



Technische  
Universität  
Braunschweig

Member Partner of



International Network on  
Sustainable Water Management  
in Developing Countries

CONTRACT

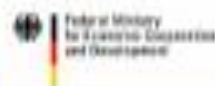
## Water Perspectives in Emerging Countries Modern and Traditional Methods of Water Resource Management in Africa

Stephen O. Ojwach, Precious N. Mhlangi,  
Chrispin Kowenje, Gnon Baba (Eds.)

May 5-9, 2019 – Durban, South Africa



Funded by:



DAAD

## **AN ASSESSMENT OF PUBLIC WATER FACILITIES IN RURAL AREAS OF OYO STATE, NIGERIA**

**T.A. Oluwaleye, J.O. Oladeji**

*Department of Agricultural Extension and Rural Development, University of Ibadan, Oyo State,  
Nigeria; P.O. Box 18745 Dugbe Post Office Ibadan.*

[masterpiecedwordgallery@gmail.com](mailto:masterpiecedwordgallery@gmail.com); [loisdaddy@yahoo.com](mailto:loisdaddy@yahoo.com)

**Keywords:** Water Access, Availability, Complementary, Conditions, Rural Areas

### **Abstract**

This study investigates public water facilities in Rural Areas of Oyo State. Multistage sampling was used to select 144 respondents from 3 Rural Local Governments in Oyo State. The availability, conditions, access, frequency of use of public water facilities, the extent, to which public water facilities aid the use of other infrastructural facilities, and constraints limiting the use of public water facilities were measured with structured interview schedule guides. Data collected were described using frequency counts, percentages, means and illustrative data representations. The study revealed that, while public water facilities were available to most of the respondents, there were wide gaps in the access to these facilities and the extent of use of the water facilities. Furthermore, less than half of the respondents had their public water facilities in good working condition. 87.5 % of respondents adjudged public water to aid and complement the use of health facilities, making health facilities the highest ranked infrastructural facility that cannot function without accessible water. The study revealed that irregular access of respondents to water facilities was due to its far distance from their homes, amongst other constraints. The study recommends that women, who are the primary users of these facilities, should be involved in the planning process of setting up these facilities especially in deciding strategic locations. Furthermore, single infrastructural facilities should not be provided in isolation, other facilities that will aid its use should be put in place.

### **1 Introduction**

Water is essentially crucial to life and living, both plants and animals depend on water for life, daily living activities like hygiene, food production and ingestion are impossible without water. The importance and necessity of water makes one expect it to be abundant to all regardless of race, class or gender. This is, however, not the case as portable water from improved sources is not evenly distributed.

The state of water supply and sanitation access worldwide is alarming according to WHO/UNICEF, in 2000, 1.1 billion people lacked access to improved water supply, and 2.4 billion to adequate sanitation, more located in rural than urban areas [1]. Although millions of people in developing countries are faced with acute water stress from inadequate supplies the rural areas are the worst hit [2]. Ranking infrastructural needs in Rural communities the Federal Ministry of Water Resources [3] identified the major problems constraining the productivity of the rural households of Nigeria, ranked water as the first need – water (77%), electricity (53%), poverty (46%), healthcare (40%), roads (26%), fertilizers and education (22% respectively) and latrines (19%).

In order to ameliorate this statistics in Nigeria various states and local governments have embarked on projects to make improved water sources available. One of such is the Oyo State Rural Water Supply and Sanitation Agency (RUWASSA), which is a special UNICEF intervention to selected states in Nigeria. This intervention and several others have provided public water facilities to many communities in the country. This provision by various government agencies makes water facilities to be available in most communities in Oyo state, Nigeria.

However, one of the official Millennium Development Goals (MDG) indicators for measuring access to safe sources of drinking water and basic sanitation goes beyond availability of the necessary water facility but the “proportion of the population that uses an improved drinking water source” [4]. Studies have revealed that existence of public water facilities does not necessarily translate to frequent use. [2] stated that rural boreholes and water pumps have no water, rural water scheme/projects are deserted. The only visible things in the rural areas are the sign posts that show the location, direction, and physical status of these rural infrastructures. It is important to stress that it is not enough for facilities of development to be put in place; it is more than enough for these facilities to adequately and properly maintained so that the purpose, for which they are meant, would be accomplished [5].

