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Assessing the Water Supply and Sanitation Status in IDP Camps within Borno State

Joseph Gana
Department of chemical engineering,
Federal university Otuoke Bayelsa state
ganajj@fuotuoke.edu.ng

Abstract
Water is an invaluable resource to man and living things since it is essential to the sustenance of life function. Accessibility and availability of fresh clean water does not only play a crucial role in economic development and social welfare but it is also essential element in health, food production, disease control and poverty reduction A continuous lack of water, insufficient latrines or uncontrolled open defecation, poorly set up waste disposal or drainage systems are all risks that may lead to illnesses and epidemics such as diarrhea and cholera. This project assessed improving water supply and Sanitation in Monguno Local Government IDPs Camp, Borno State. The study examines the conditions of improving water supply and sanitation in IDPs camps and how this has impacted on the health, hygiene and sanitation practice of the IDPs. This study was on secondary and primary information gathered using questionnaire shared to 300 internally displaced people (IDPs) staying in the ten (10) camps in Monguno Local Government Area. Questionnaires were shared to the IDPs and collected after three days. This has shown that the overall median and average values for both water supply and sanitation coverage across NGOs refugee operations standards but that there are still large numbers of camps where the average water supply is inadequate and there are not enough latrines for the population. Indicators across the water, sanitation, health and nutrition sectors in refugee operations show how the quality of service or gaps in one sector has clear impacts on another. The limitations of such general view and the use of one annual value are acknowledged but this information has strengthened understanding of the effects of inadequate service provision. Household surveys showed how gaps in poor water and sanitation were affecting IDPs wellbeing and health. To make water, sanitation and hygiene effective and successful, participation of the camp population, particularly of women and girls is essential. There is need to improve service provision to over and above the prescribed minimum standards in the water, sanitation, health and nutrition sectors but this will also require increased and sustained resources.

Keywords: ***Water supply, Sanitation, IDP Camps, and , Borno State***

Introduction

The quality of drinking water is an important environmental determinant of health (WHO, 2010), as water is essential to life, hence an invaluable resource to man and all living things essential for the sustenance of life functions. Accessibility and availability of fresh clean water does not only play a crucial role in economic development and social welfare, but it is also an essential element in health, food production, disease control, and poverty reduction (UNICEF, 2006). The United Nations World Water Development Report, Leaving No One Behind, launched on 19th March, 2019, during the 40th session of the United Nations Human Rights Council (UNHRC), and in conjunction with World Water Day, demonstrates how improvements in water resource management and access to water supply and sanitation services are essential to addressing various social and economic inequities, such that no one is left behind when it comes to enjoying the multiple benefits and opportunities that water provides. Safe drinking water and sanitation are recognized as basic human rights, as they are indispensable to sustaining healthy livelihoods and fundamental in maintaining the dignity of all human beings. From the Water Supply and Sanitation Baseline Survey (WSSBS), gathered in 2007, reported a

national access of 54.3% of water supply and 65.6% of improved sanitation. That survey also found that 18.8 percent of the population resorts to open defecation. The country status overviews (CSO2) also compares countries own estimates of coverages with report from the UNICEF/WHO joint monitoring programmes (JMP). According to the joint and monitoring programme (JMP), access to improved water supply in Nigeria nationally was 47% in 1990. By 2008 the percentage of the population with access had increased to 58%, spread across 75% of the urban population and 42% of the rural population. The 2008 access data implies that as many as 63 million Nigerians have no access to improved water supply.

According to the UN, 71 million people (2.3 million girls, 1.9 million boys, 1.6 million women, and 1.3 million men) will need humanitarian assistance in northeast Nigeria in 2019 as a result of a crisis that is now in its tenth year. The crisis has largely been triggered by an ongoing regionalized armed conflict, characterized by massive and widespread abuse against civilians, including killings, rape and other forms of sexual violence, abduction, child recruitment, burning of homes, pillaging, forced displacement, arbitrary detention, and the use of explosive hazards, including in deliberate attacks on civilian targets.. Over 27,000 people have been abducted; about 1.8 million people remain displaced, with 94 percent of the displacement attributed to ongoing conflict and over 80 percent of the displaced people in Borno State. This has resulted in forceful migration leading to the setting up of IDP camps across the Northeast with Borno State amongst the most affected with water infrastructures greatly impacted and its quality affected.

