



The Nigerian Journal of
**Sociology
and Anthropology**

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Volume 14, No. 1, June 2016

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Socioeconomic Context of Water, Sanitation and Hygiene Practices in Delta, Edo and Ekiti States, Nigeria

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Abstract

Understanding issues related to Water, Sanitation and Hygiene (WASH) practices has become more critical in Nigerian communities in view of the increasing prevalence of diseases due to lack of safe water and poor hygiene behavior in the country. This cross-sectional exploratory survey employed intra-method triangulation to collect data through In-depth Interviews, Focus Group Discussions and Unobtrusive observation from purposively selected communities in Delta, Edo and Ekiti states. Findings reveal that communities are willing to pay for WASH services insofar as the payment will add value to their lives; the rate of community participation and performance in WASH activities is a function of active mobilization of the people and effective monitoring of WASH committee members. In view of the benefits of cleanliness for a healthy population, continuous education and sensitization of the people on WASH should be sustained in relevant communities.

Key Words: Prevalence of disease, poor hygiene behavior, community mobilization, continuous education, effective monitoring.

Background

Diseases related to poor water, sanitation and hygiene practices contribute significantly to the burden of morbidity and mortality, particularly in Nigeria and other countries in sub-Saharan Africa (Oloruntoba, Folarin and Ayede 2014). As was indicated, diarrhoea still occurs in high proportions in Nigeria and accounts for approximately 121,800 deaths annually, mainly attributable to poor water, sanitation and hygiene behavior (World Bank 2012). Thus, with the inclusion of deaths arising from typhoid, dysentery and other associated diseases, the statistics on deaths linked to water and hygiene related diseases in the country rise disproportionately (Yussuf, John and Oloruntoba 2014). Moreover, Sesay (2012) noted that poor sanitation practices such as indiscriminate disposal of wastes pollute and degrade the environment with its concomitant health consequences. Poor sanitary condition, lack or limited access to improved water and open defecation are some of the factors identified as critical in defining environmental conditions (WHO and UNICEF, 2014; UNICEF, 2003) and are implicated in a number of diseases in rural communities and urban slums, especially in less developed countries of Africa and Latin America (Yussuf, John and Oloruntoba 2014).

The 2014 United Nations' report on the Millennium Development Goals (MDGs) highlighted the progress made so far on MDG 7, which focuses on Ensuring Environmental Sustainability. Goal-7 aims at halving the proportion of people without sustainable and safe drinking water and basic sanitation by 2015, as well as achieving significant improvement in the lives of at least 100 million slum dwellers by 2020. Although the report indicates significant improvement in the conditions of slum dwellers globally and also on track to

meeting the drinking water target in the future, it is still doubtful whether that target was however met, by the end of 2015, as proposed.

The WHO and UNICEF 2014 publication on the progress made so far on drinking water and sanitation showed that well over 2 billion people have access to improved sources of water and sanitation. The report specifically reveals that of the 743 million people that lack access to improved sources of drinking water, 325 million or 43 percent reside in sub-Saharan Africa. About 173 million of these vulnerable people rely on untreated surface water for consumption; 90 percent of such people are found in rural areas. It also reported that 82 percent of the one billion people practicing open defecation in the world live in 10 countries including Nigeria which was ranked 3rd (WHO and UNICEF, 2014). It was estimated that 39 million Nigerians practice open defecation in gutters, bushes, streams and rivers (WHO and UNICEF, 2014). The message from the above scenario is clear particularly as it relates to life threatening but avoidable diseases in relevant communities.

Globally, diarrhoea resulting from inadequate drinking water, sanitation, and poor hand hygiene practices is responsible for an estimated 842,000 deaths every year, or approximately 2,300 people per day (Prüss-Ustün, Bartram, Clasen, Colford, Cumming, *et al.* 2014). According to USAID, in 2008 alone, only 42 percent of rural dwellers in Nigeria had access to drinkable water compared to 75 percent in urban centres. The situation is exacerbated by ignorance wherein many people are unaware of strategies for prevention common diseases such as cholera, typhoid, dysentery and diarrhoea among others. In Nigeria for instance, the majority of citizens, even in urban centres, lack knowledge of proper hygiene and sanitary behaviour to prevent occurrence of medical conditions especially communicable diseases (Ochekpe, 2011).