Availability of water facilities is having the necessary structures put in place. Access to public water, however is measured by the number of people, who have reasonable means of getting an adequate amount of water that is safe for drinking, washing and essential household activities expressed as a percentage of the total population [6]. [7 -8] have noted that the provision of adequate, clean, reliable, and potable water in Nigerian rural areas remains a challenge, which needs to be tackled considering the fact that a larger percentage of the population live in rural areas. Clean and portable water is water from an improved water source; water from unimproved sources are considered unsafe for drinking.

*Improved drinking water sources include*

- Household connection,
- Public standpipe,
- Borehole,
- Protected dug well,
- Protected spring,

- Rainwater collection, and
- Bottled Water from improved source.

*Unimproved drinking water sources include*

- Unprotected well,
- Unprotected spring,
- Rivers or ponds,
- Vendor-provided water,
- Tanker truck water, and
- Surface water (river, stream, dam, lake, pond, canal, irrigation channel)[9].

The following are indicators of an acceptable water supply standard:

- A) Equitable access to a sufficient quantity of water for drinking, cooking and personal and domestic hygiene,
- B) Sufficiently close public water points to households to enable use of the minimum water requirement,
- C) Maximum distance from any household to the nearest water point is 500 m,
- D) Queuing time at a water source is no more than 15 min,
- E) Water sources and systems are maintained such that appropriate quantities of water are available consistently or on a regular basis,
- F) Average water use for drinking, cooking and personal hygiene in any household is at least 15L per person per day, and
- G) Minimum people per water source is stated below;
  - i. 250 people per tap based on a flow of 7.5 litres/minute
  - ii. 500 people per handpump based on a flow of 16.6 litres/minute
  - iii. 400 people per single-user open well based on a flow of 12.5 litres/minute [10].

It is imperative to access the provided water facilities in Oyo State and to ascertain the extent, to which the water facilities meet the needs of the whole population. This study, therefore, seeks to make an assessment of the existing water facilities in rural areas of Oyo State. The specific objectives are to measure the availability of public water facilities; condition of these facilities; the extent of access to these facilities; the frequency of use of these facilities; the constraints limiting the use of these facilities, and how much public water facilities aids or complements other infrastructural facilities.

The findings of this study will contribute to the existing knowledge on rural water projects and aid in the implementation of accessible and functioning public water facilities in the future.

## 2 Materials and Methods

### 2.1 Study Area

Oyo State as shown in Figure 1 is one of the 36 states in Nigeria, located in the south western part of the country, and is located between latitudes 8.1196 and longitude 3.4196. The state covers a total of 28,454 km<sup>2</sup> of land mass and is bounded in the south by Ogun State, in the north by Kwara State, in the west partly bounded by Ogun State and partly by the Republic of Benin, in the east by Osun State. The state is well drained with rivers flowing from the upland in the north-south direction.