In this regard, this paper studies the state of the water supply and sanitation status in the IDP camps within Borno State for the optimal service delivery in terms of functionality. s.

Materials and Methodology

Study Area

The study considered IDP camps within Monguno Local Government Area of Borno State that include: GGSS, Kuya, NRC Marte, Water Board, Gana Ali, Vetenary, Ngurno, Stadium, Charamari, and Fulatari.

Materials

Dataset

The primary dataset were sourced from the selected IDP camps within the study area,, while the secondary dataset were sourced from published relevant books, journals, and internet material

Methodology

Data Collection

The dataset will be collected through a well-structured questionnaire administered to about 300 internally displaced people (IDPs) staying in the ten (10) camps in Monguno Local Government Area. and responses collected after three days (see Table 1)

Table 1 Name of Camp

Variable	Frequency	Percentage (%)
GGSS	20	7.0
NRC MARTE	20	7.0
WATER BOARD	30	10.5
Charamari	55	19.3
Fulatari	30	10.5
Kuya	20	7.0
Gana Ali	34	11.9
Stadium	8	2.8
Ngurno Camp	32	11.2
Veterinary	36	12.6
Total	**285**	**100.0**

Source: Field Survey, 2020

Method of Data Analysis

The data will be analyzed using descriptive and inferential statistics. The inferential statistics include the use of Analysis of Variance to test the hypothesis with the aid of Statistical Package for Social Science (SPSS) to determine the relative association between the studied variables.

Sample and Sampling Technique

The purposive sampling techniques was used was, however the size of the sample was not proportional to the total population of interest, with the sample frame shown in Table 2.

Table 2 Sample frame

Number of Camps	Population	Sample Size
GGSS	21,479	30
NRC MARTE	4393	30
WATER BOARD	24707	30
Charamari	3849	30
Fulatari	8998	30
Kuya	10792	30
Gana Ali	3615	30
Stadium	3153	30
Ngurno Camp	5523	30
Veterinary	2835	30
Total	**89344**	**300**

Source: IOM, UN Migration DTM Nigeria

Discussion of Findings

Preliminary Finding from the Sample Frame

Presented in Table 2 above the sample frame on the various camps of the respondents, where 7.0% of the respondents were from GGSS, NRC Marte, and Kuya camp respectively, 10.5% of the respondent's ware from Water Board and Fulatari camp respectively, 19.3% of the respondents are from Charamari camp, 11.9% of the respondents are from Gana Ali camp, 2.8% are from Stadium camp, 11.2% are from Ngurno camp, while 12.6% out of the total number of respondents are from Veterinary camp all in Monguno. These indicate that there is equal representation across various camps in the study area. This makes the research more qualitative and transparent.

Socioeconomic Characteristics

The result should however be noted that three hundred (300) questionnaires were administered, while two hundred and eighty-five (285) were retrieved. This gives 95% of the rate of return. This is in line with Mugenda and Mugenda (2003) who recommended that for simplification, a response rate of 50% is sufficient, 60% is good and a response rate of 70% and over is excellent. This was achieved because of a number of reasons, first, there was proper field organization and coordination with the respondents. This made it easier for the research to get the questionnaires filled hence giving the researcher ample time to undertake data collection. This analysis is based on two hundred and eighty-five (285) respondents. The Socioeconomic Characteristics of Respondents is presented in Table 3

Table 3: Socioeconomic Characteristics of Respondents (n=285)

Variable	Frequency	Percentage (100%)
Item 1: Age distribution of respondents		
15-20 years	29	10.2
21-25 years	34	11.9
26-30 years	55	19.3
31-35 years	91	31.9
36 yrs. and above	76	26.7
Item 2: Sex		
Male	68	23.9
Female	217	76.1
Item 3: Educational background		
Primary School	33	11.6
Secondary School	81	28.4
Tertiary school	30	10.5
None of the Above	141	49.5
Item 4: Marital Status of Respondents		
Married	125	43.9
Single	72	25.3
Divorce	88	30.9

Source: Field Survey, 2020

According to item 1, 10.2% of the respondents indicated that they were aged between 15 to 20 years, 11.9% indicated between 21 and 25 years, 19.3% indicated between 26 and 30 years, 31.9% indicated between 31 and 35 years while 26.7% indicated 35 years and older. According to these findings, we can deduce that most of the respondents were aged between 31 and 35 years and older.

