in infrastructure collapse in the water sector.

**Corruption:** It is also worthwhile to note that corruption in the award of water contracts has played an instrumental role in contributing to water scarcity plaguing most Nigerians today. The implication is increased water challenges and resources that would otherwise be utilized to boost the functionalities of other sectors of the economy are wasted and siphoned.

**Demographic Changes:** The astronomical rise in population is another formidable factor militating against adequate provision of water to the citizenry. Indeed, in the first decade after the attainment of political independence, the population of Nigeria could be viewed as moderate. However, the 1991 census result reported by the National Population Commission placed the Nigerian population at 88 million and the population census of 2006 presented the total estimate of over 140 million people. This shows that within 15 years after the 1991 census, our population soared with about 52 million people (Mamman, 1994). Currently, the Nigerian population is over 160 million.

Paradoxically, there has been noticeable proliferation of rural- urban migration in Nigeria due to increased urbanization which has its root after 1945. Migrations were influenced by the development of communication, railways, roads and water coupled with the atmosphere of commercialization and industrialization (Oyedele, 1995). According to Mamman (1994), the migration took the form of movement of people from the Southern part of the country to the North; from the North to the South; and from both the Southern and Northern parts to Central Nigerian Region with attendant concentration of people in the urban areas of Lagos, Kano – Zaria, Kaduna - Jos, Port Harcourt, Aba, Onitsha, Enugu, Ibadan, and other cities, with the ethnic composition of the migrants suggesting the preponderance of the Igbos, Yoruba and other ethnic extractions in the urban centres of the North and some Hausa migrants in the South. In explaining the causes of migration of people into these areas, Mamman (1994) remarks that it was stimulated by the oil boom

of the 1970s and the attendant construction boom for the provision of public works and services, private residential development, office and road construction coupled with the local government reforms of the 1970s and 1980s. Influx of migrants to the Middle Belt was caused by the transfer of Nigerian capital from Lagos to Abuja in the 1990s in addition to the erection of the Ajaokuta Iron and Steel Complex (Mamman, 1994). It is undoubtedly true that migration of peoples into areas distinct from their natural domicile assists in fostering national integration yet, increased population and urbanization have their challenges. The government is confronted with the task of rehabilitating, constructing and extending more infrastructural facilities including piped water to meet the needs of the populace. Another critical problem noticeable is that the development effort which ought to be based on equal opportunities for all its citizens has not been attained because as was the case in the colonial period, most of them are situated in the urban centres to the detriment of enormous rural areas. Indeed, studies have shown that, an average Nigerian is poorer today than in 1972 despite the over 300 billion dollars obtained from petroleum export from 1973 to 2000. The poverty rate is also on the increase and it is more critical in the rural areas with attendant lower access to public services and infrastructure like schools, health facilities, roads, water and electricity (Mbafor and Kinge, 2008).

#### **Attempts at Addressing the Water Question in Nigeria**

Between 1999 -2002, the Obasanjo Administration executed a number of projects in the various States of the federation in a bid to resuscitate water supply. A few examples are presented here. Lagos State in the South West, witnessed the drilling of boreholes in Ifako-Ijaye and Ise-Epe Local Government Areas in addition to the provision of water to Lagos East, West and Central Senatorial Districts. There was the execution of water project worth 13.6 billion Naira in Rivers State. These included the Otamiri water project in 9 local government areas of the State, in Port Harcourt and a host of others. In Benue State of North Central Nigeria, 618 million naira was expended on the water resources sector resulting in the construction of dams at Adoka, Ughoju, Igumade water works, the provision of bore-holes at Oju and Obi, water supply scheme in Gboko, Tarka, Makurdi, Naka, Aliade, Guma and Buruku including the Katsina-Ala River Project and other related issues. A similar gesture was carried out in Sokoto State situated in the North West part of the country. Bore holes were sunk in Bakolori, Dadin Mahe, Tidibale and Katani coupled with the rehabilitation of the Goronyo Dam to facilitate water supply to Sokoto, Argungu, Birnin Kebbi and other places.