In a recent study by Orji, Okoli and Ezenwaji (2015) on open defecation, water supply and waste disposal system in Onitsha, a south-eastern Nigerian city, the occurrence of dysentery, diarrhoea, typhoid and malaria was found to be very high. Although malaria was reported to be the most prevalent disease in the area and affected more females than males, diarrhoea occurred mostly among children aged 0 to 4. In the same vein, Yussuf *et al.* (2014) reported that poor environmental condition among slum dwellers in Ijora-Badia in Lagos State had direct negative effect on the health of people living in the area. Similar situation was reported from studies on Ibadan which linked high prevalence of water-borne diseases particularly typhoid, dysentery, cholera and diarrhoea, especially among poor urban dwellers, to inadequate water supply condition (Lawoyin *et al.*, 1999; Adelekan, 2006; Oguntoke *et al.*, 2009).

One of the major diseases related to poor water and sanitation situation in Nigeria is cholera and as Adagbada, Adesida, Nwaokorie, Niemogha and Coker (2012) indicated, since the first cholera outbreak in 1972, there have been intermittent outbreaks of the disease in the country. In 2010 when a severe outbreak of cholera was recorded, approximately 3,000 cases were reported out of which 781 deaths occurred with a case fatality rate that ranged between 7.6 and 23 percent Adagbada *et al.*, (2012). According to Udeme (2010), less than half of Nigeria's population has access to improved sanitation, a condition that persistently undermines avoidance and/or reduction in outbreak of diseases in poor neighborhoods. As USAID (2008) indicated, only 32 percent of Nigerians in rural and urban areas reside in environments that portend improved sanitation, a situation that has remained disappointingly

the same over the years. An estimated 350-500 million cases of malaria is reported annually and 1-3 million people, a majority of them children die from the disease which is linked to dirty environment that give impetus and credence to breeding of mosquitoes.

Studies indicate that children particularly those under five years are most vulnerable to diseases tied to environmental degradation. Research reveals that 40 percent of children in Nigeria die before their fifth birthday mainly from diarrhoea, acute respiratory infections, malaria, malnutrition and measles (Federal Ministry of Water Resources, 2013). Statistics show that over 85 percent of diarrhoea cases result from lack of safe water supply, improved sanitation and hygiene and accounts for 3 in 5 deaths among children in Nigeria. Hence, a sure way of reducing significantly deaths among children in the country is by improving water supply, sanitation and hygiene (Environmental Health Project, 2012; Federal Ministry of Water Resources, 2013). An estimated 300,000 Nigerian children die from malaria annually (UNICEF, 2000), making it the major cause of childhood mortality in the country (Adeneye *et al.* 2013; 2014). In addition, diseases such as pneumonia, diarrhoea, measles and HIV/AIDS account for over 70 per cent of the estimated one million under-five deaths in Nigeria (UNICEF 2015).

Proper waste management has been identified as a panacea to ameliorating both incidence and prevalence of diseases associated with poor environmental condition in increasingly urbanizing communities which has not been given the desired attention in most places. For instance, Ikemike (2015) noted that poor waste management in Bayelsa State is alarming and has contributed to pollution of underground and surface water, accounting for among other things offensive odour and diseases. The situation described in Bayelsa State also applies to other states in Nigeria. Statistics from these studies clearly reveal that rural communities and slums where most poor people reside are disproportionately affected by water, sanitation and hygiene challenges than conventional urban centres. Therefore, infrastructural and technical support from government and agencies will yield greater developmental dividend on prospective rural beneficiaries who constitute a large majority of the population in most of these countries (Population Reference Bureau 2015). The main objective of this study is to examine individual and communal factors that impinge on water, sanitation and hygiene practices in selected communities in order to effectively make context specific recommendations.

Theoretical Framework

This article is anchored on the Theory of Change and Functionalism. As has been established in literature, much of the ill-health affecting individuals in less developed societies are traceable to lack of safe water (Park 2009). Nigeria presents a typical example of non-existence or poor access to water resource, with rural communities disproportionately affected. Consequently, healthy sanitary and hygiene practices are undermined at individual household and community levels. The theory of change derives its impetus from these water related inadequacies and the concomitant health consequences on the inhabitants of affected communities. The central idea of the perspective is that something must change towards a better water, sanitation and hygiene situation, be it services, behavior or any other factor.

The theory supposes that for the WASH context to improve in different locations, change in behavior of various stakeholders must be prioritized. For instance, governments,

service providers and community members as partners in development individually and collectively are expected to resolve to alter water, sanitation and hygiene situation that contradicts and compromises healthy living in communities. To be sure, the role of government in the provision of safe water for rural inhabitants, where water shortages are pervasive and debilitating, cannot be overstated. On the part of community members, maintaining water facilities when they are provided and exhibiting behavioral change towards proper hygiene and sanitation practices are essential ingredients of change.

