ASSIGNMENT PREPARED FOR MANAGING WATER ORGANIZATION 2012

THE CHALLENGES OF MANAGING WATER AND SANITATION ORGANIZATIONS IN NIGERIA

Submitted To:
Maarten Blokland (m.blokland@unesco-ihe.org
Paul Libaudiere (p.libaudiere@unesco-ihe.org
UNESCO-IHE, Delft, the Netherlands

Prepared By:
Peter Cookey - St No 34794; Locker # 305
Program: MSc ES EST AIT/IHE

TABLE OF CONTENT

1.0 INTRODUCTION

The major hindrance to improve access to water supply and sanitation in Nigeria is the ways and manner the water and sanitation organizations are manage right from the federal government level to the states and down to the local government areas. Nobody seems to get it right despite the huge investment profile of the governments in the sector.

The poor showing of Nigeria in the MDG targets for sanitation and drinking water supply hinges on getting the right coordination mechanisms amongst the various actors as well as poor management of these organizations. The challenge therefore, would be how to achieve the synergy between the levels of government to deliver sustainable drinking water supply and sanitation services to the people.

Water supply is a state responsibility in Nigeria and each of the 36 states and the Federal Capital Territory has created a State Water Board to exercise its authority. The State Water Boards are vested with the duty to provide service delivery in both urban and some semi-urban areas. The Federal Ministry of Water Resources (FMWR) is responsible for national and international aspects of water resources allocation and for approving large water resource development projects. Federal Ministry of Water Resources (FMWR) oversees the activities of the 12 River Basin Development Authorities. Also, the river basins have been describes as failures because of poor management of these organizations. The major challenges facing the 37 utilities responsible for urban water supply in the country are poor legal framework, governance, defective organizational structure and management systems, infrastructural challenge, poor financing mechanism etc.

Water and wastewater management especially in the urban centres of Nigeria is very worrisome. Wastewater is not properly managed at all in any part of the country. It is the responsibility of States to manage their wastewater. To address this issue they exist relevant states government agencies called different names in most state with the mandate of wastewater management e.g. Environmental Sanitation Agency, Environmental Protection Agency or Waste Management Authority. There are also several far reaching legislations to address these issues at various levels of government. There are no state capitals with any municipal wastewater management infrastructures.

Therefore, if we must improve access and increase coverage to water supply and sanitation in Nigeria, there must be a deliberate plan to improve the management of these organizations by putting in place performance based management system, introduction of benchmarking amongst utilities and gives the water and wastewater organizations financial and administrative autonomy with cost recovery mandates.

2.0 SUMMARY

The present poor drinking water services and sanitation problems have triggered the need to look for a better management strategy for the country's water and sanitation organizations. In order to suggest a feasible management options the study examines the current water, wastewater and sanitation management structures in the country. Findings indicate that the overall management of these organizations at the three tiers of governments (federal, states and local) is very poor and uncoordinated which have resulted in low level of water and sanitation coverage. To alleviate these problems the study recommends sector wide reforms with the aim of radical improvement in the management of these organizations. Other suggested improvement strategies includes: private sector participation, effective and reasonable tariff regime for effective cost recovery, improve political support and leadership commitment, introduction of benchmarking amongst the utilities to encourage healthy competition, strengthening of the legislative and institutional framework, that will enhance the autonomy of these organizations and finally but not the least to improve the issues of accountability, transparency and stakeholders involvement in the activities of these organizations.

3.0 SUBJECT 1: STATUS REPORT ON SANITATION AND DRINKING WATER SUPPLY IN NIGERIA

3.1 Introduction

Safe drinking water, sanitation and good hygiene are fundamental to health, survival, growth and development. However, these basic necessities are still a luxury for many of the world's poor people. The Millennium Development Goals (MDGs) has set countries of the world on a common course to push back poverty, inequality, hunger and illness (WHO/UNICEF 2006). Thus the tasks of reducing by half the proportion of people without sustainable access to safe drinking water and basic sanitation are becoming very challenging especially for developing counties.

However, over 2 billion people gained access to improved water sources from 1990 to 2010 and the proportion of the global population still using unimproved sources is estimated at only 11 percent (JMP 2012). Despite this major landmark achievement a great deal of work still remains to be done. Firstly, is the huge disparities that exist among regions of the world especially in the sub-Saharan African which only achieve 61 percent coverage for the period under-review and secondly, more than 780 million people remain unserved. Therefore, more than one tenth of the global population still relied on unimproved drinking water sources in 2010 (JMP 2010; 2012).

Globally, 63 percent of the population use improved sanitation facilities, an increase of almost 1.8 billion people since 1990. This mean that the world is within 10 percent of being 'on track' (JMP 2012). At current rates of progress, we will reach 67 percent coverage in 2015, better than previous projections but still far from the 75 percent needed to reach the targets (JMP 2012). Many countries are off track in meeting the MDG sanitation targets, including much of the sub-Saharan Africa and of the most populous countries in Asia. I have even heard said that, Nigeria will be the reason for the world not meeting the MDGs for sanitation and drinking water, because of her huge population and her level o coverage.

