



INVESTIGATIONS OF PEOPLE PERCEPTION ON DOMESTIC WATER SUPPLY SITUATIONS IN KANO METROPOLIS NORTHWESTERN, NIGERIA

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ABSTRACT

The problem of portable water supply has become an issue of global concern as governments all over the world are trying to make house-holds water accessible to all as easier as possible to meet the challenges for sustainable development goals. This research has been conducted to determine the people's perception on domestic water supply situation in Kano metropolis, Northwestern Nigeria. A self-designed questionnaire developed and distributed to the subjects using stratified sampling technique, and the data obtained has been presented in frequency and percentage. The results obtained revealed that, there is a scarcity of portable water supply to households in Kano metropolis. The problem emanated from lack of pipe-borne water which necessitated the dependence of the house-holds water supply on vendors that obtained water from boreholes and some hand-dug wells lacking proper hygienic practices. More so, the respondents were willing to pay for pipe borne water delivery, yet, they depend on vendors as their major water suppliers as alternatives. The unhygienic practices of the vendors and water sources posed threat to public health concerned.

Keywords: Domestic Water Supply, People Perception, Kano Metropolis, Nigeria,

INTRODUCTION

From the earliest days of creation to this day, man's life depends on water, among other things, for his survival. Human population, on the other hand, has continued to grow so much so that today, human population on planet earth is put at a little above 7 billion people (U.S Census Bureau, 2013). This huge population depends not only on water as a very important commodity or necessity for the existence of life but for the growth of both plant and animals not forgetting other needs like the industrial, commercial and aesthetic uses of water. Water use has been growing at more than twice the rate of population increase in the last century (Jenkinson, 2013). The use of water is expected to increase to an escalating 50% rate by the middle of the twenty first century, just between 2010 and 2025 in developing countries and 18% in the developed countries. Rural-urban migration escalates the problem of water use (Jenkinson, 2013; Vivan et al., 2014).

The current rise in population growth, urbanization and increasing demand exceeding the supply poses a major challenge to children, the elderly and pregnant women who are more susceptible to waterborne diseases and mortality (Chia et al., 2014). The provision of domestic water supply is one of the fundamental basic needs for human survival. Lack of access to adequate water supply induces the spread of water borne diseases. Access to water supply implies having sufficient water for personal and domestic uses of at least 50 to 100 litres of water/ person/ day from a safe source,

that is acceptable and affordable (i.e. cost of water should not exceed 3% of household income) and physically accessible (the water source should be within 1km of the home and collection time should not exceed 30 minutes) (UN, 2012). The global response to the problem of sustainable access to safe drinking water and basic sanitation culminated in the inclusion of specific water-related targets in the Millennium Development Goal (MDG) number seven. Kano metropolis, being the second high densely populated city in Nigeria is experiencing high demand for water use while its supply is facing several bottle-necks. As such, the demand do not meet the supply (Nura, 2014). This study is therefore conducted with the objective of identifying the problems of water supply situation within the metropolis with the view of suggesting lasting solutions to the problem.

RESEARCH METHODS

Study Area

Metropolitan Kano encompasses all the eight Local Governments of Dala, Fagge, Gwale, Municipal, Nassarawa, Tarauni, Kumbotso and Ungogo (Figure 1). It lies from Latitudes 11° 52' N to 12° 7' N and Longitudes 8° 22.5' E to 8° 47' E and is 500 metres above sea level. The state is the most populous all over the federation, there are quite number of industries and many economic activities such as markets, banking, hotels and restaurant.