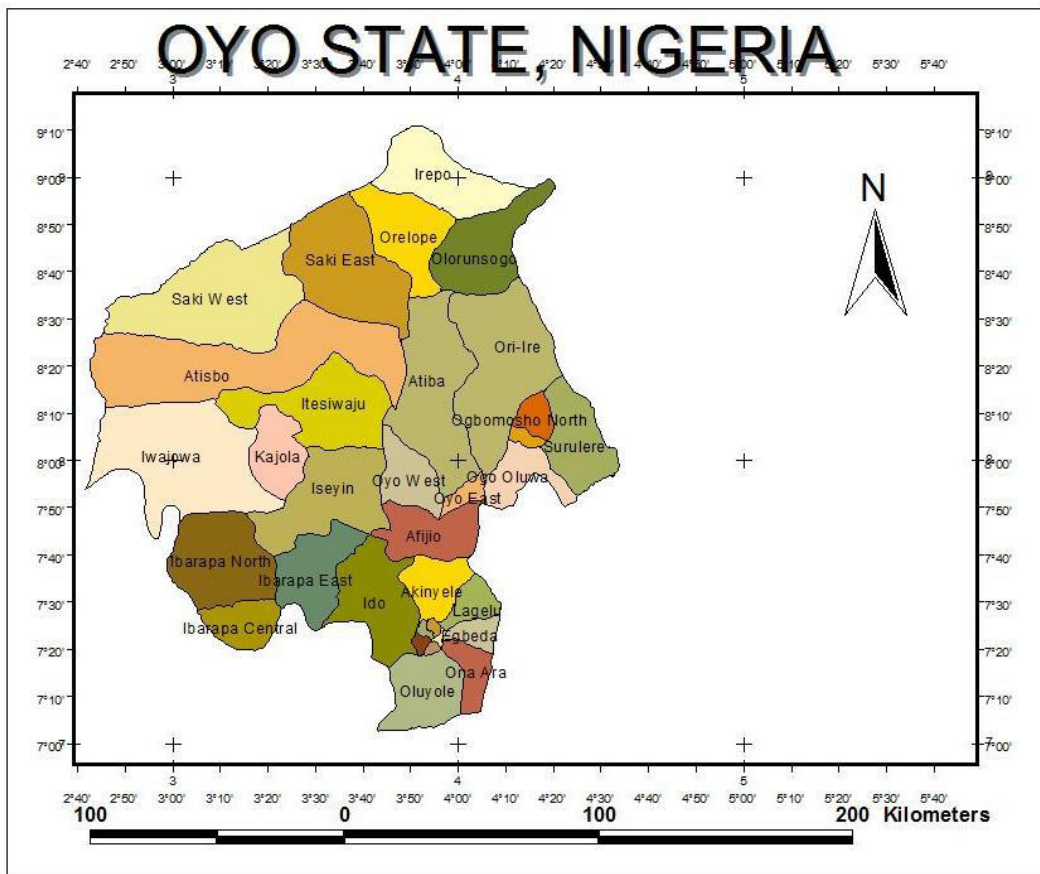


Figure 1: Map of Oyo State showing the 33 local governments

### 2.2 Methodological Framework

Oyo state consists of three senatorial districts; these are Oyo North, Oyo Central and Oyo South. Each of these senatorial districts has 13, 11 and 9 local governments, respectively. This gives a total of 33 local governments in the state. Local governments are either classified as Rural local Governments or urban local governments. The local governments in each of the senatorial districts

above were stratified into Rural and Urban local governments. Following this was a random selection of 10% (1) rural local Government in each senatorial district. The selected local Governments are Afijio Local Government, Atisbo Local Government and Ibarapa East Local Government. A random selection of two communities was made in each local government; this gave a total of six villages. Sabe and Agunrege were selected in Atisbo Local Government, Iluaje and Iware were selected in Afijio Local Government, Itabo and OkeOtun were selected in Ibarapa East Local Government. Twenty four households were systematically selected from each community giving a total of 144 respondents.

### *2.3 Data Collection*

Primary data for this study were collected through quantitative methods. Information from existing literature and field observations were transformed into quantitative measurable variables. Quantitative data were collected with validated structured interview schedule guides. The instrument for data collection was structured into five sections, and variables were measured on the interval scale. The first section focused on the availability and condition of public water facilities, the second section on extent of access to the water facilities, the third section on the frequency of use of the public water facilities, the fourth section on constraints limiting use, and the last section on complementary infrastructural facilities that are aided by public water facilities.

## **3 Results and Discussion**

### *3.1 Availability and Condition of Public Water Facilities*

Public water was available to 81.3% of the respondents and not available to 18.7% as shown in Table 1. The 81.3% of respondents that had water facilities available were further disaggregated based on the condition of the available facilities. Less than half of the respondents (41.7%) had their public water facilities in good working condition. 21.5% of the respondents stated that their water facilities were in a poor condition and 18.1% claimed it was just fair. This is corroborated by a study carried out in Rural Areas of Enugu State Nigeria, where 82.4% of the existing public water projects in the study area are partly or totally out of function [11]. No public water project is functioning up to the designed capacity.

Table 1: Availability and Condition of Public Water Facilities

Public Water	Frequency	Percentage
Not Available	27	18.7
Poor	31	21.5
Fair	26	18.1
Good	60	41.7

### 3.2 Access to Public Water Facilities

Less than half of the respondents (46.5%) have regular access to public water, as shown in Figure 2. Some respondents (34%) had rare access to public water infrastructural facilities, 16% had occasional access and 3.5% had no access at all. This implies that a larger percentage of the population in the rural areas in Oyo State cannot regularly access adequate and reliable water facilities. This is corroborated by [12] stating that “the vast majority of those, who do not have access to improved drinking water sources, live in rural areas. It is estimated that 79 per cent of the people using unimproved sources and 93 per cent of people using surface water live in rural areas”.