3.2 Status of Sanitation and Drinking Water in Nigeria

There is a serious constitutional challenge of meeting the sanitation and drinking water supply MDGs targets in Nigeria. This has to do with getting the right coordination mechanism for sustainable drinking water supply and sanitation service delivery in the country. The responsibilities of provision of water supply and sanitation is shared among the three tiers of government, federal, states and local government. Inter-states water resources regulations is the responsibility of the Federal government; water supply and sanitation service provisions are the responsibilities of the various States government and the Local Government Areas. Constitutionally, sanitation services are strictly the responsibilities of the Local Government Areas. The challenge therefore, is how to achieve a synergy and well coordinated mechanism between the levels of government to deliver sustainable drinking water supply and sanitation services to the people of Nigeria.

The other challenge is the actual delivering of safe and adequate drinking water to the people of Nigeria, which at the moment seems increasingly impossible. Basic sanitation services are worse off. The MDGs to halve those without water supply and sanitation services by 2015 is still a far dream for the Sub Sahara country with a population of over 158 million. The national access to sanitation and drinking water is 31% and 58% respectively (JMP, 2012). The sector goal is to meet the MDG targets of 65% and 75% for sanitation and water respectively.

In fact, trend analysis of water supply coverage from the year 1990 to 2006 revealed a declining total coverage, which if unchecked, will result in a total coverage of 50.2% in 2015 and 42% by the year 2020: far off the 75% and 100% the MDGs and Vision 20:2020 targets, respectively (Vision 2020). Also trend

analysis for sanitation coverage revealed the same decline for the period under-review, if unchecked will result in a very poor result of 42% by 2015 and 39.9% in 2020; which is also short of the MDGs and Vision 20:2020 targets of 63% and 100%, respectively.

Table 1: Shows the JMP-estimated proportion of the population using improved sanitation facilities 2012 update:

Year	Improved	Shared	Other Unimproved	Open Defecation
1990	37%	26%	12%	25%
1995	36%	26%	14%	24%
2000	34%	26%	17%	23%
2005	32%	26%	20%	22%
2010	31%	25%	22%	20%

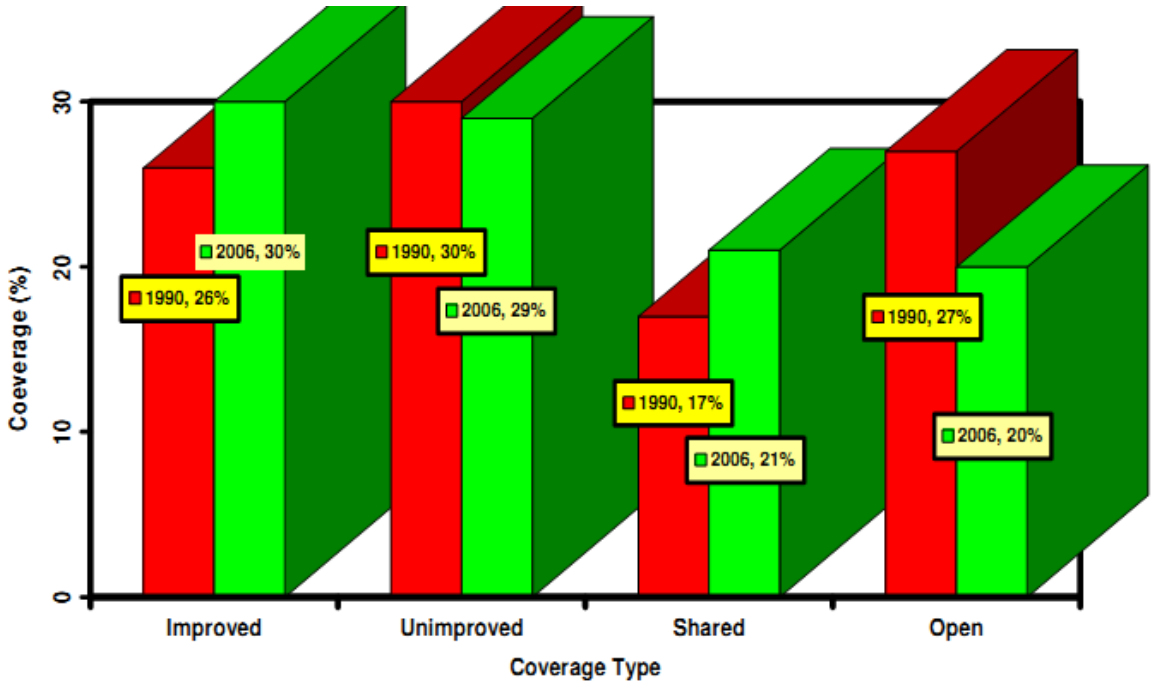

Figure 1: Total Sanitation Coverage for Nigeria (1990 and 2006)
Source: Vision 2020 Water and Sanitation Sectoral Report