The Functionalist perspective conceives the community of humans as consisting of different parts that work collectively for the maintenance of the whole. The interdependence of sub-units as an essential ingredient of the functioning of a system is to the extent that the malfunctioning of any part affects the entire structure (Ritzer 2008). Therefore, availability of infrastructures or the lack of it impinges on the function-ability or dysfunctionality of the system. This perspective will view availability of safe and wholesome water as a prerequisite for appropriate sanitation and hygiene behavior in a community. Apart from the fact that WASH situation in a community will largely determine the health status of its members, a healthy population is more productive and expends less on healthcare financing. In what follows, we present a conceptual framework which synthesizes the two theoretical perspectives adopted for this study.

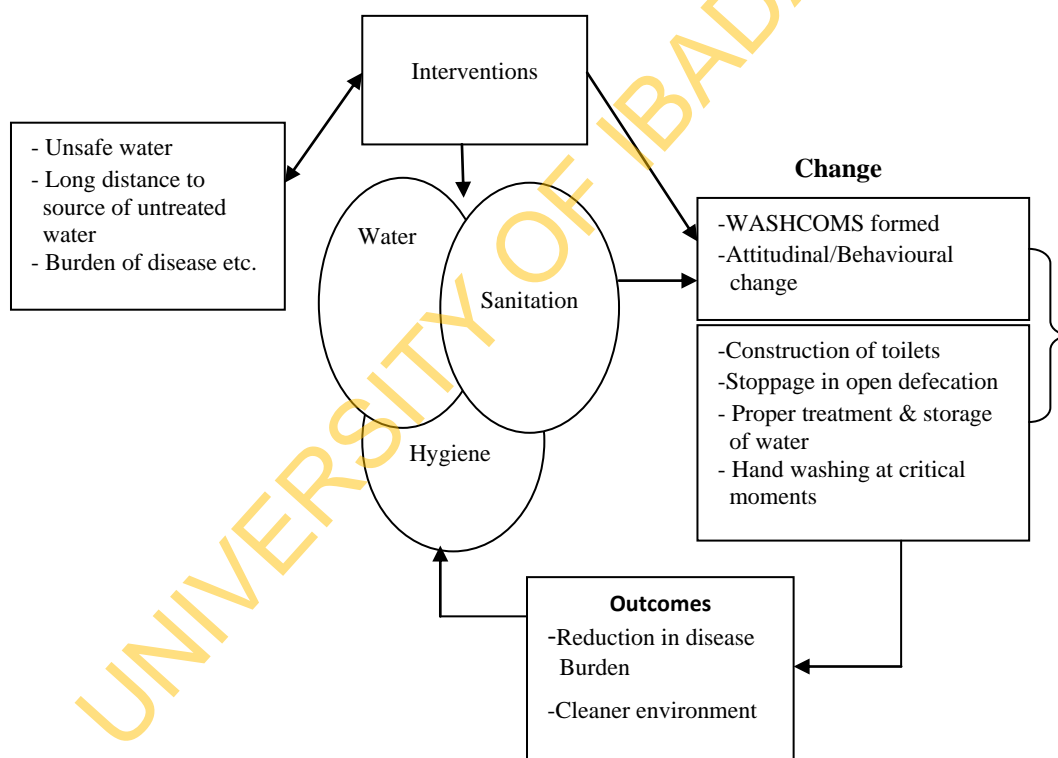


Figure 1: Conceptual Framework
Source: Authors, 2016

The framework shows that unsafe water for household use, long distance to source of water and high prevalence of avoidable diseases in rural communities necessitate interventions to alter a prevailing negative situation. The diagram also indicates that the WASH project as an intervention led to formation of WASH committees (WASHCOMS) to guide activities of

individuals targeted at attitudinal and behavioral change. These changes manifest in construction of toilets for household use, desisting from practicing open defecation, treatment and proper storage of drinking water and hand washing at critical moments among others. The immediate outcomes of such change will be reduction in water and hygiene related diseases and cleaner environment.

Materials and Methods

The research employed a multistage sampling technique to select respondents and participants for the study. The first stage involved purposive selection of Delta, Edo and Ekiti states where Water, Sanitation and Hygiene (WASH) projects are well established. The second stage also involved purposive selection of Local Government Areas (LGAs) on the basis of existence of WASH services. The LGAs included *Isoko* South and *Ndokwa* in Delta; *Ovia* Southwest and *Etsako* West LGAs in Edo; and Ekiti West and *Gboyin* LGAs in Ekiti State. The specific communities where data collection took place in the study LGAs across the three states were selected through the simple random technique. Respondents and participants for the study were purposively selected on the basis of their involvement and/or knowledge about WASH activities in the community.