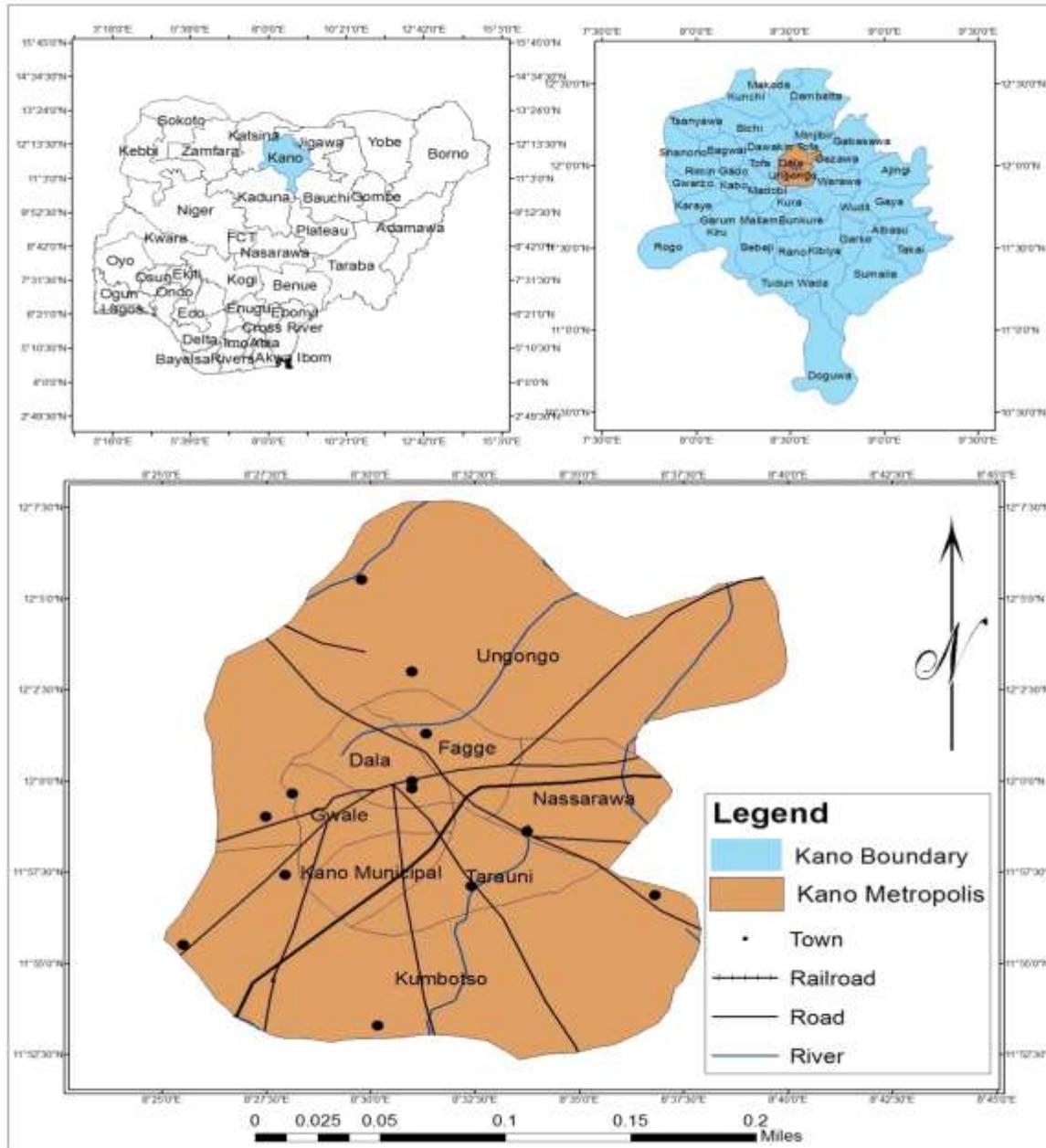


Fig 1. Kano Metropolis

RESEARCH DESIGN

The study is a descriptive survey aimed at assessing people’s perception on domestic water supply situation in Kano metropolis. Self-designed questionnaires were used as tools for data collection. The validity and reliability of the questionnaires were sought and confirmed by experts in research design from Department of Biology, Ahmadu Bello University, Zaria. Questionnaires were distributed to the sampled population using stratified random sampling method. This sampling method grants equal opportunity of each member of the total population to be selected within a specific sample area. The stratification was aimed at receiving feedback from low and high income earners of the study area. Also, both males and females were targeted for their input. Eight Local Government Areas forming the

metropolis were included for sampling. A total of 800 questionnaires were distributed while 750 completed questionnaires were retrieved. Information sought through the questionnaires included the demographic status of respondents, size of the household, age grades in the household, sources of water to the household, reliability and convenience of obtaining water from the water source, average time taken to collect water from the water source, problem of inadequate water supply, costs of securing water and level of satisfaction with water source. All data were analysed using descriptive statistics.

