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THE DILEMMA OF RURAL WATER SUPPLY IN CROSS RIVER STATE: IS INSTITUTIONAL REFORM THE ANSWER?

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Abstract

Access to sufficient, safe, acceptable, physically accessible and clean water is a fundamental human right. This paper assessed the status of water supply and household access to water as well as interrogates extant institutional arrangement for water supply in rural communities in Cross River State. A random sample of 376 households participated in the survey of household water access. Focus Group Discussion was held with representatives from the State Water Corporation, community leaders and other stakeholders in the water sector to explore their experiences and identify factors hampering effective water supply in the area. Findings showed an abysmally poor status of water supply by the State water agency as households relied largely on water sourced from distant streams and rivers. Water supply by the State's Water and Sanitation Agency remains a mirage due to inadequate water infrastructure, dysfunctional or poorly maintained boreholes, lack of equity and fairness in borehole distribution and corruption. Based on these findings, it is recommended that reforms in the water sector should be prioritized by the State Government. The State water and sanitation agency should be unbundled to encourage local participation and private investment in water infrastructure in rural areas.

Keywords: Water Supply; Water Access; Rural; Institutions, Reforms, Cross River State.

1. Introduction

Poor access to safe water remains one of the development issues facing developing countries including Nigeria. In view of this problem, the United Nations (2010) as part of its Sustainable Development Goals (SDGs) articulated access to sufficient, safe, acceptable, physically accessible and clean water for personal and domestic use as a basic right of all people. In spite of this laudable global initiative towards improving access to water, the WHO (2021) estimated that nearly 2.2 billion of the world population have access to safe water facility. Access to water 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 (Osumanu, Darty and Adjei, 2021).

Access to water can also be defined in terms of minimum amount of time spent by household on trips to water point or source (Kanyangara, Allen and Fuente, 2021). Safe water includes treated surface water as well as untreated but uncontaminated water from natural spring, sanitary well and protected boreholes.

The alarming state of poor access to safe water in Nigeria has been well documented. According to World Bank (2023), an estimated 70 million Nigerians do not have access to safe drinking water and at least 70,000 deaths occur in children under age of five from Diarrheal disease. The earliest institutional arrangement for public water supply in Nigeria dated back to 1966 when the first water corporation was formed in the western region with the mandate to facilitate water supply in the municipals (Okafor, 2019). However, with the setting up of Federal Ministry of Water Resources and subsequent establishment of River Basin Development Authorities (RBDA), the Government's clear-cut agenda for managing water resources and improving water supply was demonstrated.

Following the adoption of the National Water Supply and Sanitation Policy in the year 2000, the provision of water supply became priority for the central, state and local governments leading to the establishment of States' Water Corporation saddled with the responsibility of public water supply. Recent effort by the World Bank group to support the Nigerian government through the Nigerian Sustainable Urban and Rural Water Supply, Sanitation and Hygiene (SURWASH) programme activated policy reforms to enhance the capacity of institution required for effective and sustainable service delivery (World Bank, 2023). However, scholarly investigations have shown that majority of rural communities in Nigeria do not have improved water supply system such as piped water networks or boreholes. Where such facilities exist are either malfunctioning or completely broken down (Adeleye, Medayose and Okelola, 2014; Akoteyen, 2019).

Rural communities continue to struggle to access clean water with women and children bearing the burden of poor water supply as they spend considerable time seeking for water in far distances from home (Obeta, 2018; Kaoje, 2019, Sabbath, 2022). They rely solely on self-water supply source such as shallow wells, rivers, springs, ephemeral streams and rainwater. The water challenge in rural communities in Nigeria has significant and wide-ranging effects on various aspects of the community life, including health, sanitation, hygiene, economy environment, social dynamics and migration. The imperative of addressing the water challenge and ensuring access to safe and clean water is essential for improving the well-being and livelihood of rural communities in Nigeria and the Cross River State have one of the lowest per capita shares of water supply quite below the national average of 9 litres/person/day (UNICEF, 2023).

The water poverty in rural Cross River State have been well documented in researches that seek to focus on distribution of water points /facilities (Nkanu, 2019; Inah *et al*, 2020) gender and health issues (Ibiang, Olaniran and Ozoh, 2021) and quality of water (Eteng, Okputu and Abetienbe, 2021; Bisong, Eba and Oko, 2017; Bassey and Efiong, 2017). However, research that interrogate the institutional arrangements for rural water supply are few. This paper seeks to investigate the rural water supply landscape and interrogate institutional challenges that impede effective water supply in rural communities in Cross River State.