From item 2, 23.9% of the respondents indicated they were male, 76.1% of the respondents indicated they were female. From these findings, it is clear that most of the respondents were female, because they are the ones mostly involved in water collection, hygiene and sanitation of the household.

Base on item 3, the findings, 11.6% of the respondents indicated that their highest level of education was the primary school, 28.4% indicated secondary school level, 10.5% indicated tertiary education level, i.e., Diploma level, bachelor's degree and Master's level while 49.5% out of the total number of respondents indicate none of the education which shows that they have no formal education. From these findings, we can infer that the highest level of education for most respondents were none formal education and secondary level.

According to the findings on item 4, 43.9% of the respondents indicated that they were married, 25.3% indicated they were single, 30.9% indicated they were divorced. From these findings, we can deduce that most of the respondents were married and are women because they are the one mostly involved in water, sanitation and hygiene practices.

Source of Drinking-Water

Table 4 presents the source of their drinking water, where 19.6% source of drinking water from piped into dwelling, 4.9% from piped to yard or plot water, 19.6% from public tap/stand pipe water and protected spring water respectively, 13% from tube well/borehole water, 10.5% from tanker – truck, 1.8 from bottled water/gallon container and dispenser, 10.9% out of the total number of respondents source of water from unprotected dug well, while 3.2% from rain collected water. From the table we can deduce that most household depend on public tap. This indicated that there is need to improve water supply to control water quality and availability in the camps. More awareness about water, sanitation and hygiene practices programs needs to be organized to address proper water quality, good sanitation practices in the camps to avoid any epidemics and to maintain good hygiene practices, to minimize mortality and morbidity rate in the camp.

Table 4 Main source of drinking-water for members of household

Variable	Frequency	Percentage (%)
Protected dug well	47	16.5
Borehole	14	4.9
Public tap/ standpipe	56	19.6
Tube well/ borehole	37	13.0
Tanker-Truck	30	10.5
Bottled water/gallon container and dispenser	5	1.8
Protected spring	56	19.6
Unprotected dug well	31	10.9
Rainwater collection	9	3.2
Total	**285**	**100.0**

Source: Field Survey, 2020

Available of water in the Camp

Table 5 indicates the availability of water in the camp, where 101 representing 35.4% out of the total number of respondents said the water is available, while 184 representing 64.6% out of the total number of responses are of the opinion that water is not available in the camp. The result shows that there is scarcity of water in the various camps in Monguno the study area.

Table 5: Available of water in the Camp

Variable	Frequency	Percentage (%)
Yes	101	35.4
No	184	64.6
Total	**285**	**100.0**

Source: Field Survey, 2020

Distance from Water Point

Table 6 presents the distance it takes to fetch water, where 21.1% out of the total number of respondents have about 20 – 100 meters distance before fetching water, 18.2% is 100 – 200 meters distance, 11.6% has 200 – 300 meters distance, 17.9% has 300 – 400 meters distance, 19.3% out of the total number of respondents cover 400 – 500 meters distance, while 11.9% of the respondents cover 500 meters and above.

Table 6: Distance traveled to get to water point

Variable	Frequency	Percentage (%)
20 -100 meters	60	21.1
100-200 meters	52	18.2
200-300 meters	33	11.6
300-400 meters	51	17.9
400-500 meters	55	19.3
Above 500 meters	34	11.9
Total	**285**	**100.0**

Source: FieldSurvey, 2020

Available Water Source

Table 7 presents the operational hours of water sources, where 54 respondents representing 18.9% that it is day/morning, 147 representing 51.6% operational hours is day/afternoon, while 84 respondents representing 29.5% out of the total number of respondents operational hours of their source of water is night/evening.

