

A Survey of Forums for Water Education in Lokoja, Kogi State, Nigeria

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Abstract

The dwindling global fresh water has made the call for water conservation an expedient action, in areas of water abundance as well as areas where water deficit is already a great challenge. The place of water education is pivotal to how people understand their obligations and efforts to preserving water. Global and national programmes initiated to promote water education are laudable but more water users can be reached at the local level. This study provides results that show the preferred forums that Lokoja residents would want to access water education. 524 households were selected in both planned and unplanned neighbourhoods, using multi-stage sampling process. At the first stage using random sampling, neighbourhoods were selected from the two strata; thereafter systematic sampling was adopted to select households. Structured interview schedule was administered to gather data on preferred mediums of water education: schools, state water boards, non-governmental organizations, community meetings, television/radio and newspapers were the mediums put to the respondents. Majority of the respondents prefer the state water board and television/radio to disseminate water education. The preference for non-governmental organizations and newspaper are the least among the six mediums provided in the structured interview schedule. Water education using not a single medium but different mediums will increase public awareness and encourage behavioural change that would promote greater practise of water conservation at household levels.

Keywords: Fresh Water, Water Education, Water Conservation, Nigeria.

1. Introduction

Societal and cultural development is closely tied to availability of fresh water (UN-Water, 2015). In the past few decades' great pressure has been placed on the available fresh water resources as a result of high population growth, climate change, increasing consumption levels, urbanization among several other factors (UNESCO, 2014). By the year 2030, the world's water withdrawal would be 6,900 billion m³, which is forty percent in excess of the existing 4,200 billion m³ accessible, reliable and sustainable water supply from surface and groundwater sources (2030 Water Resources Group, 2009). The forecast by the United Nations Population Fund (2003) is that by 2025, if the present rate of water consumption continues, two– third of the world's population may be subjected to varying levels of water scarcity, ranging from moderate to high incidence of water scarcity.

The increasing rate of world water use, problem of water scarcity, degraded water sources, among several other challenges on water resources, call for greater water stewardship (UNESCO, 2014). While people use environmental resources to meet their diverse needs, the

resources are also to be safeguarded for the future in the face of increasing world population and its attendant over extraction of resources. Therefore the need to responsibly use, protect and preserve environmental resources should not only be limited to areas where the resources are scarce but it should also extend to areas where the resources are in abundance (Environmental Quality Board, 2008; Sutton, 2004).

The U.S. Environmental Protection Agency identified three measures of water conservation that would make people good managers of water. Among the different categories contained in level one measure is water education and information (USEPA, 1998). While the World Water Day, an initiative of the United Nation, commemorated every year on 22nd of March starting in 1993, has promoted global awareness on getting safer water to all (UN- Water, 2007); the Federal Ministry of Water Resources in Nigeria put in place programmes annually to mark the day on a national level (Ihejirika, 2016). Initiatives and programmes at state levels and local levels are also necessary to increase people's awareness about water related matters as this will lead up to responsible actions to conserve water resources.

Residents of Lokoja town meet their domestic water needs from several sources, largely from surface and ground water. The availability of these fresh water sources is highly variable through the year. With more households having access to groundwater than potable water (Yusuf and Agabe, 2010; Abenu, 2016), continuous high withdrawal of groundwater, which is not as quickly recharged as surface water, may have serious consequences for sustainable water management in the long run. The need for water education which would promote water conservation in the town is therefore necessary. This study consequently investigates the different forums that Lokoja residents would prefer to have water education propagated.

2. The Study Area

The land mass of Lokoja town is 3,518 km² (Abenu, 2016). In 2006, its population was 196, 643 (National Population Commission, 2006) and it is estimated to be growing at 3.2% (National Population Commission, 2009). Lokoja is located between latitude 7^o 45¹ and 7^o 52¹ north of the equator. Its longitude stretches from 6^o 39¹ to 6^o 49¹ east of the Greenwich meridian (Audu and Rizama, 2012).