2. STUDY AREA

Cross River State is situated in southern Nigeria, between latitudes 4°00'N and 6°30'N and longitudes 7°30'E and 9°30'E. The state covers a total land area of about 20,156 square kilometres, encompassing diverse landscapes ranging from low-lying coastal plains to hilly and mountainous regions in the north. Notable geographical features within the state include the Cross River, which flows through the central part of the state, and the Obudu Plateau, known for its scenic beauty. It shares boundaries with neighbouring states such as Benue, Ebonyi, and Akwa Ibom, as well as international borders with Cameroon to the east. The state is divided into three senatorial districts and eighteen local government areas. This study focused on thirty rural communities selected across six local government areas in the three senatorial districts (See Figure 1).

The location of Cross River State offers a unique ecological setting, with rich biodiversity and natural resources. The state is part of the Cross River National Park, a protected area recognized for its high levels of species endemism and conservation importance. The park encompasses both terrestrial and aquatic ecosystems, including tropical rainforests, savannah woodlands, and rivers, supporting a wide array of plant and animal species. The geographical location of Cross River State has influenced its socio-economic development and cultural diversity. The varied landscapes and geographical features of Cross River State contribute to its attractiveness as a tourist destination. The state boasts natural attractions like the Obudu Mountain Resort, Agbokim Waterfalls, Kwa Falls, and the Drill Ranch, which draw visitors from within Nigeria and abroad.

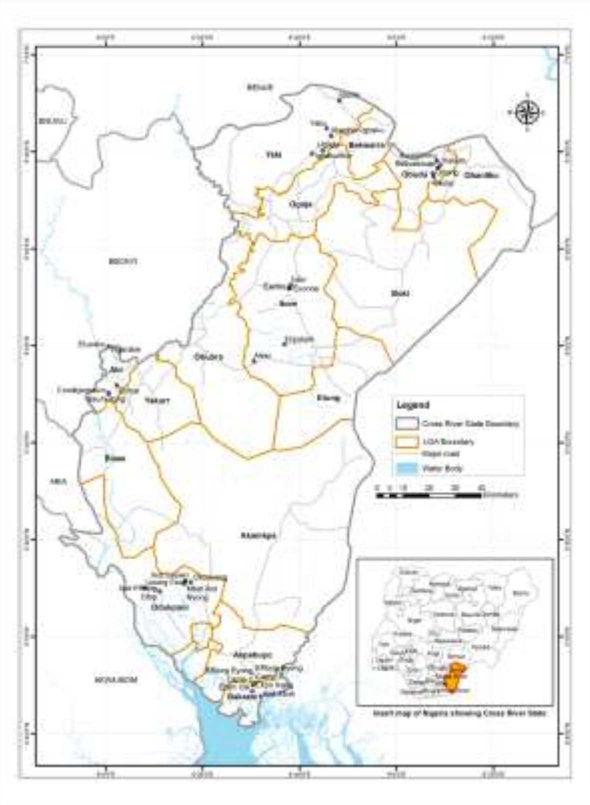

Figure 1: Cross River State Map Showing Sampled Communities

Cross River State experiences a tropical climate with distinct wet and dry seasons. The climate is influenced by factors like latitude, proximity to the coast, and the region's topography. It has a generally humid climate with high temperatures throughout the year. The average annual temperature ranges from 25°C to 28°C (77°F to 82°F). The coastal areas tend to be slightly cooler due to the influence of maritime winds and proximity to the Atlantic Ocean. Inland areas, particularly those at higher elevations, experience slightly lower temperatures (Asouzu & Efiong 2015).

The state experiences two main seasons, the rainy season and the dry season. The rainy season typically lasts from April to October, with peak rainfall between June and September. The region receives substantial amounts of rainfall during this period, often exceeding 2,000 millimeters (79 inches) annually. The heaviest rainfall is usually concentrated in the coastal and southern parts of the state, gradually decreasing towards the northern areas. The dry season, which lasts from November to March, is characterized by reduced rainfall and lower humidity levels. During this period, temperatures can rise, with daytime temperatures often reaching around 32°C (90°F) or higher in some areas. The harmattan, a dry and dusty wind from the Sahara Desert, occasionally affects the state during the dry season, leading to hazy conditions and lower temperatures.