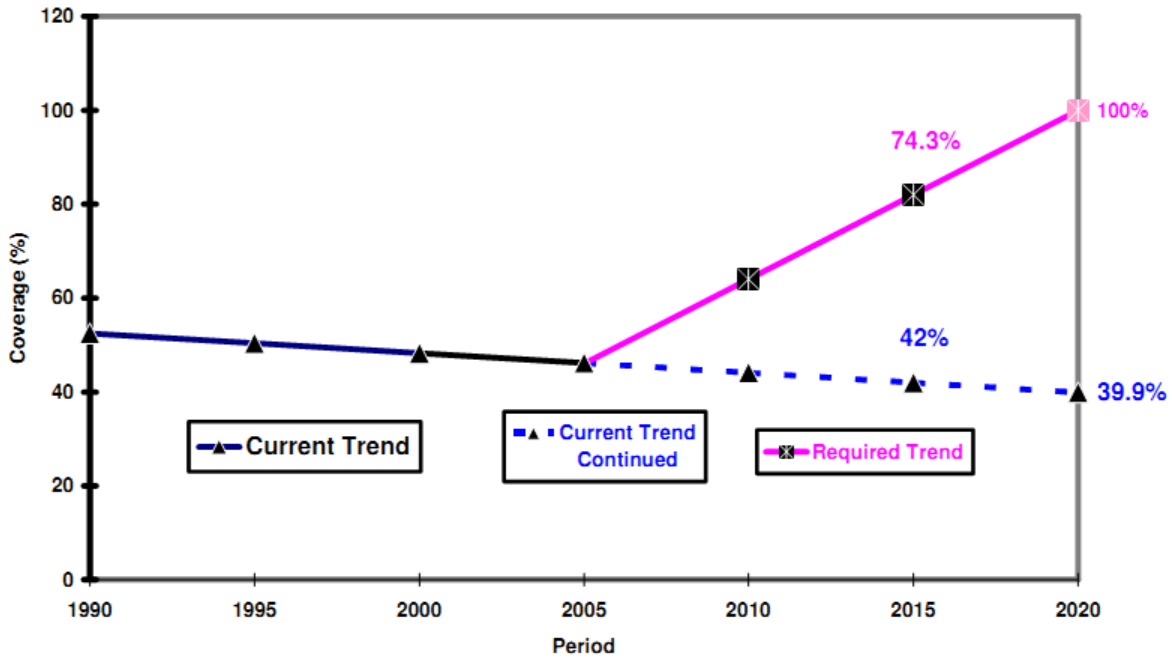

Figure 2: Trends in Nigeria's Sanitation Coverage (1990 to 2020)
Source: Vision 2020 Water and Sanitation Sectoral Report

Table 2: the JMP-estimated proportion of the population using improved drinking water sources 2012 update:

Year	Total Improved	Piped onto Premises	Other Improved	Other Unimproved	Surface Water
1990	47%	14%	33%	25%	28%
1995	50%	12%	38%	26%	24%
2000	53%	10%	43%	27%	20%
2005	57%	8%	49%	26%	17%
2010	58%	4%	54%	28%	14%

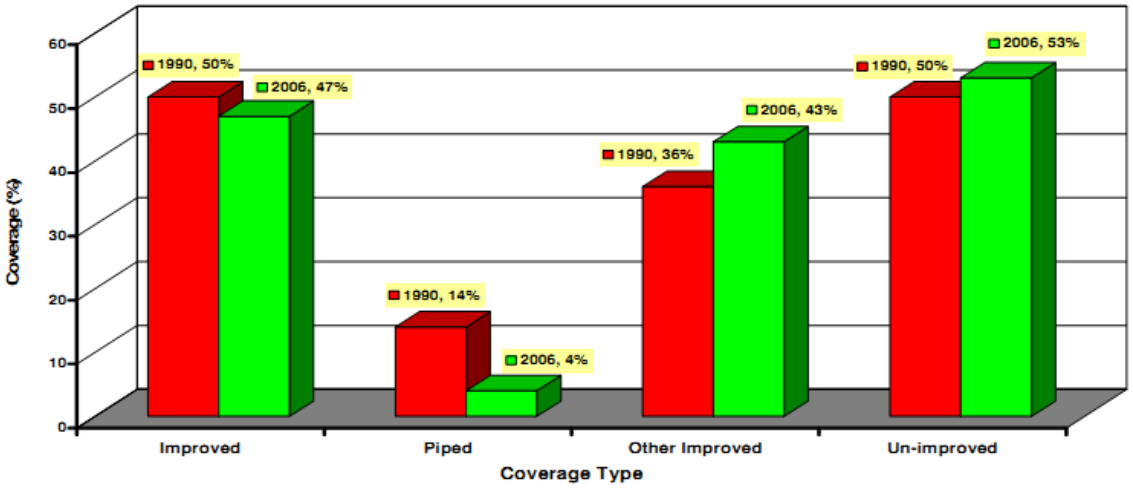

Figure 3: Total Water Supply Coverage for Nigeria (1990 and 2006)
Source: Vision 2020 Water and Sanitation Sectoral Report