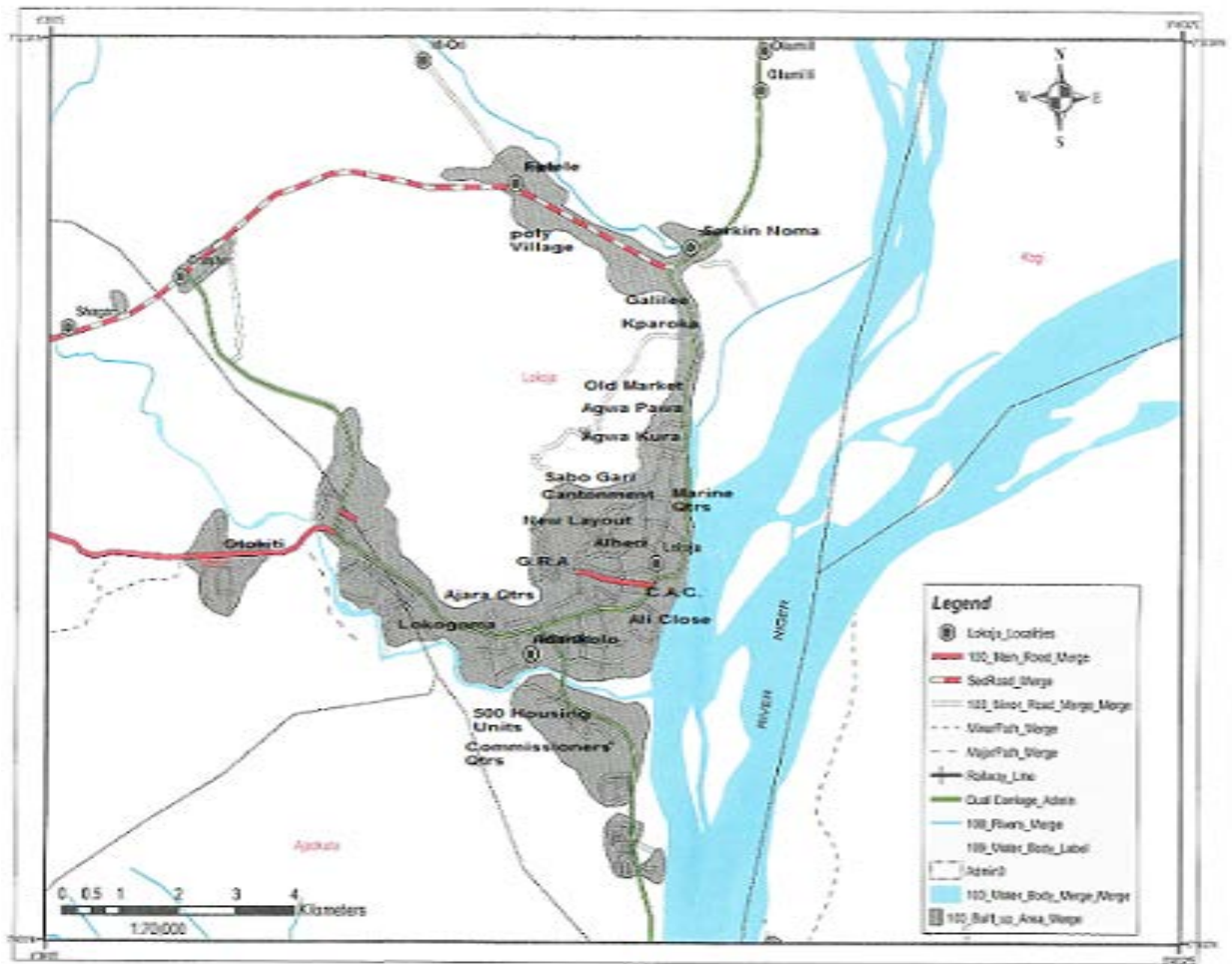


Figure 1: Lokoja Neighbourhood Map

Source: Findings and Solution Consult Abuja, 2013

The two distinct seasons in the town are wet and dry seasons. The wet season, records about 1215mm of rain annually, mainly from April to October, with its peak occurring in September (Abenu, 2016). The mean daily temperature is 27.7°C (Audu and Rizama, 2012).

Rivers Niger and Benue are the main sources of surface water in the area, other sources of surface water in the town are smaller streams like Mmeme, Akpomoba and Donko. In Lokoja, groundwater sources also form a major component of the water resources. It is drawn from unconfined aquifers (Omali, 2014).

3. Research Methodology

Structured interview schedule administered to heads of households was the primary source of data used in this study. A multi-stage sampling technique was employed for the household survey in Lokoja, which has two types of neighbourhoods: planned and unplanned. The planned neighbourhoods are fewer in number (n=8) compared to unplanned neighbourhoods (n=14). Stratified random sampling was used in the selection of neighbourhoods at the first stage. To achieve proportional representation of each category, the selection of the nine sampled neighbourhoods was in the ratio of 1:2, with the highest coming from the unplanned neighbourhoods (n=6) and the remaining part (n=3) made up of the planned neighbourhoods. Systematic sampling was thereafter used at the second stage, where every tenth unit household was chosen in the household survey from the nine neighbourhoods.