The cross-sectional survey research design was employed. Intra-method triangulation of qualitative methods was utilized to collect data from a wide spectrum of community members and stakeholders. Data collection was undertaken in fifteen communities; five in each of the states. Each of the interviews and group discussion sessions lasted for about one hour during which period a range of issues were discussed. A total of 22 FGD sessions consisting of 6-10 participants were conducted with different groups in selected communities of the selected states. These included: (a) 6 sessions with different category of women such as women leaders, women of low socioeconomic status among others; (b) 6 sessions with different categories of men; (c) 4 FDGs comprising men and women; (d) 3 FGD sessions with male youth; (e) 3 sessions with female youth in selected communities.

Twenty IDIs were conducted with different categories of community members including women, elders, youth among others; Rural Water Supply and Sanitation Agency (RUWASSA) and officials of the Community-based WASH Committees (WASHCOMs) for the purposes of understanding relevant WASH service delivery issues. In each of the selected community, at least two officials of WASHCOMs were interviewed.

In addition, 16 unobtrusive observations were undertaken in this study. The purpose of adopting this technique was to generate nuanced information in a way that other methods including FGDs, IDIs and behaviour trials could not achieve. It is a direct approach to data collection in which the respondents/participants would necessarily not interfere with the study process. That way, actual behaviour was noted rather than relying on reported activities of those being studied. For instance, the sources of water available to respondents including issues such as distance to source of water, financial cost of water supply and persons mostly responsible for fetching water, privacy of toilets, open defecation and hand washing during some domestic activities among others were the focus of observation. In order to streamline the things to observe, a checklist was designed which also served as a guide during field work.

Ethical considerations were emphasized throughout the period of data collection; the anonymity of study participants was guaranteed, and their recruitment was on the basis of voluntary and informed consent. In addition, the principle of no harm to subjects was applied. Prior to the commencement of interviews, the participants were informed of the ultimate benefits that the study would have for them. They were also informed about their right to withdraw from the study at any time. Data were subjected to ethnographic and manual content analysis. The analysis started with translation of tape-recorded responses from vernacular to English. To ensure that meanings were not lost in the process of translation, the English version was back-translated to vernacular for the purposes of consistency. Thereafter, relevant materials were transcribed verbatim. The next stage involved careful isolation of different responses in line with study objectives. Thus, important insights were paraphrased or quoted copiously in the course of data presentation.

Findings

The findings are presented based on the three specific objectives of the research; namely payment for WASH services, factors accounting for effectiveness of community performance on WASH and gender perception and the role of women in WASHCOMs. The views of respondents and participants in the research are presented across the six LGAs, in the three states, where fieldwork was undertaken. In order to avoid unnecessary repetition, the views that largely reflected the position of most of the respondents and participants on a particular topic were presented.

Community willingness to pay for WASH services, resource mobilization and challenges

From the point of view of ownership and sustainability of the WASH project particularly after external support, it was important to ascertain community readiness to take responsibility for project maintenance. For the most part, respondents and participants in the communities where the research took place exhibited positive attitude towards WASH services and were willing to pay for WASH services. Their position was based mainly on actual and potential benefits that they attribute to WASH activities in the community. However, it was reported that on several occasions proposed WASH services did not come to fruition and contributions made by the people in anticipation of improvement in their livelihoods did not materialize.

Consequently, even in instances where proposed services are genuine, it was extremely difficult to diffuse the skepticism that pervaded communal perception of WASH services. Given the importance of water and hygiene, respondents and participants in the three states expressed willingness to pay for WASH services. For instance, group discussants, as expressed one of them stated:

Our people are willing to pay for WASH services because they are beneficial to us. When we pay, the money will be used to maintain it so that we continue benefitting from those services...they do not have to beg us to pay, because we need it (FGD/Men/Owodokpokpo Community/Isoko South LGA/Delta State).

When we have an impactful project like WASH, we normally pay from the community purse rather than going to individuals to ask them to pay. We do that to save time and also to ensure that everybody is part of it. Later-on, we have a way of making everybody pay for it. This strategy has been very effective in this community (FGD/Men/*Igbide* Community/*Isoko* South LGA/Delta State).

Among women FGD participants in Edo State, beyond expressing willingness to pay for WASH services, they stated their readiness to contribute monthly for project maintenance to ensure sustainability. That position was captured in the statement of one of the women leaders in *Okponha* community:

We had on our own already suggested that they should bring this project and we are willing to pay as much as 50 percent of the total amount needed to execute it by levying ourselves. Each of us is willing to pay N100 per month which we will put aside as running cost, and in case the facility becomes faulty we would not have to be begging the government to come to our rescue. That was what we did in the days of Better Life for Rural Women... we were contributing N20 every market day with which we quickly repaired our engines whenever they developed faults (FGD/Women/ *Okponha* community/*Ovia* Southwest/Edo State).