In Bornu State in the North East, the Alau Dam Project and the Biu Water Project were revamped and completed. Boreholes were provided in Bayo, Shani, Kwaya, Chibok, Jere, Askira, Uba, Bama, Lawanti Gamboru Tungushe, Malam Madora, Marte, Mongono, etc. (Analysis Magazine, January, 2003). The water related projects so executed by the Federal Government was to supplement the role of the various State governments whose responsibility it is to ensure the flow of urban water supply in the 36 States of the federation. Subsequent regimes for example, the Umaru Yar' Adua administration also paid attention to the water resources sector which culminated in the dredging of the River Niger. On its part, the MDGs in Nigeria made available safe drinking water and improved health care

facilities to 26 million people between 2007 and 2009 (Mohammed, 2011). But a critical assessment of Nigerian population which is currently over 160 million indicates that much work is required to satisfy the thirst of several million persons in need of water in the country. Due to its population factor, the daily water need of Lagos for example, was fixed at 500 million gallons but what was provided by the State was barely over 200 million gallons a day which is obviously not up to half of what was required. Although, by 2010, the State government embarked on further construction of water works and power projects (Alao, 2011) the people of Lagos are still plagued with water scarcity.

Kaduna State with a population of over 7 million has been experiencing acute water shortage especially in the Zaria axis. The Kaduna State government purportedly sank several billion of naira to resuscitate water supply across the State; yet, most parts of Zaria are still confronted with the problem (Omeayo, 2010). With the persistent water problems in Zaria, in February 2011, some youths embarked on demonstration to express their dissatisfaction over the situation including the constant power failure in the area. This indicates the unbearable degree to which the water question has reached in Zaria that compelled the youths to openly protest (Liman, 2011).

The role of donor agencies should not be ignored. It was reported that the sum of 26 billion naira intervention grant was made to the Niger-Delta States of Bayelsa, Delta, Edo and Rivers by the European Union to be expended on water supply and sanitation services by 2012 in order to assist Nigeria on her millennium development goals on water by 2015. Even the oil companies that have degraded the ecosystem in the Niger Delta have been required to allocate 3% of their annual budget to the Niger Delta Development Commission saddled with the responsibility of ensuring the rejuvenation of the area (Akanmu, 2011 and Emordi and Azelaman, 2009).

In fact, it is pertinent to argue at this juncture that the whole question of water scarcity is paradoxical because Nigeria is endowed with sufficient bodies of water. For example, about 2/3 of the country lies in the watershed of the River Niger reputed to be one of Africa's longest and largest rivers in terms of its tributaries enjoyed by the people. Nigeria also has other rivers such as the Benue, Kaduna, Sokoto, and Anambra Rivers. There are also the Cross River, Ogun, Oshun and Osse Rivers and some of these rivers including the Niger and Benue Rivers eventually empty themselves into the Atlantic Ocean. In the North-eastern part of the Country Rivers like the Komadugu Gana also exists with its tributaries and these flows into the Lake Chad. The nation also has the Kainji Lake constructed since the 1960s (Wakdok, 2011).

However, in spite of the various rivers, lakes and dams Nigeria possesses which ought to be controlled to make sufficient water available for its citizenry and even surplus for export; they are plagued with water scarcity. This can partly be explained as the result of our behaviour over the years. Water has been wasted and sources of fresh water allowed running wild and currently, they are increasingly becoming dry. Even the River Basins established by the government since the 1970s with the aim of harnessing the nation's water resources and which by 2000 were further saddled with the task of providing water for domestic, farming and industrial use have not function effectively in that direction,



rather they diverted their attention to project execution thus, worsening people's plight of access to safe drinking water to date (Daily Trust Newspaper, March 7, 2011, p.32). This, however, is not to ignore the problem of climate change. Studies have demonstrated that between 1901 – 2005, Nigeria experienced increased temperatures by 1.1 Degree Celsius while the level of rainfall declined by 81mm. Surface water bodies are equally drying up. In fact, Lake Chad for example is shown to be currently 5.7% of its size in 1960. The aftermath of increased temperature is rise in sea level claiming 3400km square of Nigerian coastal region while about 1-10 km arable land is affected with desertification in the Northern region (Muanya, 2011). The contention here however, is that if the available water in the country is well harnessed, the risk of thirst will be reduced.

Undoubtedly, the Nigerian situation has not reached the case of Mexico, California, parts of Northern China, some African countries and especially the Middle Eastern Region where there is water related conflicts. In fact, the battle in search of water in some parts of the world is so fierce that Barlow and Clarke (2002) argue that bottled water companies like Nestle, Coca Cola and Pepsi are in the scramble for new sources of water supply to sustain their business conglomerates. And that this phenomenon is worsening as corporate interests are buying up lands and water systems and proceed in search of new sources of supply when they are depleted.