Table 7: The operational hours of the water source available

Variable	Frequency	Percentage (%)
Day/morning	54	18.9
Day/ afternoon	147	51.6
Night/evening	84	29.5
Total	**285**	**100.0**

Source: Field Survey, 2020

Water Storage Dynamics

Table 8 presents results on how respondents store their water when fetched from the main source, 64 respondents representing 22.5% out of the total number of respondents fetches their water using plastic container, 76 respondents representing 26.7% out of the total number of respondents use steel container, 101 respondents representing 35.4% out of the total number of respondents use mud pot, while only 44 respondents representing 15.4% uses other forms of storage to store their water. Therefore, based on the results obtained on the field by respondents most of the respondents use mod pot in storing their water.

Table 8: How do you store your water when fetched from the main Source?

Variable	Frequency	Percentage (%)
Plastic container	64	22.5
Steel container	76	26.7
Mud pot	101	35.4
Others	44	15.4
Total	**285**	**100.0**

Source: Field Survey, 2020

Water Treatment

Table 9 presents the respondents views on whether their water is treated or not, where 92 respondents representing 32.3% out of the total number of responses said their water was treated, 193 respondents representing 67.7% out of the total number of responses said their water was not treated. Therefore, the result shows that most of the water used by the respondents is not treated.

Table 9: Is the water treated?

Variable	Frequency	Percentage (%)
Yes	92	32.3
No	193	67.7
Total	**285**	**100.0**

Source: Field Survey, 2020

Water Sanitation and Hygiene Programs

Table 10 presents the availability of water sanitation and hygiene programs organized in the Camp where, 173 respondents representing 60.7% out of the total number of respondents says water sanitation and hygiene programs are organized in the Camp, while 112 respondents representing 39.3% out of the total number of responses said water sanitation and hygiene programs are not organized in their various camps.

Table 10: Is there any water sanitation and hygiene programs organized in the Camp?

Variable	Frequency	Percentage (%)
Yes	173	60.7
No	112	39.3
Total	**285**	**100.0**

Source: Field Survey, 2020

Discussion of Findings

In areas with high attack rates, average per capita water consumption was found to be, 11 liters/person/day while the camp average was approximately 16 liters/person/ day (Cronin 2005). Of course, other factors were also found by (Schultz 2006) to increase transmission risk, such as sharing a latrine with three or more households (i.e., over, 20 people). Decades after WHO and UNHCR first introduced guidelines and standards on water and sanitation service provision for the humanitarian community, and several years after the concerted drive by the Sphere project to advocate for such standards, the humanitarian community is still struggling to fully meet the minimum emergency standards for water and sanitation provision for displaced persons.

All agency guidelines stress that 15 or 20 liters/person/day is the minimum need in camp situations and that it should be augmented at the first available opportunity though this is often misinterpreted as 'the estimated population figure is to be multiplied by 15 (or less) to give the daily amount of water to be pumped' with pipeline leakages, spillage, economic usage etc. often neglected. Financial resources are always a major constraint especially in protracted refugee camps and in 'forgotten' crises. However, even in situations where adequate financial resources were available, the insurgency in Borno State, there was reports of poor water and sanitation provision to displaced populations by less experienced actors who failed to adhere to accepted guidelines in project planning and implementation (Telford *et al*. 2006). Such issues are often compounded by access problems, inappropriate interventions and uncoordinated responses.

Despite the insights which have been outlined as to how Poor water and sanitation provision can compound morbidity and mortality, there is a need for greater awareness of the impact of resource gaps on the suffering related to poor water, sanitation, health and nutrition services, especially in protracted refugee situations. Detailed epidemiological studies can help demonstrate the cost-benefit payback of providing improved water and sanitation coverage and more effective hygiene promotion though these studies must consider how best to operationalize their findings.