In the same vein, an opinion leader in *Temidire* community, Ekiti State in an interview restated the willingness and readiness of community members to contribute:

Our people are very interested in the growth and development of this community and will do everything within their power to ensure that project that will be beneficial to us are supported. They are indeed willing to pay for the services that WASH will provide and is already providing (IDI/Opinion Leader/ *Temidire* community/Ekiti West LGA/Ekiti State).

However, some stakeholders expressed either slightly contrary views or some conditions upon which they will be willing to pay for such service. Thus, a focus group participant in *Ogbe-Ani* community expressed the consensus view of the group by stating that :

Our people will be willing to pay only to maintain an existing project but not to pay for a project to be introduced or have a project constructed. It is the responsibility of the government to do so, (FGD/Male Youth/*Ogbe-Ani* Community/*Ndokwa* LGA/Delta State).

A group of participants in *Igbogor* community felt strongly that their members should not pay for WASH services due to high rate of poverty among the people:

The rate of poverty in this community is extremely high and people find it difficult to survive. So I seriously disagree with the position that we should pay to make the project work. It will be difficult for the community to pay...if they want to help us they should go ahead and do that; as for paying, even if it is N5.00, we would not. Why won't the government perform its basic responsibility? (FGD/Male Youth/*Igbogor* Community/*Ovia* Southwest LGA/Edo State)

Thus, beyond the perception of poverty among a majority of community members is the position of participants that government should live up to its mandate. For some respondents and participants in the study LGAs in Edo state, the willingness to pay should be premised on the assurance that a project for which community members make monetary contributions will implemented. For instance, some respondents insisted that it is only when it is established

that the proposed service is not a scam that they will willingly contribute to it. In the view of an elder in *Ugbokua* community:

If the service is not on ground, you will be wasting your time telling them to pay... they want to see whatever anybody or organization or agency has before committing money. You know, once deceived, twice shy. We are very careful not to fall prey again to any smart politician or group of people who specialize in swindling unsuspecting people (IDI/Elder/*Ugbokua* Community/*Ovia* Southwest LGA/Edo State).

Factors accounting for effectiveness of community performance on WASH

Generally, in the communities where the investigation took place, careful selection of WASHCOM members through rigorous screening of interested persons was identified as a major factor defining effectiveness of WASHCOMs and by implication community performance on WASH. One factor common to virtually all the communities visited in Delta State, is effective mobilization of the people towards active participation in WASH activities. In *Olomoro* and *Oteri-Igbide* communities, the success attained in involving a large majority of the people is attributed mainly to the ability of community leaders to personally take the message to their people most of who see them as role models. The issue of effective community mobilization was further explained by a group discussant in *Owodokpokpo* community of Delta State in these words:

Community mobilization is a factor that has contributed to the success of WASH... we make sure that the Town-Crier gets to all the nooks and crannies of the community to let everybody know about WASH programs when they are proposed. When that happens, our town hall or the Anglican Church premises is filled to capacity. Most people get the information, first hand; it has been very effective, (FGD/Male Youth/*Owodokpokpo* Community/Delta State).

It was relatively easy to mobilize the people in the above community for WASH due to the adoption of an inclusive and robust awareness creation system. For instance, an interviewee noted that a few people were trained in the community that later stepped the WASH training down to others. In *Igbide* and *Okporhor* communities of *Isoko* South in Delta State, the key drivers of the community performance on WASH was mentioned as continuous sensitization of the people by WASHCOMs, willingness of community members to participate once they were convinced that the program is important for their survival, and high level of unity that pervades the communities. Similarly, a respondent in *Isumpe* community of *Ndokwa* LGA identified effective monitoring as one of the drivers of the community performance on WASH and WASHCOM.

The criteria employed for the selection of WASHCOM members in *Owodokpokpo* Community in *Isoko* South LGA were mentioned as key factors for driving the performance of WASHCOM. According to the respondents, the criteria used included humility and spread of the membership, to ensure that all segments (also known as quarters, which are nine in number) of the community are represented in the committee. In addition, trustworthiness and willingness to render service to community were among the factors considered in selection of WASHCOM members in *Oteri-Igbide* and *Igbide* communities in *Isoko* South LGA. As an IDI respondent stated:

We were very careful in selecting committee member... we chose people who are very responsible and trusted by the people to carry out the mandate, (IDI/Man/Okporho Community/Isoko South LGA/Delta State).

Although the importance of WASHCOMs in successful implementation of WASH activities was persistently emphasized in both *Azunze* and *Lagos-Ogbe* communities of *Ndokwa* LGA, participants however reported that members of these committees were gradually withdrawing their support as a result of non-payment of their allowances.

In Edo State, respondents in *Igbogor* and *Ugbokua* communities of *Ovia* Southwest, identified continuous sensitization of the people by WASHCOMs, willingness of community members to participate in the WASH programme once they were convinced that it is important for their survival, and high level of unity that pervades the communities as the key drivers of success.