RESULTS AND DISCUSSION

The result for the demographic presentation of the data is presented in Table 1. The result showed that, age, gender,

marital status and educational background of the respondents affect people’s perception to problems of water supply situation in Kano. The result indicated that, majority of the respondents (46.7%) are between the age of 20-29 years while the least are 60 years to above. Most of these respondents were married males (66.7%) that have atleast secondary education. More so, small family size (2-5) and women gender affects peoples’s perception. This is in agreement with the finding of Hunter et al. (2007) and Bi et al. (2010) who reported gender, age and family size as factors

affecting peoples’ perception to water supply situation. Similarly, Tadesse et al. (2013) reported high women participation in issues related to water supply. It is generally a re-known norm in Kano metropolis that women and young girls are tasked with the duty of procuring water for the family. This finding is in line with that of Omole and Ndambuki (2014) as women have higher environmental awareness than men and are more likely to adjust their behavioral patterns to protect the environment as stressed by Hunter et al. (2007).

Table 1: Socio-Demographic Characteristics of Respondents

Parameter	Response	Frequency	Percentage (%)
Age	20-29 Years	350	46.7
	30-39 Years	200	26.7
	40-49 Years	135	18
	50-59 Years	50	6.6
	60 Years to Above	15	02
TOTAL		750	100
Gender	Male	500	66.7
	Female	250	33.3
TOTAL		750	100
Marital Status	Married	500	66.7
	Single	240	32
	Divorced	10	1.3
	Widow/Widower	0	0.00
TOTAL		750	100
Educational Status	Non Formal	0	0
	Primary	150	20
	Secondary	450	60
	Tertiary	150	20
TOTAL		750	100
Family Size	2-5	306	40.8
	6-9	250	33.3
	10-13	120	16
	14-17	74	9.9
	18-Above		100
TOTAL		750	
Responsibility for Water supply to the family	Father	32	4.3
	Mother	70	9.3
	Male Children	79	10.5
	Female Children	467	62.3
	Maids	102	13.6
TOTAL		750	100

Source; Fieldwork, 2020

The result for the people’s perception on water sources is presented in Table 2. The result indicated that more than 81.3% of the respondents do not have access to pipe borne water and as such 79.1% of the subjects depend on boreholes as their major source of drinking water. This finding agrees with that of Omole and Okunowo (2015) who reported about 81% of the residents in Ogun state of Nigeria obtained water from groundwater resources rather than pipe borne water source. The use of boreholes as the major water source can probably be the reason behind inefficient water supply in the

metropolitan Kano. This is in conformity with the findings of Adeniran and Oyelowo (2013) who reported boreholes as inefficient source of water to the human population in University of Lagos, Nigeria. Similarly, Oki et al. (2001), Alcamo et al.(2003b), Arnell (2004), Oki and Kanae (2006), Alcamo et al (2007) and Islam et al. (2007) have individually reported house-holds water scarcity due to inefficient use of surface water bodies. Previous findings (Oki and Kanae 2006; Shah et al 2007; Freydank and Siebert 2008) have

stressed the use of surface water as portable households water supply source.