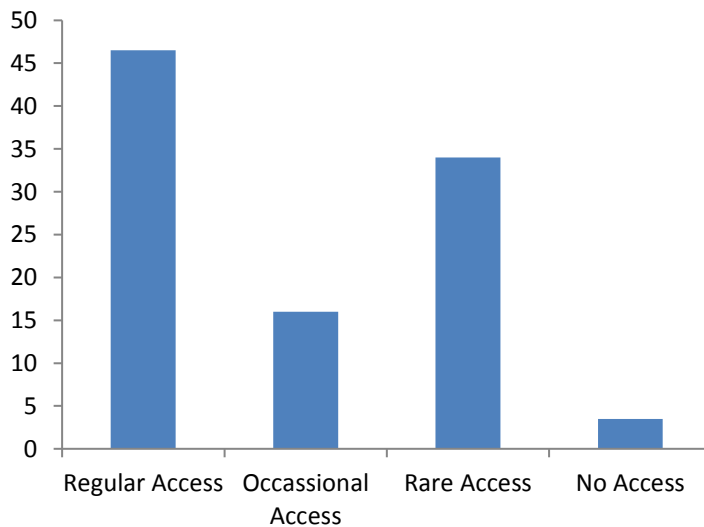


Figure 2: Extent of Access to Public water Facilities

### 3.3 Use of Public Water Facilities

Public water facilities were used by 91% of the respondents in varying degrees; this is shown in Table 2. Some (40.3%) use them daily, 15.3% use them frequently, 10.4% use it weekly, 0.7% use it fortnightly and 17.4% use it occasionally. It is important to note that for adequate water in each household the facilities should either be used daily or frequently, as the mean score of use is 3.125 as shown in Table 3. More than half of the respondents (55.6%) have a high level of use, while 44.4% of respondents have low level of use for public water facilities. This implies that those with low level of use of public facilities get water from other sources. A significant proportion of the Nigerian rural population continue to use rivers, ponds, lakes and harvested rainwater as their main sources of water supply [13]

Table 2: Frequency of Use of Public Water Facilities

Public water facilities	Frequency	Percentages
Daily Use	58	40.3
Frequent Use	22	15.3
Weekly Use	15	10.4
Used Fortnightly	1	0.7
Occasional Use	25	17.4
Never Used	23	15.9

Table 3: Level of Use of public water facilities

Use of Water Facilities	Frequency	Percentage
Low (<3.13)	64	44.4
High ( $\geq 3.13$ )	80	55.6

**Grand Mean = 3.125**

### 3.4 Constraints to the Use of Public Water Facilities

The highest ranked constraint of public water facilities is that *“it is not always working”* respondents claimed. This is common for public borehole, as electricity is needed to power it. The second most



severe constraint limiting the use of public water facilities is its distance to their houses. This is corroborated by [6] *“Women and children especially spend their productive and considerable time seeking for water in far distances from their homes.”*

Cost of access is also a constraint; this applies to commercial or private borehole facilities, where money is paid before getting water. In some communities, the available facility cannot cater for the populace, and some have stopped working completely, as shown in Table 4. In a study in Oke Ogun, Oyo State [14] also attributed the prevailing water poverty in many rural communities of Nigeria, to poor sustainability of water infrastructure amongst other reasons. There is clear evidence that women’s influence on the planning, financing and upkeep of community projects makes those projects much more likely to succeed in the long term [12]. Some respondents claimed that electricity is needed as a complementary facility that can aid the use of the water facilities. The need for a complementary facility that was not readily available was ranked the seventh constraint in terms of severity.

Table 4: Constraints to the Use of Public Water Facilities and Rank

<b>Constraints</b>	<b>Most Severe</b>	<b>Severe</b>	<b>Least Severe</b>	<b>Total</b>	<b>Rank</b>
Not always working	34(58.6)	19(32.8)	5(8.6)	58(100)	1st
Too far	26(50)	23(30.8)	3(5.8)	52(100)	2nd
It is in a poor state	21(53.8)	15(38.5)	3(7.7)	39(100)	3rd
Cost of access	7(31.8)	9(40.9)	6(27.3)	22(100)	4th
It cannot cater for the large populace	5(35.7)	6(42.9)	3(21.4)	14(100)	5th
Stopped functioning	5(41.7)	3(25)	4(33.3)	12(100)	6th
Needs complementary facility	6(54.5)	2(18.2)	3(27.3)	11(100)	7th

*\*Frequency and Percentages. Figures in Parenthesis are percentages..*

### 3.5 Public Water Complementing the Use of Other Infrastructural Facilities

87.5 % of respondents adjudged public water to aid and complement the use of health facilities, making health facilities the highest ranked infrastructural facility that cannot function without public water. This supported by an observation study conducted by [15] revealed that the provision of basic amenities such as clean water supply is essential as it will determine the communities’ health level. 71.5% of the respondents ranked public water to be complemented by electrical facilities, 65.3% adjudged public water as a facility that complements the use of educational facilities, while 56.3% stated that public water complements agricultural extension services.