Climate significantly impacts WaSH in rural communities of Cross River State as the area usually has heavy rainfall and flooding which can contaminate water sources and damage sanitation infrastructure. This contamination leads to increased incidences of waterborne diseases and disrupts access to clean water and proper sanitation facilities. During drought, water scarcity becomes a critical issue forcing rural residents to rely on unsafe water sources. These climate-related challenges exacerbate the already precarious WaSH conditions in these areas making it difficult to maintain consistent and safe water sanitation services (Kohlitz and Iyer, 2021; Abrams, Carden, Teta, & Wågsæther, 2021).

Cross River State is home to a diverse population consisting of various ethnic groups, such as the Efik, Ejagham, Bekwarra, and Yala among others. The state's population density varies across urban and rural areas. Urban centres, including Calabar, Ogoja, and Ikom, tend to have higher population concentrations, while rural regions have lower densities (Eboh, 2020). These variations in population density can impact on the availability and accessibility of water and sanitation services.

Rural communities in the study area often exhibit dispersed settlement patterns. This is influenced by factors like the agricultural practices, cultural traditions, and historical developments. Due to the reliance on agriculture as a primary livelihood source, rural settlements are often scattered across the landscape, with households situated near farmlands or water sources (UN-Habitat, 2019). The dispersed settlement pattern can present challenges for the implementation of centralized water supply and sanitation infrastructure. In such settings, decentralized approaches, such as community-based water systems, may be more suitable to ensure adequate water and sanitation coverage (UN-Habitat, 2019). Following the 2016 population estimation by the National Population Commission, the population of Cross River State is 3.8 million.

3. Materials and Method

The study was designed as a cross-sectional study that utilized the mixed research methods. The quantitative method was used to assess household’s access to water while the qualitative approach was employed for assessing the institutions (Cross River Rural Water and sanitation Agency) saddled with the responsibility of water supply.

376 households participated in the survey of household’s access to water. They were randomly selected from 30 rural communities. Additionally, 8 peoples participated in the Focus Group Discussion designed to identify the challenges militating against the supply of water by the State Water Corporation. Four were community leaders while the rest were staff of the Cross River Water and Sanitation Agency.

The Household Water Access Questionnaire (HWAQ) was designed, validated and used to collect data on households primary source of water, proximity to source of water, cost of getting water and per capita water consumption. The Focus Group Discussion was conducted to explore the experiences of the Water Agency and identify factors affecting the success of the institution.

Data was analysed and presented in percentages, frequencies and Tables.

4. RESULTS AND DISCUSSION

i. Status of Public Water Supply in Rural Cross River

The provision of safe drinking water is critical to achieving Goal number 6 on the Sustainable Development Goals which emphasizes the right to water access. In Cross River State, the responsibility of rural water supply rest squarely on the Cross River Water and Sanitation Agency. In the rural communities, the Agency provides borehole as the main facility for water supply. However, findings in the study showed that of the 30 rural communities sampled, only 19 communities were beneficiary of the borehole project (see Table 1).

Further findings also indicated that of the 78 boreholes provided in the area, only 50 are functional. The distribution of the functional boreholes was observed to be skewed in favour of 11 communities leaving 19 with zero functional borehole. It is evident that the pattern of distribution in the study area was uneven and grossly inadequate, falling short of the National Water Policy and the WHO standards. The Nigerian National Water Policy for rural areas recommended a minimum of one borehole for 250 population threshold and a maximum of 30 litres per person per day for water consumption.

However, none of the communities had water supply that met the adequate threshold of providing sufficient quality of water by the State Water Agency. These results corroborate UNICEF (2022) report on rural water supply in Cross River State being one of the lowest in Nigeria. Further report by the WaSH National Outcome Routine Mapping (WaSHNORM) for Nigeria on 2021also showed a dismal status of rural water supply in the Cross River State. These reports attributed the situation to the ubiquity of “snapped” water boreholes in the area (Plate I and II). Snapped water facilities are those that do not contribute to per capita share due to non-functionality.

