

SANITATION AND HYGIENE PRACTICES OF NIGERIA’S COASTAL COMMUNITIES AND ASSOCIATED SOCIO-ECONOMIC CHARACTERISTICS: STUDY OF TWO AKWA IBOM COMMUNITIES

ABSTRACT

The hygiene and sanitation practices and corresponding socio-economic levels and cultural characteristics of two typical coastal/riverine communities in Nigeria, Uta-Ewa (Ikot Abasi LGA) and Ibaka (Mbo LGA) of Akwa Ibom State, were studied to determine how the socio-economic status, cultural characteristics, and nature of their location has affected their sanitation and hygiene behaviours. A sample size of 300 respondents was used for the study. Questionnaires and interviews were used to obtain data for the study from primary sources, key informants and opinion leaders. The data were coded and subjected to analysis with the use of descriptive statistical tools. In both communities, the average monthly income primarily from fishing and crop farming was between ₦5,000 – ₦20,000. There was a near absence of potable water sources except for a few boreholes provided by the government and private individuals. The communities practice open defecation into the streams and disposed of household wastes into surrounding bushes and nearby dumps. Lack of space and cost were given as the major reasons for non provision of latrines by households. Appropriate hygiene and sanitation technology options must therefore be economically feasible to be acceptable and sustained by the populace.

Key words: Riverine, Appropriate Latrine, Sanitation, Hygiene

INTRODUCTION

Sanitation and hygiene practice among Nigeria’s populace and communities is generally below world standards. The 2006 joint monitoring programme (JMP) report puts the coverage at 53% in 2004 for urban areas and 36% for rural areas. The Millennium Development Goal 7 (MDG 7), target 10 is to halve, by 2015, the proportion of people without sustainable access to basic sanitation. This target is far from being achieved with 2.5 billion people globally still lacking access to improved sanitation, and 1 billion people (and about 39 million people in Nigeria, i.e. 22% of the national population) practicing open defecation (WHO/UNICEF, 2014).

The sanitation and hygiene situations are worse in the riverine communities than other parts of the country due to the very difficult terrain, especially very shallow water table, prevalent in the region. Most of the inhabitants defecate in the water which also serves as sources of drinking water and other domestic purposes. Excreta, both feces and urine, contain an array of pathogenic viruses, bacteria, protozoa and helminths and are principal vehicle for the transmission and spread of a wide range of communicable diseases (Feachem et al., 1980). According to WSSCC/GSF (2009), about 2.3 billion people in the world suffer from diseases that are linked to water and sanitation and these diseases kill millions of people each year and prevent millions more from living healthy lives. Supporting this finding WaterAid (2012)

stated that around 2,000 children are lost every day to diarrhea caused by lack of access to safe toilets and clean water.

This study is therefore, considered appropriate, timely and significant because it will provide appropriate and acceptable sanitation technology options for excreta disposal and management and general sanitation in riverine areas.

The study was carried out in the riverine communities of Ibaka and Uta Ewa in Mbo and Ikot Abasi Local Government Areas (LGAs) of Akwa Ibom State, Nigeria and was undertaken to examine the socio-economic and cultural variables that can impinge on the choice of appropriate latrine options in riverine communities bearing in mind that an appropriate latrine is that which is environmentally friendly, socio-culturally acceptable and economically feasible.

Uta Ewa is situated along the coast of the Imo River as it opens up into the Atlantic Ocean. The area is bounded by coordinates $07^{\circ}49'02''$ E and $4^{\circ}35'01''$ N (Fig.1). It is about eighty (80) minutes drive from Uyo (the capital city of Akwa Ibom State).

Ibaka community on the other hand is a major fishing settlement along the coast of the Atlantic Ocean. It is about 110 minutes drive from Uyo and about 30 minutes drive from Oron main town. The area is bounded by coordinates $8^{\circ}18'15''$ E and $4^{\circ}39'04''$ N (Fig.1). It shares boundaries with the Islands of Bakassi that were recently ceded to Cameroun.