Members of *Oluoke* Community in *Etsako* LGA of Edo State pointed out that unity was the main factor accounting for community performance on WASH. Focus group participants in *Apana* community of *Etsako* West LGA emphasized efficacy of effective communication, as a major factor in community performance on WASH program. Proper management of boreholes was pointed out by respondents in *Okponha* community of *Ovia* Southwest as one of the key factors in the community WASH program. An interviewee in *Aifesoba* community in *Ovia* Southwest LGA revealed that effective performance of the community on WASH has resulted from effective monitoring. For *Iguogun* Community members, steadfastness, discipline and focus were key drivers of the community performance on WASH. A community leader captured this as follows:

What has kept the [WASH] programme going in our community is the importance attached to discipline... without it, all efforts made would have come to naught. We empowered our WASHCOM to exercise disciplinary measures against any erring member of our community and they have been good at that... the other time, the Chairman of our WASHCOM ordered the arrest of a lady found defecating in a bush, (IDI/Community Leader/ *Iguogun* Community/*Ovia* Southwest LGA/Edo State).

The criteria for the selection of WASHCOM members were noted as one of the drivers of the performance of WASHCOMs. Some of the criteria mentioned in the selection of WASHCOM members are as stated in the following excerpt:

One of the basic criteria is that the person must be resident in the community... must be a bona-fide child and somebody that does not travel all the time, (FGD/Mixed/*Ayoghena* Community/*Etsako* West LGA/Edo State).

In *Ugbokua* community of *Ovia* Southwest LGA, in addition to other conditions, ex-convicts and people with criminal records were not selected into WASHCOM. Thus, the members were carefully selected mainly on the basis of personal characteristics and readiness to undertake the responsibility. It was easy to empower the candidates through training for the task ahead. The cooperation extended to WASHCOM by members of relevant communities gave them the psychological boost to carry out their task diligently. This point was made by a WASHCOM member in *Afesoba* community in *Ovia* Southwest; she stated:

From the beginning, our people have shown us unwavering support for the work we do. We are encouraged by the fact that our authority has never been challenged by any individual or group. For us, that is sufficient motivation to carry on... we do not

intend to betray the trust that has been bestowed on us, (IDI/Woman member of WASHCOM/*Aifesoba* Community/*Ovia* Southwest LGA/Edo State).

A focus group participant corroborated the above observation by narrating his experience with community compliance and the motivation his committee draws from it:

We appreciate our community for cooperating with us; the moment our bell is heard, the youth do not hesitate to file out to know the reason and thereafter follow the direction that we would suggest in order to keep our environment clean. Young people here are a rare breed, (FGD/Male member of WASHCOM/*Ugbokua* Community/*Ovia* Southwest LGA/Edo State).

In Ekiti, the issue of proper management of boreholes was mentioned by respondents in *Temidire* communities in Ekiti West LGA as key in the WASH project. For instance, an Opinion Leader noted as follows:

We consider our borehole a precious resource and protect it jealously. We not only have somebody to take care of it at all times, but also ensure that repairs on it are carried out as and when necessary. Moreover, we make sure that children are not allowed access to it in order to forestall avoidable damages. Generally, we hardly have issues with the borehole unlike what we hear about neighboring communities and the challenges they face in maintaining their facilities, (IDI/Opinion Leader/*Temidire* Community/Ekiti West LGA/Ekiti State).

The ability to enforce and inculcate discipline in the people was an important approach to consolidating on the benefits of WASH services, for which significant efforts was made. For participants in *Aba Petese* community in Gboyin LGA, discipline also contributed in ensuring that facilities, particularly toilets constructed as outcome of WASH enlightenment were of high quality. This is because the people know that poorly built toilets are prone to collapsing early and may account for relapse and environmental decay.

Respondents in *Asasa* community of Ekiti West LGA pointed out that trustworthiness and willingness to render service in the community were among the factors considered in selection of WASHCOM members in the community. The discussion held with members of WASHCOM in *Ekan Igede* community of *Gboyin* LGA revealed that periodic reviews and meetings among members have led to marked achievements of the WASHCOM. One of the group members revealed as follows:

WASHCOM members undertake regular reviews and analysis of WASH activities in the community... they give feedback to the community on what is working as planned and areas that need improvement, (FGD/Female Member of WASHCOM/*Ekan Igede* Community/*Gboyin* LGA/Ekiti State).

An IDI respondent in *Temidire* community in Ekiti West LGA linked the success of WASHCOM in the community to consistency in the committees' activities:

The committee has been consistent in performing its assigned duties... we have not had instances where they were said to abandon their task for any reason or replaced by other persons, (IDI/Community Leader/*Temidire* Community/Ekiti West LGA/Ekiti State).