Table I: Borehole Water Supply in the Study Area (n = 30)

S/N	Item	Frequency	Remark
1	Number of boreholes provided by water Agency till date	78	Grossly Inadequate
2	Number of functional boreholes	50	Grossly Inadequate
3	Number of snapped boreholes	28	Due to poor maintenance
4	Number of communities with functional boreholes	11	The distribution shows skewness
5	Number of communities without functional borehole	19	The distribution violates the principle of equity and fairness

Source: Field Observation by Authors, 2024

Plate I: Abandoned Borehole at Ikwomikwu Village, Obudu LGA

Plate II: Dysfunctional borehole at Ekureku, Abi L.G.A.

ii Household Access to Water

Access to water supply is critical to household health and socio-economic wellbeing. In view of the inadequate and in most communities, absence of water supply by the State's Water Agency, households extensively utilize surface water and private borehole for drinking and other domestic activities. Findings from the household water survey showed that majority of households sourced water from stream /river (50%) private borehole (35%), well (9%) and rain (1%) (See Table 2). These findings are not different from previous studies which indicated that the failure of public water supply in rural Nigeria and the reason rural households rely largely on unsafe water source for domestic use (Obeta, 2018; Kaoje, 2019; Inah, 2020; UNICEF, 2023).

Travel distance to water source however varies based on relative location of the communities to river or stream. Findings showed that 48% of households in the study area do not travel far to source for water but 19% of them reported having water sources far away from dwelling.

According to Akoteyen (2019), most rural households prefer to locate their homes close to streams to avoid longer travel distance to fetch water. In areas where water sources are distant from homes, women and children bear the burden of expending time and energy in search of water. The National water policy however recommends a maximum of0.5km distance of water points from dwelling to ensure easy access to water. On the whole, the cost of getting water in the stud area is zero (see Table 2) since water supplies are largely from rivers and streams (Plate 3 and 4).

Table 2: Household Access to Water (n = 376)

S/N	Parameter	No. of Household	Percent of total	Remarks
1.	**Primary Source of water**			
	Rain	2	1	Streams/rivers are the dominant source of water supply due to the low presence of WaSH boreholes in the area
	Stream/River	206	55	
	Well	35	9	
	Borehole	133	35	
2.	**Proximity to source of water**			
	Very far	23	6	Only a few proportions of households travel a far distance to source water
	Far	70	19	
	Close	181	48	
	Very close	102	27	
3.	**Cost of getting water**			
	Expensive	37	10	Majority of households source water from the river/ stream at no cost.
	Moderate	27	7	
	Cheap	16	4	
	No cost	296	79	
4.	**Per capita consumption of water**			
	<10 litres	85	27	Majority of households consume water far below the national benchmark of 30 litres/person/ day
	10 - 30 litres	220	54	
	> 30 litres	71	19	

Source: Field Survey by Authors, 2024

Plate 3: Abachor-Igbeku Stream, Yala LGA.

Plate 4: Ekpokpa River (Aya Ekpokpa), Ikom LGA

Regarding the quantity (adequacy) of water consumption in the study area, the per capita water consumption was used as the yardstick for measuring household water consumption. The per capita water refers to the quantity of water each uses daily. The WHO recommends an adequacy threshold of 120 liters/person/day for a person living close to the water point while the Nigeria National Water Policy recommends 30 liters/ person/day for a person living 0.25km away from the water point. However, the WaSH National Outcome Routine Mapping (WaSHNORM) 2021 report indicated that the average per capita water consumption for the rural population in Nigeria is 10 litres. As data in Table 4.2 indicates, 27% of the households consume less than 10 litres (being the average for rural dwellers in Nigeria), 54% reported per capita consumption of 10 to 30 litres while 19% recorded above 30 litres per capita water consumption. The numerous “snapped” water facilities (that is, water facilities that do not contribute to per capita share due to non-functionality) remain a key factor in inadequate water supply in the study area and rural Nigeria in general.

iii Institutional Challenges to Public Water Supply in the Study Area

The Cross River Water Corporation are the key institutions saddled with the responsibility of public water supply in rural and urban communities. However, empirical evidence from the study and previous studies (Bassey and Efiong, 2017) show that the institution has not been successful in meeting the huge water demand in rural areas. Some of the key challenges hampering its effectiveness in rural water supply are highlighted in Table 3.