In a related study on assess the role of International Organization for Migration (IOM) in the provision of Healthcare Services to Internally Displaced Persons (IDPs) in Borno State., the provision of portable drinking water for IDPs in various Camps: On adequacy of water supplied to the camp more than 70% out of the total number of respondents agreed that NGOs to meet the urgent need for drinking water among IDPs, water supplied by NGOs is clean, IOM has improved environmental cleanliness and hygiene for the habitation of the IDPs. The researcher found out that evidence abounds to show that while the government, NGOs and various agencies battled to help the IDPs, their efforts were inadequate. This is in agreement with the findings of some empirical studies. For instance, Olajide (2006), Fatile and Bello (2015), on studies on the challenges faced by the Nigerian government and NGOs in addressing the problems of IDPs and Managing Internally Displaced Persons in Nigeria: A case study of insurgency in North East Geo political Zone respectively, lamented the inability of the Nigerian government to adequately rise to the challenges.

This can help convince donors and financial controllers as to why more resources are justified. Until such information exists for a range of settings, provision should be well in excess of the minimum guideline values. Indeed, as Roberts (1998) states, 15 to 20 liters/person/ day are needed in the acute phase of a crisis and less may be sufficient in the later phase rather than vice-versa but the practicalities are often very difficult. For instance, in Nigeria and Chad, where there are large congregations of displaced persons in an arid environment, there are huge demands on the scarce local water resources and this gives rise to friction with the local communities. Even in the Crisis aftermath, in the initial stages an estimated 1 to 2 liters of clean water per

person per day was provided and this rose to 15 L/p/d after two months (Fesselet &Mulders 2006). Of course, water quantity is only one aspect of water provision with water quality also of central importance.

Stronger feedback mechanisms of water quality monitoring results to decision makers are needed to ensure health risks flagged by these monitoring programs are acted upon in a timely fashion. To overcome the issue of poor spatial and temporal understanding of water and sanitation supply, further household surveys (such as those described above) are central in helping to better understand dynamics at camp level. Targeted priority interventions can then be made to improve the situation. In addition, more frequent replacement of non-food items (including jerry cans for both water transport and storage) in protracted situations could help reduce food ration exchange or exploitation, coping mechanisms used by refugees to procure these items.
Dealing with the water, sanitation, health and nutrition sectors in isolation will not maximize the potential overall benefits, and may even hinder progress in the other sectors (UNHCR, 2006). In order to reach a consensus on priority strategies for food, nutrition and health interventions (which includes all of the compounding factors, such as water and sanitation provision, communicable diseases, access to non-food items, child and women's rights, gender and self-sufficiency strategies.

As a result, integrated plans of action are being drawn up in close consultation with partners on the ground. A range of project proposals has also been developed and submitted for private sector funding consideration in order to find some of the required resources. Such initiatives need increased and sustained support if real improvements and consistent compliance with our humanitarian standards are to be achieved and long-term impacts made on overall refugee health, wellbeing and dignity.

Conclusions

While, comprehensive research on water supply, sanitation and hygiene promotion issues among IDPs has remained a challenge, recent monitoring initiatives in non-Governmental organization and dedicated household surveys in two IDPs camps have allowed a better understanding of the current water and latrine coverage provision in refugee camps. This has shown that the overall median and average values for both water supply and sanitation coverage across NGOs refugee operations standards but that there are still large numbers of camps where the average water supply is inadequate and there are not enough latrines for the population. Indicators across the water, sanitation, health and nutrition sectors in refugee operations show how the quality of service or gaps in one sector has clear impacts on another. Also, crude comparisons between IDPs and local residents' mortality rates point to the shared difficult environmental and security conditions and insufficient resources impeding service provision for both. The limitations of such general view and the use of one annual value are acknowledged but this information has strengthened understanding of the effects of inadequate service provision. Household surveys showed how gaps in poor water and sanitation were affecting IDPs wellbeing and health; for instance, children collecting water has adverse effects on their education while in both camp survey's households reporting a case of diarrhea within the past 24 hours collect 26% less water on average than those who did not report any diarrhea cases.

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