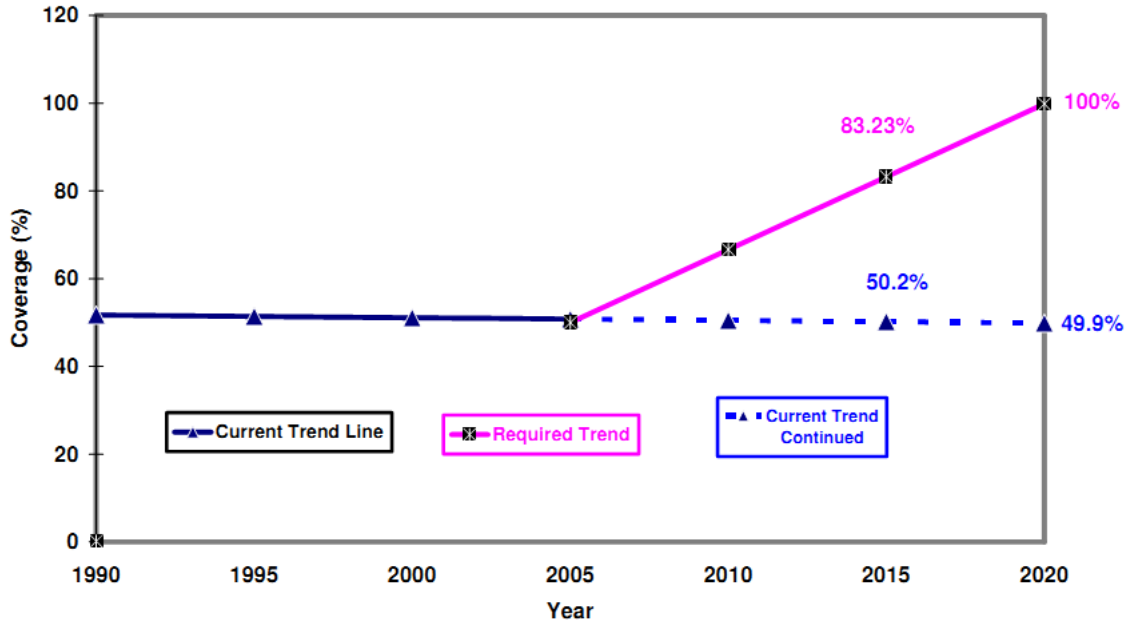

Figure 4: Projected Trends in Nigerian Improved Water Supply (1990 to 2020)
Source: Vision 2020 Water and Sanitation Sectoral Report

The reasons for fluctuation in access to drinking water and sanitation coverage is basically due to inadequate institutional arrangement, lack of proper management of the nations water resources, poor data collection, collation and archiving, poor community and private sector participation, epileptic power supply and inadequate awareness on issues of water conversation and management, weak management and executive capacity and low investment level in operation and maintenance. (Vision 2020).

The potential negative impact of these declining water supply and sanitation scenarios on the well being and productivity of Nigerians is obvious and worrisome. It is therefore, necessary for Nigeria to rehabilitate, upgrade and expand its water supply and sanitation facilities in order to meet its MDGs and Vision 20:2020 targets for improved water supply and sanitation coverage.

3.3 Learning Points and the Way Forward

The key learning points for which Nigeria can benefit from the reviews of these global JMPs and GLAAS reports include but not limited to:

I. Articulation of water supply and sanitation policy which focuses on the weak and most vulnerable in the society
II. Working our modalities that will give local government councils greater roles in the provision of water supply and sanitation facilities and services with adequate financial support and effective monitoring mechanism.
III. Reform the management, operations and maintenance of water supply and sanitation schemes and services
IV. Establishment of effective Public Private Partnership for the provision of water supply and sanitation services and infrastructure
V. Development of reasonable tariff regime that will facilitate cost recovery for sustainability; and
VI. Develop a robust and effective operations and maintenance programme to ensure sustained water supply and sanitation services.

3.4 Relevance/Conclusion

In conclusion, the whole issues of water supply and sanitation is increasing relevance in national development, this is because the difference between developed and developing countries can be seen in their proper management of their water resources. Agriculture and food security are critically dependent on water resources utilizations. The more water supply access people have as well as the quality of the sanitation facilities available the higher the quality of life of the people and the higher potential for poverty alleviation.

4.0 SUBJECT 2: CHALLENGES IN WATER UTILITY MANAGEMENT IN RIVERS STATE, NIGERIA

4.1 Introduction

Systematic development of water supply and management in Nigeria dates back to the colonial times. The colonial administration developed domestics' water supply as part of overall programme to improve the level of personal hygiene and environmental sanitation throughout the country. Unfortunately, as noted by Oyebande (1977), the priority accorded domestic water supply by colonial administration has not been sustained by post independence governments of the country. (Gbadegesin et al 2007).

Institutional arrangement for the water supply sector in Nigeria can be observed to be in two levels which are water resources management and control function perform by the Federal Ministries of Water Resources and their ancillary agencies and service provision functions perform by the various State Government, through their State Water Boards/Utilities. Therefore, in Nigeria there are 37 State Water Boards/Utilities (SWB) one for each of the 36 States and one in the Federal Capital Territory. These utilities are established by the respective state's water laws. In most of the states, they are under the supervision of one State ministry of water resources or works (Ajisegiri 2004).

Therefore, for the purpose of this paper, I shall focus on the Rivers State Water Board (RSWB), under the supervision of the Rivers State Ministry of Water Resources and Rural Development, which is my state water utility because it will be very impossible to discuses all the 37 urban water utilities in Nigeria under this paper.