### **Consequences of Inadequate Water Supply in Nigeria**

In analysing the economic consequences of the increase in inadequate water supply, it is necessary to bring into focus how this malaise has induced the incidence of privatization and commercialization of water. As early as the 1980s, private water sellers were already noticeable in some parts of the country like Lagos and have reached crescendo in 2011. Thus, the proliferation of private bore-holes and wells including commercial water tankers, sachet water sellers, among many others (Ali, 2009). Companies involved in the commercialization of water have been noted with the following characteristics- huge profits, the fixing of higher prices for water, disconnection of customers who are unable to pay their bills consistently, absence of transparency in their operations, indulgence in water quality reduction, bribery and corruption and so on. This is so because their central interest is profit maximization. A far reaching economic consequence of water scarcity is that industries that are dependent on water as one of their inputs in the manufacturing of industrial goods could be incapacitated and where functional, the goods in question will be costly. The effect of this is worsened economic hardship for the populace.

Socially, water scarcity has a devastating impact on sanitation and personal hygiene. Apart from that, most people suffer from water borne diseases like cholera, diarrhoea, guinea worm, river blindness, skin diseases in their bid to utilize water from sources other than treated water. The World Health Organisation Report shows that, "everyday 3,900 children die as a result of dirty water or poor hygiene" Also, studies have indicated that, diseases transmitted via human faeces is the second top killer disease in the globe after respiratory diseases. In addition, the water problem is also connected with the 4 billion cases of diarrhoea culminating in the death of 1.7 billion people annually in the world

mostly children (Daily Trust Newspaper, March 7, 2011, p.32). This clearly suggests that, a lot is still needed to be done in the area of potable water supply worldwide and also across the country because “Health is Wealth”. The political implication of the challenges of water supply for any government, democratic or military is inducement of the impression of the absence of good governance, the denial of basic human rights, corruption and lack of accountability to the citizenry thus, the necessity for behavioural change on the part of the politicians to combat *albeit* effectively the water question in Nigeria. In fact, the United Nations predicted the possibility of water war in Nigeria by 2020, if the integrated water resources management and water efficiency strategy are not implemented (Daily Trust Newspaper, March 7, 2011, p.32).

Perhaps it can be averred that it was the attempt to avert water war in the country that necessitated the government’s relentless effort in trying to surmount the water question. Nwankwere (2012) has indicated that due to the need to improve water supply above 58%, the current administration, has financed and witnessed the completion of several water related projects in the country. For instance, in Edo State N2.5 billion was expended, Plateau (N1 billion), Benue (N2.2 billion) with support from the State Government, Rivers State (N830 million), Taraba (N263 million), Bayelsa (N4.7 billion), Borno (N8.5 billion) and Sokoto (N40 million). There was also the rehabilitation of the main 33 dams and 28 earth dams nationwide. Again, the attempt to improve electricity supply in the country also led to the integration of dam projects with small hydropower schemes.

## CONCLUSION AND RECOMMENDATIONS

This work has demonstrated that the water question currently constituting a challenge to sustainable socio-economic development in the country can be overcome when there is commitment on the part of government at all level. However, since the government has spent so much to tackle the problem of water across the country and the challenges still persist, we can conclude that corruption has been playing a greater role in undermining government effort at the provision of water infrastructure for the distribution of safe water to the masses. Indeed, we cannot blame colonialism for our problem because there is no evidence to show that the colonialists left with our water systems. Therefore, the following recommendations have been made for the sustainable revamping of the sector.

- i A National Water Protection Act for the reclamation and preservation of fresh water system in the country is necessary. The dredging of the River Niger by the Federal Government and the rehabilitation of the major 33 dams and 28 earth dams nationwide is quite commendable but more efforts need to be exerted in redirecting the water from these sources harnessing it for distribution to the populace while simultaneously sustaining the agricultural sector and other projects. In other words, there is the need for significant improvement in water production method and water shed management.
- ii The government should as a matter of policy ensure through adequate funding and monitoring, the revamping of the dilapidated water infrastructure across the country.

- iii There should be adequate electricity generation and supply. This is a critical factor in solving the water question in the country. Hence, the governments at all levels should not play politics with the issue of electricity.
- iv Emphasis should be placed on drip irrigation over flood irrigation as exemplified in the agricultural practices in some parts of the world especially Israel in the Middle East
- v Wealthy individuals should be encouraged to participate in the complementary roles played by the Federal, State and Local Governments including Donor Agencies in the attempt to tackle the water problem.
- vi Corruption in the award of water related projects should be drastically curtailed.
- vii. The activities of oil companies and other multi-national companies whose behaviours sometimes are detrimental to sources of water supply in the country should be checked and sanctions given where and when necessary. This will in its own way help check their excesses in this regard.

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