Table 1: Structured Interview Schedule Administered to Sampled Households in Lokoja

Neighbourhoods		Number of Respondents	
		Frequency	Percent (%)
Planned Neighbourhoods	Otokiti	32	6.1
	Ali Close	46	8.8
	Lokogoma	74	14.1
Unplanned Neighbourhoods	Sarkin Noma	68	13.0
	Old Market and environs	64	12.2
	Felele	124	23.7
	Adankolo	78	14.9
	Poly Village	24	4.5
	Galilee and Kporoka	14	2.7
Total		524	100%

Source: Fieldwork, 2014/2015

4. Results and Discussion

a) *The School as a Forum for Water Education*

Dissemination of Water education through the schools was only adopted by 26 percent of the respondents in all the sampled neighbourhoods. In the planned neighbourhoods, this varied from 15 percent to 35 percent; while in the unplanned neighbourhoods it varied from 9 percent to 50

percent (Table 2). From the result, only Galilee, Sarkin-Noma and Lokogoma, recorded some significant values of between 35 to 50 percent of respondents being in favour of the school as a place to access water education. In considering the significance of this result, it was noted that the respondents who took part in this survey were mostly adults who were out of the school system. Therefore, the preference for this form of information dissemination was not quite significant as respondents would rather get information from sources that are more inclusive than schools which would automatically exclude those not within the system.

Table 2: The School as a Forum for Water Education

Neighbourhoods		N	Schools	
			Yes	No
Planned Neighbourhoods	Ali Close	46	7(15%)	39(85%)
	Lokogoma	74	26(35%)	48(65%)
	Otokiti	32	8(25%)	24(75%)
Unplanned Neighbourhoods	Adankolo	78	20(26%)	58(74%)
	Felele	124	33(27%)	91(73%)
	Galilee and Kporoka	14	7(50%)	7(50%)
	Old Market and environs	64	6(9%)	58(91%)
	Poly Village	24	5(21%)	19(79%)
	Sarkin - Noma	68	26(38%)	42(62%)
Total		524	138(26%)	386(74%)

Source: Fieldwork, 2014/2015

b) The State Water Board as a Forum for Water Education

The belief among respondents that the agency responsible for potable water supply is in the best position to educate people on water education was reflected in the number and percentage of respondents who chose this option. In all, 66 percent of respondents felt that the source of information water matters should be from the state Water Board (Table 3). Most of the results in the neighbourhoods were very close to this general percentage as 7 neighbourhoods recorded values that were greater or equal (\geq) to 60 percent. Otokiti and Galilee were the only

neighbourhoods with values less than 60 percent. This result shows that respondent’ expectations of the state Water Board in water resource management goes beyond simple water supply. They expect an expansion of the roles to include water education and all water resources related matters, including ways of preserving this important life-sustaining resource.

Table 3: The State Water Board as a Forum for Water Education

Neighbourhoods		N	State Water Board	
			Yes	No
Planned Neighbourhoods	Ali Close	46	40(87%)	6(13%)
	Lokogoma	74	49(66%)	25(34%)
	Otokiti	32	15(47%)	17(53%)
Unplanned Neighbourhoods	Adankolo	78	49(63%)	29(37%)
	Felele	124	83(67%)	41(33%)
	Galilee and Kporoka	14	5(36%)	9(64%)
	Old Market and environs	64	50(78%)	14(22%)
	Poly Village	24	16(67%)	8(33%)
	Sarkin - Noma	68	41(60%)	27(40%)
Total		524	348(66%)	126(34%)

Source: Fieldwork, 2014/2015

c) The Non Governmental Organizations as Forums for Water Education

Non-governmental organizations are not a regular source of information for many residents in Lokoja, as indicated by the result in Table 4. The capacity of these organizations to give the needed information was in doubt as most respondents did not associate them with dispensing information on water related topics. Agencies that are common place for them include agencies that manage emergencies like the Red Cross, the Red Crescent, and others which carry out enlightenment campaigns on health issues in the communities. Besides, it was discovered that not all respondents in the study have had direct contact even with these NGOs that are well recognised. Only a few of the respondents in all the neighbourhoods, planned and unplanned, indicated willingness to be informed on matters of water reuse by the NGOs.

Table 4: Non Governmental Organizations as Forums for Water Education

Neighbourhoods		N	Non Governmental Organizations	
			Yes	No
Planned Neighbourhoods	Ali Close	46	1(2%)	45 (98%)
	Lokogoma	74	15(20%)	59(80%)
	Otokiti	32	8(25%)	24(75%)
Unplanned Neighbourhoods	Adankolo	78	13(17%)	65(83%)
	Felele	124	28(23%)	96(77%)
	Galilee and Kporoka	14	1(7%)	13(93%)
	Old Market and environs	64	14(22%)	50(78%)
	Poly Village	24	2(8%)	22(92%)
	Sarkin - Noma	68	6(9%)	62(91%)
Total		524	88(17%)	436(83%)

Source: Fieldwork, 2014/2015

d) Community meetings as Forums for Water Education

The different neighbourhoods have their unique ways of passing information through diverse associations that exist within them such as the Association of Landlords, tenants’ meetings, tribal meetings, etc, all of which bring people with similar interests together. This reason was, perhaps, responsible for all the sampled neighbourhoods accepting the use of community meetings as a means of getting information on water reuse. These informal meetings are open forums for discussing matters that have direct impact on the people.