4.2 Status of the Rivers State Water Board

The Rivers State Water Board (RSWB) is the focal agency of Rivers State government to deliver water supply to the people. The Board was established through the Rivers State Government Law No. 10 of 1991 which took retrospective effect from 13th of July 1989. The functions of the Board includes; establish and manage all water undertakings in the state, supply water to the public for drinking, domestic, industrial, commercial and other purposes, establish, operate and control sewerage system in the state, prepare master plans, necessary for the development and maintenance of its undertakings, construct, reconstruct, operate and maintain waterworks, water stations, buildings and other works necessary for the discharge of its functions and conduct researches relative to water supply, sewerage disposal and connected subjects.

The water reticulation in the city of Port Harcourt, which is the state capital of Rivers State was designed and constructed during the colonial period of the very early 1950's with no maintenance or upgrading of the network being done to cater for the rapid expansion of the city. Currently, no metering of domestic customers in the state only the industrial customer are being metered, although many of them have already constructed their own private borehole from which they obtain water (Greater Port Harcourt Water Resources Master Plan 2008).

The major challenges facing RSWB are as follows: poor legal framework, governance, defective organizational structure, no constituted Board of Directors, No Substantive General Manager appointed the board is headed by the most senior officer and is seconded from the civil service, very poor scope and coverage: infrastructural challenge: poor financing mechanism and No Capacity Development programme**.**

4.3 Benchmarking National Water and Sewage Corporation (NWSC), Uganda and the Rivers State Water Board (RSWB), Nigeria

A thorough assessment of the performance indicators of NWSC, Uganda from the lecture materials with that of the RSWB shows that RSWB still has a long way to go in all ramifications. Therefore, one have a good lesson to learn from the case studies that was presented during the class. Table 3: Shows Performance Disparities between NWSC and RSWB.

Table 3: Shows Performance Disparities between NWSC and RSWB

S/No	Parameters	NWSC-Uganda	RSWB
1	Population Serves	4 million	5 million
2	Legislation Framework	Adequate	Inadequate
3	Infrastructure	Sound infrastructures	Poor infrastructure
4	Billing System	Sound billing system	Poor or total absence of billing system
5	Human Resources	Well trained workforce	Poorly trained workforce
6	Drivers for Change	Pressures from government and development partners	No pressures from government and development partners because nobody want to invest into under-performing utility
7	Strategic Level Planning/Transformation	New board and management installed in 1998 to turn around NWSC/have strategic level planning	No board, general manager selected from civil service/have no strategic level planning
8	Operational Level Transformation	NWSC transformed within 100 days program	No operational transformation
9	Stakeholders Support	Presence	Absence
10	Revenue Collection	Very sound and successful	Absence and very poor
11	Donor Attractiveness	Very high	Absence

4.4 Learning Points and the Way Forward

The key learning points for the RSWB is situated in the success factors of NWSC that was able to turn around an under-performing utility to a super-performing organization. Some of the success factors include but not limited to:

I. Political support through regular reform updates and demonstration of performance progress
II. Leadership commitment to setting up good governance framework to curb corruption and political interference
III. Autonomy which enhances the arms-length of management through cascading performance contract
IV. Incentives which help drives performance through a combination of financial and emotional incentives
V. Accountability which enhances accounting through strong reporting, feedback and monitoring and evaluation framework.

4.5 Relevance/Conclusion

The relevant of this presentation to my Rivers State in particular and Nigeria in general is the strategies that was adopted by NWSC to turnaround her performance through emphasis on customer and service for all customer categories; change from a bureaucratic to an entrepreneurial organization and culture and the use of external and internal contracts to increase performance and accountability.

In conclusion, the change programmes can be successful and sustainable only if: it is well planned, involvement of key stakeholders at all levels, strong leadership, political support, accountability mechanisms, provision of managerial incentives and very importantly autonomy in decision making.

5.0 SUBJECT 3: WATER AND WASTEWATER MANAGEMENT IN THE NETHERLANDS LESSON FOR NIGERIA

5.1 Introduction

The right amount of water for users, at the right time, in the right place and at socially acceptable costs is one of the key targets of government of the Netherlands (Ministry of Infrastructure and Environment 2011). There is a clear delineation of functions between the national, provincial and municipalities' in the area of water management in the Netherlands. Water management in the Netherlands is a complicated issue; also water distribution throughout the country is far from straightforward because the management of water and wastewater in country cannot be separated from its history.

Living on the edge of land and water has offer a lot of advantage to this great country, making them one of the best managers of water resources in the world. It is therefore not surprising that in the 13th century, people with common interests in safe water management formed cooperatives, resulting in the first water boards. Their cooperation not only involved working together, it also implied participation in governance, which makes water boards the oldest form of democratic government in the Netherlands. The water board Hoogheemraadschap van Rijnland, established in 1232, is the oldest water authority that is still functioning today. There used to be several hundred water boards, but in the last century, their number has been reduced considerably to 26 responsible for regional surface water and sewage treatment; 467 municipalities responsible for sewers and groundwater and the 17drinking water companies publicly owned private companies responsible for drinking water (Ministry of Infrastructure and Environment 2011). In 1798, a centralized water management on a national level was established. This agency was name Public Works and Water Management which comprises a president, an assistant and draughtsman.

In 2007, the government published its vision on water policy, entitled 'Reclaiming the Netherlands from the Future', in the Water Vision, the cabinet states its intention to expand its ambitions in the field of national water policy and to strive for sustainable water management. This laid down the basis for the establishment of the second Delta Committee, whose task it was to issue recommendations on water policy for the coming century and even beyond.