Fig.1: Location Map of the study areas

The census figures of 1991 puts the population of these communities at about 507 and 2925 persons with projected figures of 578 and 3136 for 1996 (NPC 1991 and 1996) for Uta Ewa and Ibaka respectively. Given the population growth rate of about 2.83%, and using the exponential growth extrapolation technique, it is expected that the current population of these

communities will be about 831 and 4504 persons in Uta Ewa and Ibaka respectively, *ceteris paribus*. With these projections the need to provide adequate and sustainable hygiene and sanitation technology options for these areas calls for urgent action.

METHODOLOGY

Sampling Techniques and Sample Size

The sampling technique employed for the study involved a combination of purposive and random sampling in a multistage procedure. In the first stage, purposive samples of two communities (Uta Ewa and Ibaka, being riverine communities) in Ikot Abasi and Mbo Local Government Areas (LGAs), respectively were selected as study locations. In the second stage, the household list compiled by the family heads in Uta-Ewa community was used as a sampling frame from which a random sample of 100 household heads was chosen using the lottery method. However, in Ibaka community it was difficult to obtain a compiled household listing, therefore a purposive sampling method was adopted to select two hundred (200) households from the 9 families that make up the community. In all, a sample size of three hundred (300) respondents was obtained and used for the study.

Data for this study was obtained mainly from primary sources. The data were collected with the use of questionnaires, interviews with key informants and with a cross section of opinion leaders in the communities including the youths and women.

The latter method involved the use of Focus Group Discussions (FGDs) and Participatory Rural Appraisal (PRA) sessions. The information that was obtained using the FGD and PRA methods include; settlement history of each community; the political organization and hierarchy of authority; land ownership patterns existing in these communities, the existence of socio-cultural and religious organizations, festivals and taboos, sources and channels of information dissemination within and without the communities among others.

Other information collected include the presence of trado-religious tourism sites such as shrines and sacred grooves, human waste disposal problems in the communities and potential solutions as well as their expectations about the proposed project.

Information on the socio-economic and cultural characteristics of the respondents, knowledge of household hygiene, methods of human waste management and their willingness to adopt any new human waste disposal options to be introduced to the communities were obtained with the use of questionnaires. The questionnaires were validated and thereafter pre-tested before actual field enumeration began. Field assistants (3 in Uta Ewa and 5 in Ibaka) were trained and used for the pre-testing and actual questionnaire administration and retrieval from household heads (respondents). Key informants were also administered questionnaires to provide information on rural infrastructure in the community.

The settlement patterns and some infrastructure in the communities were also assessed visually. Table 1 shows that of the total of 300 questionnaires administered, only 272 were

retrieved (about 90.50%). However, out of this number, only 266 were properly filled and thereafter used for the analysis.

Table 1: Questionnaire Administration and Retrieval Rate

S/N	Community	No. of Questionnaires Administered	Number of Questionnaires Retrieved	Retrieval Rate (%)
1.	Ibaka	200	182	91.00
2.	Uta Ewa	100	90	90.00
Total		300	272	90.50*,

Source: Field data 2009.

* Mean rate of questionnaire retrieval

Analytical Techniques

Data from the questionnaires were coded and subjected to analysis with the use of descriptive statistical tools such as, frequency tables, percentages, means, standard deviations, bar and pie charts.

RESULTS AND DISCUSSION

Results from this study tends to indicate that the socio-economic status , cultural characteristics location of the two typical riverine communities has very much dictated their level of hygiene and sanitation practices and general health and well being of the populace.