Gender perception by Communities and the role of women in WASHCOMs

In all the communities covered in this study, participants and respondents had a positive perception of gender and activities of women as members of WASHCOMs. Below are some of the statements made by different stakeholders in the communities. Many respondents and participants in the study communities noted that no real success will be recorded if women are not involve in WASH activities. Women are usually in the forefront of WASH activities in relevant locations. As an elder stated:

The community will be in disarray if women are not allowed to participate fully in WASH activities; it will not make a head way as men will not devote as much time as women would. For instance, I woke up and left the house since morning and the woman is at home taking care of the home, if anything is happening in my house now, I will not know until I come back. Imagine what the situation would have been if these women are not aware of the WASH project or allowed to participate fully; the house will be in a mess, (IDI/Elder/*Owodokpokpo* Community/*Isoko* South LGA/Delta State).

This position was corroborated by an IDI respondent in Edo State who in addition, opined that women in *Aifesoba* community are more persuasive than men in mobilizing people to participate in the project. He stated:

Women are not only useful for the WASH project but also involved in WASHCOM. For example, 60 percent of members of WASHCOM in this community are women... they have better skills in convincing people and participate in decision decisions, (IDI/man/ *Aifesoba* Community/*Ovia* Southwest LGA/Edo State).

In Ekiti state, the views of respondents and participants across the communities in the study LGAs were similar to the views expressed in the two other states where the study was conducted. One of the respondents identified unfettered involvement of women in WASH as a key factor in the success of the WASH project. He stated:

Women have a higher duty to perform with respect to WASH. When we talk of sanitation and hygiene, be it at household level or community level, women are in charge. So we carry them along; it may interest you to know that the head of the WASHCOM in our community is a woman and she is Madam... (FGD/Men/*Temidire* Community/*Ekiti West* LGA/*Ekiti* State).

From the point of view of vulnerability to the negative effects of a dirty environment, an interview respondent in Ekiti State noted that:

Women are involved, but they need to be involved the more because they and children are the most affected, especially those living in the community that would not go for greener pastures outside their communities (IDI/RUWASSA/*Ikere* Ekiti/*Ekiti* State).

Findings from observations across the study states

The results of the unobtrusive observation of communities selected for the research indicate that water, sanitation and hygiene situations in the communities are largely similar. This result to a large extent corroborates the results through interviews and focus groups.

The findings show that borehole and *well* were the only sources of water in the study communities in Delta and Ekiti states, while stream was almost the only source of water supply in the communities observed in Edo state. Distance to sources of water was 20 minutes in the communities observed in Delta state, and 15 minutes in the communities observed in both Edo and Ekiti states. There was no direct financial cost for water supply in the communities observed across the study states. Women and children were mostly responsible for fetching water. The use of water hand pump was observed only in the communities visited in Ekiti state. There was no water harvesting mechanism, as there was no water treatment and purification methods observed in any of the communities visited across the study states. Water was stored in buckets, basins, drums, pots and bowls in these communities. There were no taboos related to water usages across the communities.

It was observed that private pit latrines were common in communities across the study states. These toilet facilities were generally accessible in all the observed locations and therefore largely convenient. The construction of these toilet facilities in individual houses had accounted for reduction or prevention of open defecation in the areas. On hand washing practices, it was only in Ekiti state that hand washing before and after food preparation was observed. While it was common among women to wash their hands before feeding children in Delta State, it was only observed a few times in Ekiti state communities selected for this study. In Edo communities, hand washing before food preparation, after food preparation, before feeding children and after feeding children was not observed in the course of data collection for the study.

Discussion

Generally, there was positive attitude towards WASH services and willingness to pay for WASH services across the communities studied, provided the proposed service is genuine and will be made available. The notion of counterpart contribution was also largely supported, especially based on common community fund. Willingness to pay for WASH services was linked to actual and potential benefits that the community members will derive from WASH services particularly with regard to availability of water facilities and their maintenance. Safe water has been linked to sanitation and hygiene in rural Nigeria and by extension, reduction in prevalence of diseases especially cholera, dysentery and diarrhea (Oloruntoba, Folarin and Ayede 2014; Prüss-Ustün *et al.* 2014; Orji *et al.* 2015)

The research revealed that the main factors determining participation of communities and WASHCOMs are perceived relevance of WASH services by the community; effective community mobilization for WASH activities; continuous sensitization of the people by WASHCOMs; willingness of community members to participate in WASH activities; effective monitoring of WASH practices; unity among community members; effective communication and regular feedbacks; effective monitoring; discipline among community members; proper management of WASH facilities; use of acceptable criteria for selection of WASHCOM members; community compliance and cooperation with WASHCOMs; periodic reviews.