The offshoot of the water policy is the Water Act of 2009 which contains provisions for the management of the water systems. The Water Act has integrated eight previous sectoral water acts of the Netherlands. The Water Act highlights integrated water management based on the 'water system approach' addressing all cycles of water and wastewater management.

The major provisions of the Water Act is the new requirement for water systems, obligations of water authorities to meet a number of important water quality requirements, it also empowers the water authorities to enter into water agreement with other authorities on water management. The Act only acknowledges two water authorities, the State as authorities for the main water ways and the water boards as the authorities for the regional waterways. The latter are also responsible for wastewater treatment. Provinces and municipalities do not act as water management authorities, though they do have certain tasks in water management.

The Provinces supervise regional water authorities and municipalities and, if necessary, they may issue instructions or guidance, also the Act contains provisions on levies such as charges, legal fees, subsidies, compensation and recovery of costs. It provides the bases for the pollution charge and groundwater charge as well as collection of revenues from the users. The Water Authorities pay for their expenses incurred from the provision of the Water Boards Act and Municipalities pay for their water related responsibilities from the municipal water charge, which is laid down in the Municipalities Act. *The beauty of the Netherlands system of water and wastewater management is that nothing is left for speculation, things are properly defined to the later and every organizations is living to their responsibilities as against Nigeria where things are not properly defined hence the confusion and total lack of coordinations in the management of water and wastewater.*

5.2 Situation in my country

Public water supply in Nigeria started in the early 20th century in only a few towns and was managed at the lowest administrative level. Amongst the early beneficiaries were Lagos, Calabar, Kano, Ibadan, Abeokuta, Ijebu Ode and Enugu. The schemes were maintained with revenue from water sales with virtually no operational subvention from the government (FGN, 2000). With the creation of regional governments in the early 1950s, the financial and technical responsibilities for developing new water schemes were taken over by these regional governments who assigned supervisory manpower to oversea operations and maintenance. The first water corporation was formed in the western region in 1966 which took over all the assets and liabilities, including existing staff (Ishaku et al 2011).

The Federal Government got involved in the management of water resources in 1976 when the Federal Ministry of Water Resources and the 12 River Basin Authorities (RBDAs) were created. The purpose of RBDAs was to provide bulk water, primarily for irrigation purposes to farmers. There are not involved in any way in the domestic water supply. There are a total of 37 water utilities in Nigeria, one for each state and the Federal Capital Territory, Abuja. The mandate for these water utilities includes the provisions of wastewater collections (sewerage systems) and wastewater treatment. The aspect of wastewater management is totally left unattended to.

A developing country like Nigeria has made and is still making frantic efforts to confront the challenges of water and wastewater management with almost no success. All the urban centres in the country have unrestricted access of wastewater on the streets and all surface waters and drains have become open sewer; despite the presence of numerous federal and states agencies with the mandates to manage wastewater, environment and sanitation related issues. There are also several far reaching legislations to manage water and wastewater at all levels of government. Yet the country seems not to be making any head way.

A staggering 80-90 percent of all wastewater generated in developing countries is discharged directly into surface water (UN Water, 2008). The story is not different in Nigeria, because more than 95% of all

industries in Nigeria directly discharge their wastewater to fresh and salt water bodies depending on where they are located. Only a handful of business establishments have a semblance of ornamental wastewater treatment systems which produce poor effluents quality. The problem is further compounded by the fact that no city in Nigeria with her large population has provision for central sewage treatment systems or any effective off-site facilities to management sewage. Sewage sludges are disposed directly into the water bodies from septic tanks. UNEP (2004) noted that poor water supply and sanitation causes negative effect on human health and also on livelihoods of people and the natural environment with its various uses and functions. The health consequences of the service shortfalls are enormous and are suffered by the urban poor.

5.3 Learning Points and the Way Forward

There are a lot of lessons for Nigeria on how the Netherlands manages water and wastewater issues. Some of these lessons are:

I. The system of shared responsibilities between different levels of government in the management of water and wastewater
II. Proper definitions of roles between various actors, with enough autonomy and financial accountability and responsibilities
III. The strategic and innovative application of the polluters pays principles which have encourage the industrial establishment to put in place wastewater treatment system as well as encouraging individual systems for remote household for which connection to the sewer is too expensive.
IV. Well articulate legislatives, institutional framework and management systems design to function and deliver services to the people.
V. High level of cost recovery.

5.4 Relevance/Conclusion

The relevant of this presentation to my country cannot be over-emphasized and can also help to clear the grey areas of water and wastewater management in Nigeria.

6.0 SUBJECT 4: SCALE AND SCOPE OF OPERATIONS OF RIVER BASINS IN NIGERIA

6.1 Introduction

The idea of integrated management of land and water resources or the river basin as the most appropriate management unit is not new, but it is only in recent times that it has becomes an internationally accepted principle. The concept of river basin originally referred to as drainage basin, represents a system of interconnected system of water tributaries that flow towards a single outlet. It combines the natural processes of precipitation, evapotranspiriation, surface and ground water runoff with man-made features such as dams and reservoirs and hydro-power projects, diversions and irrigation schemes, industrial and residential water and environmental cultural protection services (Adeoti, 2010). In Nigeria the concept of river basin gain ground in the early 60's when two basin commissions were established namely: River Niger and Lake Chad Basins Commissions.