The larger percentage of therespondents (64.0%) sourced water fromvendors in which 80.6% of them obtained water from the bore holes rather than hand dug wells. This coincide with (Nuraet.al, 2020) which reveals that majority of people relied on water vendors as source of of water supply in Unguwa Uku. The hand-dug wells were exposed to pollution arising from run-off, deadrodents and other forms of contaminants and to some extents, serve as sinks forindustrial, agricultural and domestic wastewater as stressed by Omole and Longe (2012). More so, as Omole et al.(2015a) puts it, water vendors and packaged water sellersare known toobtain water from cheap sources in order to maximizeprofit. This threatens public health. More so, as boreholes and hand-dug wells were integral parts of ground water sources, the continuous used of theses water sources might affect the ground water negatively. This finding agrees with that of Adelana et al.(2008) and Omole (2013) who individually reported that, high dependence on ground water will serve as a manifestation for lack of proper utilization of surface water sources and creates more pressure on the ground water. This therefore threatens availability of drinking water as half of the world’s needed drinkingwater is from ground water source (Palaniappan et al., 2010). However, rain and rivers were not seeing as the major water sources in the metropolis due probably to the seasonal availability of rain in the area.

The result for the willingness of the respondents to pay for pipe-borne water delivery showed that 79.1% of them are

willing to pay for the service. This is in line with the assertion made by the United Nations (2012) that, it has not ruled that personsshould not pay for water at all.This means that, the respondents are urging the government to bear the responsibility of supplyingwater to residents. Similarly, the distance to the water source negatively affects its distribution and supply in metropolitan Kano as described by 19.9% of the respondents. However, majority of the respondents do not viewed distance to water source as a problem probably because they depend on vendors and some spent the whole day in water queuing. This is in conformity with the findings of Omole et al. (2015b) and Abdulkadir et al., (2019) who reported similar findings.

Majority of the respondents (81.3%) opined that, they are in doubt of the proper hygienic condition of the water sources for household’s consumption in Kano metropolis. The household source ofwater may be unsustainable because much of theprospecting for water is done without proper technicalexpertise. Sharp practices by quacks have led to lossof resources occasioned by failure of thousands of boreholes (Eduvie, 2006). Many otherwells are alsopolluted because they are sited at close proximity toeither pit latrines or gullies. This study also reported that only 17.3% of the respondents were satisfied with their household’s water sources while majority of the subjects are not. Thus, the authority have to do the needful to ensure water is adequately available to the inhabitants of Kano metropolis. This finding is in agreement with that of Jideonwo (2014) whoreported that Lagos residents paid private vendors’ atleast 5 times more the rates of the Lagos WaterCorporation.

Table 2: Water source

S/N	Response	Fequency/Percentage (%)			
		SA	A	SD	D
1	Pipe born water is our source of water	75(10%)	65(8.7%)	400(53.3%)	210(28%)
2	The respondents sourced water from borehole	356(47.5%)	237(31.6%)	112(14.9%)	45(6.0%)
3	People in the study area sources water from vendors	250(33.3%)	230(30.7%)	120(16%)	150(20%)
4	People source water from hand dug well	44(5.8%)	101 (13.4%)	355(47.3%)	250 (33.3%)
5	People source water from rain	52 (6.9%)	97 (13%)	450 (60%)	151 (20.1%)
6	People source water from the river	0.0 (0%)	0.0 (0%)	580(77.3%)	170(22.7%)
7	Willing to pay for pipe borne water	356 (47.5%)	237 (31.6%)	112 (14.9%)	45 (6.0%)
8	Distance from the water source not a problem	52 (6.9%)	97 (13%)	450 (60%)	151 (20.1%)
9	Hygienic condition of water source is satisfactory	75 (10%)	65 (8.7%)	400 (53.3%)	210 (28%)
10	Satisfied with the water source	50(6.6%)	80(10.7%)	500(66.7%)	120 (16%)

Source: Field Work, 2020.

CONCLUSION

It was concluded from the findings that, there is a serious water scarcity to vast majority households in Kano metropolis. Despite the fact that, government spent huge amount of money to water supply project in the state and there are about three giant water treatment plants of Tamburawa, Challawa and Watari. Metropolitan Kano suffer from domestic water shortages this necessitated the households to source water from vendors, rain harvesting, borehole and hand dug wells as well as other sources that lack proper hygienic practices. This, therefore, poses a threat to public health.

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