A major issue in WASHCOMs is the expectation of some members to receive monetary rewards for the role they play for WASH program in the community. Where they have not received monetary rewards, some want to gradually withdraw from WASHCOM

activities. This demand appears legitimate both for what it represents in terms of income and morale, however it is doubtful whether rural communities will be able to defray the cost of wages that may be involved.

In all the communities visited, the role of women in WASHCOMs and community decision-making processes concerning WASH was widely acknowledged. Women were perceived as very instrumental in all WASH activities and the driving force in communities that exhibited efficiency with regard to water and sanitation. This seeming description of the role of women portrayed by WASH activities and WASHCOMs, in particular, is perhaps due to the gender perception of WASH activities by many people as situated within the domain of femininity. Women and children were responsibility for fetching water in the communities visited for this research.

The sources of water in the communities visited were boreholes, well and streams, which are not free from impurities that could promote onset of disease. There were no appropriate mechanisms for water purification and storage in use by the communities. Absence of open defecation was widely reported outcome of WASH activities and WASHCOMs in the communities visited for the research. This was because of WASH activities, which emphasized that each household constructs a toilet facility for its use. While hands washing was generally practiced after use of toilet, after attending to child who has defecated, and before and after eating food, hands washing before and after food preparation and before and after feeding children were not observed in many of the communities visited.

Recommendations

The findings of this study necessitated the following recommendations:

There is need to consider increasing awareness creation and advocacy among community members in order to build trust and diffuse the skepticism and negative perception about WASH services.

It is important for governments and agencies to continue to educate and dialogue with the youth on their role and the responsibility of the government to support and partner with the community to ensure that the aim of the WASH project is achieved.

Given that the success of WASH in relevant communities depends largely on how well the activities are organized, the use of objective criteria for the selection of WASHCOM members to ensure their legitimacy in the community should be promoted and sustained

To ensure efficiency and sustainability of the project there is need for continuous education of WASHCOM members on the principles of community WASH programme from the outset and their responsibilities as volunteers.

Considering that each of the communities where WASH activities are taking place has something unique about the project, cross-community learning is essential. This will provide communities the opportunity to share and learn different ideas and practices that drive results in communities and WASHCOMs. The virtues that may have accounted for performance such as discipline, sacrifice, corporate project financing, willingness to pay, unity, community mobilization, proper management, continuous sensitization, periodic monitoring and feedback system, which are laudable should be imbibed by other communities.

Vigorous sensitization and education of community members especially men to be as much involved in WASH services should be prioritized. This will go a long way to changing the perception of WASH activities as the primary responsibilities of women.

There is need to emphasize hygiene issues such as water purification with chlorination and storage in appropriate and safe water containers. This will translate to preserving drinking water in containers with narrow mouth so as to prevent individuals from dipping their hands into it and getting it contaminated.

The people need reorientation on toilet-hygiene behavior to forestall contracting or spreading diseases. Contracting diseases from these toilets as a result of poor maintenance may discourage a large number of people from making use of such; that may cause relapse and reintroduction of open defecation. Apart from persuading the people to have their toilets constructed, educating them on the essence of ensuring that the toilets are clean is very critical for preventing diseases.

It is also essential to educate the people on personal and household hygiene practices, especially on the issue of hands washing during some domestic activities which although taken for granted exposes individuals to diseases.

Conclusion

This study has reconfirmed that water, sanitation and hygiene practices are inextricably linked in defining the esthetic, health, psychological and social wellbeing of individuals and groups in society. Although this perception is common among stakeholders, for different reasons, lack of safe water for domestic use still characterizes Nigerian communities, especially rural areas. Overcoming this challenge has been particularly necessary but peculiarly difficult to achieve in several areas due to issues related to lack of political will to provide the people with critical infrastructure, corruption, poor maintenance culture and ignorance among others. Hence, charting a new course would require stakeholder reorientation towards commitment related to provision, maintenance and expansion of water schemes to defray the demand for the rising quantity of the resource needed in an increasing population environment.

Although few respondents identified the contradiction in asking poor people to pay for WASH services, that did not translate to unwillingness to pay for WASH services, but rather financial incapacity. Hence, professing willingness makes little meaning without an enabling economic context to match words with action. One key issue revealed by the study is that communities have a lot to learn from each other with regard to issues of governance, unity of purpose, accountability and placing emphasis on merit in forming committees and decision making rather than gender dissensus among others. Overcoming the water, sanitation and hygiene challenge in Nigerian communities will require genuine commitment from all the stakeholders given the complexity and apathy that characterize provision and maintenance of critical infrastructure in the country.

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