6.2 Organizations, Structures and Functions of River Basins

The realization of the importance of adequate water management was responsible for the establishment of the River Basin Development Authorities (RBDAs). The first basins in Nigeria were the establishment of River Niger and Lake Chad Basin Commissions during the first National Development Plan period (1962 - 1968). The number was increased to 11 in 1976 to cover the whole country and in 1984, the RBDAs were increased to 18 and renamed River Basin and Rural Development Authorities (RBRDAs). In 1985, however, they were scaled down to twelves and retained the name River Basin Development Authorities (RBDAs) (Eludoyin et al, 2007); the river basin development authorities are:

I. Anambra-Imo River Basin Development Authority
II. Benin Owena River Basin Development Authority
III. Chad River Basin Development Authority
IV. Cross River Basin Development Authority
V. Hadejia-Jama'are River Basin Development Authority
VI. Lower Benue River Basin Development Authority
VII. Lower Niger River Basin Development Authority
VIII. Niger Delta Basin Authority
IX. Ogun-Osun River Basin Development Authority
X. Upper Benue River Basin Development Authority
XI. Upper Niger River Basin Development Authority
XII. Sokoto-Rima River Basin Development Authority

All RBDAs are an agency of the Federal Government supervised by the Federal Ministry of Water Resources. They operates under board of directors consisting of a chairman and seven members. The board formulates board policies, guidelines and programmes in keeping with government objectives. The Managing Director execute and the day to day running of the organization and is also a member of the board. The departments of the authorities a responsible for the effective implementations of the programmes of the organization, there is also a management committee which comprises the top management team of the organization and are responsible for the management decisions of the RBDAs.

The range of functions laid down for the RBDAs in 1976 was extraordinarily wide. They encompassed irrigation, flood control, watershed management, pollution control, fisheries and navigation as well as activities remote from water resources, such as seed multiplication, livestock breeding and food processing. Their remit also covered a number of activities to be shared by State government's agencies, such as the provision of agricultural services and rural electrification (Akanmu, 2007). In practice RBDAs have not being able to realize these functions.

6.3 Challenges and Constraints of River Basins

Professionals believe that the failure of the RBDAs in Nigeria is partly responsible for the country's inabilities to achieve the MDGs. RBDAs has come to be described simply as a failures; they exit, quite literally, as sinking bore holes where billions of naira (Nigerian Currency) are annually dumped with little results and are generally spoken of as fraudulent excuses to siphon revenue (Akpe, 2010). The present legislation that establishes the river basins lack provisions for the participation of various stakeholders, hence their lack of accountability and transparency in their operations.

Besides, RBDAs are known for their characteristics ways of always abandoned projects in the country. For instance; Gindiri regional water treatment plant abandoned over five years ago: a project

conceptualized in 1999 to facilitate water supply to some part of Bauchi State; the Kashimbilla Dam Project in Taraba State expected to serve Taraba, Benue and Cross River State has being abandoned for over three years. In fact the Rivers State Governor Rotimi Amaechi said recently that all the Federal Government projects in the state under the Niger Delta Basin Development Authority (NDBDA) have failed, adding that there were more abandoned projects than there was water. Ebonyi State Deputy Governor, Chigozie Ogbu, told the Senate Committee that the Federal Government water projects in the state under the Imo-Anambra River Basin Development Authority (IARBDA) have not contributed to the water needs of the people (Akpe, 2010).

According to the management of the Cross River Basin Development Authority, the major Constraints to the sustainable development of the River Basins come under the following:

I. Poor revenue base of the authority resulting from insufficient development of its water resources potentials
II. Inadequate budget provision for irrigation projects. The result is that it takes more than 10 years to complete a small irrigation scheme.
III. Frequent changes in government policies and management structure
IV. Untimely release of appropriate funds and lack of cost recovery
V. Vandalisation of project components by thieves.
VI. Inability of communities to operate completed and handed over projects due to high cost of operation and maintenance.
VII. Old and unreliable fleet of plant, machinery and equipment and difficulty in replacing the obsolete ones easily due to high cost.

6.4 Learning Points and the Way Forward

The major learning points from this aspect of the lectures are:

I. Review the structures, scale, scope and operations of the current river basins in the country
II. Address the issues of accountability, transparency and financial autonomy of these river basins
III. Address the issues of cost recovery and abandoned projects scattered within the nooks and crannies of the country
IV. Address the issue of stakeholders' involvement in the basins activities.

6.5 Relevance/Conclusion

The scale and scope of river basin organization highlights major challenges in water management which are: access to clean drinking water and sanitation; environmental concern and pollution prevention; food production- sufficient water for a growing population and cross-cutting issues of global climate change, governance and conflict management. These issues are critical success factor on the performance of river basins in Nigeria. Stakeholders have blamed the failing of the basins for Nigeria's inability to achieve the MDG of reducing hunger by 50 percent come 2015. The change to promote year round agriculture activities remains a dream despite the nation's wealth in arable lands, water and river basins resources to propel this objectives. Therefore, if we must meet the MDGs targets for water and sanitation and reduction of hunger, the way and manner our river basins are manager as well as the scope and scale must be properly addressed.