Table 5: Public Water Complementing Other Facilities

<b>Other Infrastructural Facilities</b>	<b>Frequency</b>	<b>Percentage</b>
Public Health Facilities	126	87.5
Educational facilities	94	65.3
Agricultural Extension Facilities	81	56.3

#### **4 Conclusion and Recommendations**

From the results it can be concluded that only about half of rural dwellers have regular access and use public water facilities. Some other half of the population still gets water from unimproved sources. This is a call to action as average access to public water facilities needs to improve to almost total access of all community members. Water needs to move from being a scarce commodity to being abundant in all seasons.

This paper recommends an end to disproportionate provision of water facilities without adequate planning and involvement of all community stakeholders. Government agencies providing water facilities should estimate the population of communities and provide water facilities proportional to the population. The facilities should also be well distributed so that some community members would not be marginalized.

An involvement or inclusiveness of all community stakeholders especially women in the planning phase of providing water infrastructural facilities is paramount. Community efforts should be aimed at maintaining the water facilities, and agencies should provide continuous education on the maintenance of existing water facilities in order to remain them in good condition. In addition to the above, other infrastructural facilities that aid the use of public water facilities should be provided in rural communities.

#### **5 Acknowledgements**

The corresponding author would like to thank the DAAD and the Exceed Swindon project for being supported to participate at this workshop at the University of Kwazulu-Natal, Durban, South Africa.

#### **6 References**

- [1] WHO/UNICEF:Joint Monitoring Programme for Water Supply andSanitation. Global water supply and sanitation assessment – 2000 Report. Geneva2000,
- [2] Lawal Tolu: Local Government and Rural Infrastructural Delivery in Nigeria. International Journal of Academic Research in Business And Social Science. Vol 4,No. 4, 2014.

- [3] Federal Ministry of Water Resources: National Rural Water Supply and Sanitation Program: a Strategic Framework, draft 3, Prepared by the Department of Water Supply and Quality Control, March 2004.
- [4] WSMP - Water and Sanitation Monitoring Platform Nigeria: Country Summary Sheet. Abuja 2008.
- [5] Adedokun, M.O.: Education for Maintenance Culture in Nigeria: Implications for Community Development. *International Journal of Sociology and Anthropology*. Vol. 3(8), pp 290-294, 2011.
- [6] Ishaku, H. T. et al.: Water Supply Dilemma in Nigerian Rural Communities- Looking Towards the sky for an Answer. *Journal of Water Resource and Protection*, Vol. 3, pp. 598-606, 2011.
- [7] Olaleye Y. L.: The Contributions of the Doctrine of Citizens :Participation in Organization and Implementation of Community Development Project, *Eur. J. Sci*, 2010.  
Res. <http://www.eurojournal.com/ejsr.htm/>
- [8] Akpomunie O. B.: Self-help as a strategy for Rural Development in Nigeria - A bottom-up Approach, *J. altern. Perspect. Soc. Sci.* 2(1):88-111, 2010.
- [9] WHO/UNICEF: Joint Monitoring Programme for Water Supply and Sanitation. *Water for life : making it happen*, Geneva, 2005.
- [10] Sphere Association: *The Sphere Handbook: Humanitarian Charter and Minimum Standards in Humanitarian Response*, fourth edition, Geneva, Switzerland, pg 89 – 156, 2018.  
[www.spherestandards.org/handbook](http://www.spherestandards.org/handbook).
- [11] Obeta Michael Chukwuma: Patterns and problems of Domestic water supply to Rural communities in Enugu State, Nigeria. *Journal of Agricultural Extension and Rural Development*. Vol.9(8), pp. 172-184, 2017.
- [12] WHO/UNICEF: *Progress on sanitation and drinking water – 2015 update and MDG assessment*. 2015 Report. Geneva, 2015.
- [13] Ezenwaji E. E. : Institutional Framework for Public Water Supply and Sanitation Management. In Anyadike RC and Obeta MC. Department of Geography and Meteorology University of Nigeria Nsukka, 2012.
- [14] Toyobo A.E, Tanimowo N.B.: Evaluation of Rural Water Supply Systems in Selected Communities in Oke-Ogun Area, Oyo State, Nigeria. *Glob. J. Sci. Front. Res.* 11(9):1-7, 2011.
- [15] Taylor, D. L., Kawahita, T. M., Cairncross, S, & Ensink, J. H.: The impact of water, sanitation and hygiene interventions to control cholera: A systematic review. *Plos One*, 10(8), 1-19, 2015.