Old Market and environs and Lokogoma were the neighbourhoods where more than half of the respondents responded in favour of the use of community meetings. In Felele, close to half of the respondents were also in favour of the use of community meetings. The result revealed the preference for community meetings varying from 18 to 67 percent, a high difference between the least and the highest figures in the sampled neighbourhoods.

Table 5: Community meetings as Forums for Water Education

Neighbourhoods		N	Community meetings	
			Yes	No
Planned Neighbourhoods	Ali Close	46	11(24%)	35(76%)
	Lokogoma	74	38(51%)	36(49%)
	Otokiti	32	7(22%)	25(78%)
Unplanned Neighbourhoods	Adankolo	78	18(23%)	60(77%)
	Felele	124	61(49%)	63(51%)
	Galilee and Kporoka	14	3(21%)	11(79%)
	Old Market and environs	64	43(67%)	21(33%)
	Poly Village	24	8(33%)	16(67%)
	Sarkin - Noma	68	12(18%)	56(82%)
Total		524	201(38%)	323(62%)

Source: Fieldwork, 2014/2015

e) Television/Radio programs as Forums for Water Education

Television and radio are mass media that air educational programs among other programmes that they put out to their viewers or listeners. But while a little more than half of the respondents were in favour of these mediums being used to spread information on water education in Lokoja, the rest, quite unexpectedly, were not, even though most of them have these electronics in their homes (Table 6). No doubt, the problem of power outages and respondents not being close to their Television or radio all day long dissuaded many from supporting these options. In the planned neighbourhoods, opinions varied from 34 to 70 percent, while in the unplanned neighbourhoods, it varied from 44 to 64 percent.

Table 6: Television/Radio programs as Forums for Water Education

Neighbourhoods		N	Television/Radio programs	
			Yes	No
Planned Neighbourhoods	Ali Close	46	32(70%)	14 (30%)
	Lokogoma	74	45(61%)	29(39%)

	Otokiti	32	11(34%)	21(66%)
Unplanned Neighbourhoods	Adankolo	78	34(44%)	44(56%)
	Felele	124	79(64%)	45(36%)
	Galilee and Kporoka	14	7(50%)	7(50%)
	Old Market and environs	64	30(47%)	34(53%)
	Poly Village	24	14(58%)	10(42%)
	Sarkin - Noma	68	30(44%)	38(56%)
Total		524	282 (54%)	242 (46%)

Source: Fieldwork, 2014/2015

f) The Newspaper as a Forum for Water Education

The print media as a source of information for Lokoja residents on water education was not chosen on a large scale. The low interest in accessing grey water information through the print media ran across all the sampled neighbourhoods (Table 7). In the neighbourhoods that supported the use of the print media, the percentage of respondents that chose the print media varied from 3 to 34 percent. All the neighbourhoods that supported the use of the print media recorded very low percentages, with Old Market and environs having the highest record of 34 percent.

Several reasons may be responsible for why only 12 percent of all the respondents interviewed wanted the print media. First, although a good number of the respondents were educated, having obtained secondary and tertiary education, the cost of buying newspapers did not make this an attractive option. Secondly, even those who could afford to buy the dailies would probably not have the time to read every single item in the papers. And if the section on water related matters is overlooked, the essence of putting such vital information in the newspapers would be defeated. Thirdly, this forum is not as interactive as some other forums like the community meetings, which would allow respondents to seek clarifications on areas where they may have difficulty in comprehending.

Table 7: The Newspaper as a Forum for Grey Water Education

Neighbourhoods		N	Newspapers	
			Yes	No
Planned Neighbourhoods	Ali Close	46	2(4%)	44(96%)
	Lokogoma	74	5(7%)	69(93%)
	Otokiti	32	1(3%)	31(97%)
Unplanned Neighbourhoods	Adankolo	78	13(17%)	65(83%)
	Felele	124	15 (12%)	109(88%)
	Galilee and Kporoka	14	0(0%)	14(100%)
	Old Market and environs	64	22(34%)	42(66%)
	Poly Village	24	3(12%)	21(88%)
	Sarkin - Noma	68	4(6%)	64(94%)
Total		524	65(12%)	459(88%)

Source: Fieldwork, 2014/2015

5. Conclusion

To bring about better awareness on water related matters, especially the one that promotes water conservation, among the residents of Lokoja, more respondents were in favour of the state Water Board, electronic mass media and community meetings being the most preferred forums for disseminating the needed information. Only very few respondents were in support of the use of the print media and the Non-Governmental Organizations.

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