Table 3: Key Challenges Facing the Cross River Water Agency

S/N	Nature of Challenge	Key Manifestation	Remarks
1	Poor funding	Poor budgeting allocation to Agency; late release of funds, lack of counterpart funding	Funds meant for water project should not be diverted to other projects
2	Poor collaboration with stakeholders	Low local participation; poor alliance with NGOs, international donors and the private sector	Local water committee should be set up
3	Corruption/Nepotism	Diversion of funds; Embezzlement of funds; lack of Fairness in allocating water project.	Proper supervision and probing of water projects
4	Over bureaucratic processes / poor maintenance culture	Delays in project implementation; Procurement / Logistics, Lack of Facilities maintenance	Unbundle the water /sanitation Agency; Decentralize operation to ease bureaucracy

Source: Focus Group Discussion

As data in Table 3 indicated, the State Water Agency is bedevilled with myriads of issues that incapacitated its effectiveness. Both federal and state government have showed the lack of willingness to fund key sectors including the water sector. This indictment is substantiated by the non-payment of counterpart funding for water projects initiated by the UNICEF and World Bank. For instance, the Sustainable Urban and Rural Water Supply, Sanitation and Hygiene (SURWASH), an initiative of the World Bank has not been effective in rural areas due to institutional bottleneck bordering on counterpart funding.

The lack of collaboration with relevant stakeholders has been re-echoed as an institutional impediment to rural water supply (UNICEF, 2022). Some have call for reforms in the State Water Corporation to ensure equity, inclusiveness, gender and local participation. The issue of corruption and nepotism is perennial to the Nigerian Socio-economic space. Most water projects in the rural areas are abandoned and uncompleted due to funds embezzlement and lack of probity in procurement and award of contracts. In some cases, water projects are allocated based on sentiments and politics rather than equity and fairness.

iv Is Institutional Reform the Answer?

The water challenge in rural Cross River has persisted just like any other part of Nigeria in spite of multifaceted efforts to ensure rural water supply. Experts believe that the problem lies in lack of proper water supply system in rural communities. In other words, extant arrangement that is driven by the State Water Agency has failed and that reforms are inevitable. The World Bank in (2023) in recent times has called for necessary policy and institutional reforms that will enhance state capacity to provide effective and sustainable water supply service delivery in rural communities. Other agencies such as the UNICEF (2023) believe that bridging institutional and policy gaps in the water sector should focus on unbundling of the State Water and Sanitation Agencies to allow for an integrated package of investments in critical water infrastructure to improve water supply service delivery. Obeta (2018) also aligned his thought with the call for reform in the State Water Agency to create room for local participation ownership of water supply initiatives. While Sabbath (2022) believe that encouraging private investment in the rural water sector should form the core of water policy reform through the National Rural Water sector reform programme of the Federal Government.

Based on the findings of this study, it is obvious that reforms at the Cross River Water Agency; the Cross River Basin Authority, the Ministry of Water Resources, the Rural Water Sanitation Agency and other water institutions are inevitable for improved water supply in the rural communities. Such reform should strive to create harmony in the planning and implementation of water schemes to reduce conflict of interests and bureaucratic bottlenecks in water projects implementation. Adopting a bottom-up approach in the planning of rural water programmes should be in the institutional / policy review agenda such reform should promote collaboration between government, NGOs, international interventionist agencies, the private sector, and local communities for enhanced rural water supply.

5. CONCLUSION

The dilemma of water supply in rural Cross River State are two-fold. On one hand is the mirage of households waiting and hoping for public water supply by the State Water Corporation; on the other hand, is the burden of traveling long distances to source water from streams and rivers that are often contaminated. The rural people especially women are overburdened and depressed by the state of water poverty in the area. The State's Water Agencies are overwhelmed with myriads of challenges ranging from poor funding, lack of collaboration, nepotism, corruption and logistics issues which has rendered it lame and ineffective. Proponents of institutional reform in the water sector have suggested the unbundling of State's Water and Sanitation Agency; opening up the water sector for private to provide infrastructure in rural areas; creating enabling environment for local participation through collaboration and enforcement of Local Government Autonomy to enable them take charge of rural water supply. Findings of this study reinforces these calls for institutional reforms with the hope that these reforms could be the game changer for rural water supply dilemma in Cross River State.

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