7.0 REFERENCE

Subject 1

Blokland M., (2012): Progress on Sanitation and Drinking Water (JMP), Lectures Notes

Nigeria Vision 2020 Program (2009): Report of the Water and Sanitation National Technical Working Group. Published by National Planning Commission, Abuja, Nigeria.

Nigeria Country Profile (2012): Prepared for the 2012 Sanitation and Water for All High Level Meeting. Organized by World Bank and UNICEF, Washington DC

WHO/UNICEF (2012): Joint Monitoring Programme for Water Supply and Sanitation; Nigeria Estimates for the Use of Improved Sanitation Facilities. www.wssinfo.org.

WHO/UNICEF (2012): Joint Monitoring Programme for Water Supply and Sanitation; Nigeria Estimates for the Use of Improved Drinking-Water Sources. www.wssinfo.org.

WHO/UNICEF (2006) : Meeting the MDG Drinking Water and Sanitation Targets: The Urban and Rural Challenge of the Decade

UNICEF (2010): 2010 Update Progress on Drinking Water and Sanitation. Published by WHO and UNICEF

UNICEF (2012): 2012 Update Progress on Drinking Water and Sanitation. Published by WHO and UNICEF

Subject 2

Blokland M., (2012): Challenges in Water Utility Management: The Turn Around of NWSC-Uganda, Lectures Notes

Ajisegiri, B. A, (2004): Reform Framework for Improving Institutional Environment for the Water Supply Sector of Nigeria. Water-MBA Thesis, UNESCO-IHE

Blokland M., (2012): Challenges in Water Utility Management the Turnaround of NWSC - Uganda. Lecture Note based on presentation by Dr. Muhairwe, former MD, NWSC

Greater Port Harcourt Harcourt City Development Water Resources Master Plan 2007

Gbadaegesin N., and Olorunfemi, F., (2007): Assessment of Rural Water Supply Management in Selectd Rural Areas of Oyo State, Nigeria. Published by the African Technology Policy Studies Network, Nairobi, Kenya.

Oyebande, B. L. (1977): An Inventory of Water Resources Development in Nigeria. Federal Ministry of Water Resources, Lagos.

Subject 3

Blokland M., (2012): Water and Wastewater in the Netherlands, Lectures Notes

Adeoti, O. (2010): Development of River Basin Organizations in Nigeria. Research Journal of Soil and Water Management. Vol. 1; Issue 3; 91-100.

Richard Helmer and Ivanildo Hespanhol (1997) (ed.): Water Pollution Control - A Guide to the Use of Water Quality Management Principles. P*ublished on behalf of the* UNEP, WSSCC, WHO, by E. & F

UNEP and UN-HABITAT (2010): Sick Water? The Central Role of Wastewater Management in Sustainable Development. Ed. By Corcoran, E., Nellemann, C., Baker, E., Bos R., Osborn D., and Savelli, H. Printed by Birkeland Trykkeri AS, Norway.

UNEP (2004): Financing Wastewater Collection and Treatment in Relation to the Millennium Development Goal and World Summit on Sustainable Development Targets on Water and Sanitation. UNEP/GPA, The Hague, The Netherlands.

UN Water. 2008. Tackling a global crisis: International Year of Sanitation 2008. http://www.wsscc.org/fileadmin/files/pdf/publication/IYS_2008_-_tackling_a_global_crisis.pdf (Accessed February 2010)

World Bank. 1992. Governance and development. World Bank, Washington, DC, USA. The International Development Research Centre (IDRC) The full catalogue is available at http://archive.idrc.ca/books/index.html.

Ishaku, H. T., Rafee Majid, M., Ajayi, A. P., Haruna, A., (2011) Water Supply Dilemma in Nigerian Rural Communities: Looking towards the Sky for an Answer. Journal of Water Resources and Protection, 3, 598-606. http://www.SciRP.org/journal/jwarp.

FGN (2000): Federal Ministry of Water Resources. http://www.uneca.org/awich/NigerianReport.

Ministry of Infrastructure and the Environment, the Netherlands (2011): Water Management in the Netherlands.

Subject 4

Douven W., (2012): Scale and Scope of River Basin Organizations. Lecture Note

Mostert E., (2012): Mandate and Structure of River Basin Organizations: The Example of the Dutch Water Boards. Lecture Note.

Adeoti, O. (2010): Development of River Basin Organizations in Nigeria. Research Journal of Soil and Water Management. Vol. 1; Issue 3; 91-100.

Akpe Ameto (2010): River Basin Projects Threatened by Corruption and Incompetence. Published on Business Day Newspaper, Thursday 17th June 2010. www.businessdayonline.com

Akanmu, J. O., (2007): Chronicles of River Basin Management in Nigeria. Paper presented at the International Congress on River Basin Management.

Eludoyin, A O., Akinbode, O. M., and Ediang, O.A., (2007): Challenges of River Basin Information System (RBIS) as a Framework for the Assessment and Monitoring of Surface Water in Nigeria. Paper presented at the International Symposum on New Direction in Urban Water Management. UNESCO, Paris.