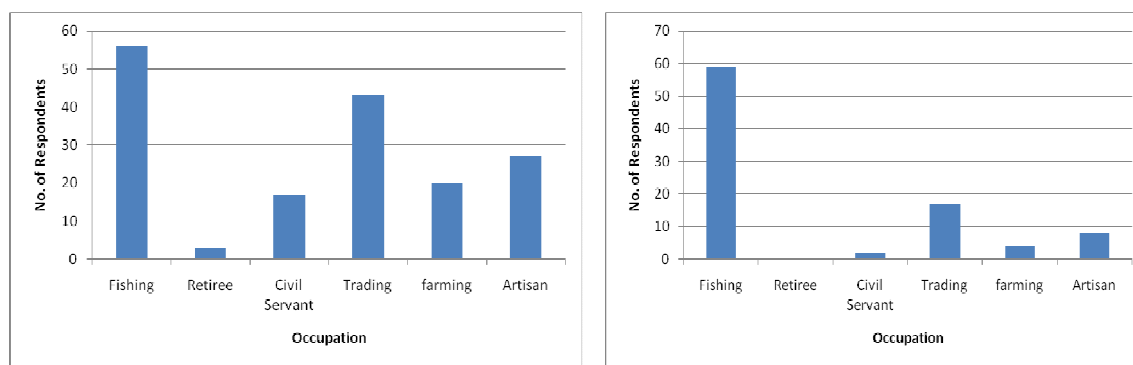
Settlement Pattern

The communities exhibit linear, cluster and compact settlement patterns. Houses are located along the roads and streets within the community. Houses by the water front are so compact that it is difficult for individuals to build personal latrines for lack of space. With this kind of settlement pattern, outbreaks of diseases can be difficult to contend with.

Socio-Economic status of the Communities

A significant number of the respondents (34% in Ibaka and 66% in Uta Ewa) have fishing as their primary occupation (Figs. 2a&b). Most people in other employments in the community also take fishing and/or fish marketing as their secondary occupation.

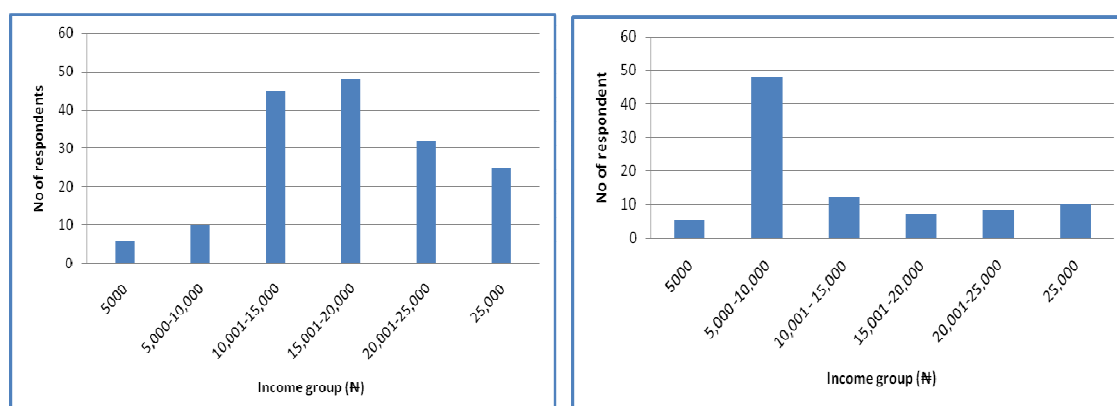
The investigation further indicated that majority of respondents in Ibaka earned between ₦10,000 and ₦20,000 as monthly income, while in Uta Ewa majority of the respondents were between the ₦5,000 and ₦15,000 income bracket (Figs. 3a&b). Since there is a positive correlation between income and standard of living, these levels of income may not be enough for them to access quality health services (build and maintain good latrines inclusive), nutrition and education for their households. Any technology that will help to improve the hygiene and sanitation practices and so, the health and longevity of the communities must therefore take these into consideration.



(a) Ibaka

(b) Uta Ewa

Fig. 2: Distribution of respondents by Occupation



(a) Ibaka

(b) Uta Ewa

Fig. 3: Distribution of respondents based on income group

Traditional Institutions and Local Governance

The people of Ibaka and Uta Ewa are governed by organized and hierarchical traditional institutions that are recognized by government. The chiefs in these communities are the custodians of the culture, customs, law and order. The hierarchy of authority in these communities shows the Village Head at the apex and followed in order of importance by the Chairman of the Village Council.

The subjects in the two communities appear to be very loyal to the village heads. At their directives, the members of the communities became very committed to the success of this field work.

Social Organizations

Youth associations, age grades and women organizations exist and are very important rallying points for members during celebration, ill health and burial activities. They are formed to assist members socially and financially. The youth organizations are also useful in the area of sanitation and security (Vigilante groups).

Various cooperative organizations abound in the communities. Some of these organizations are moribund, while others are still active. Government and other organizations find it easier to channel funds through cooperatives and therefore the existence of cooperatives in any community augurs well for the well being of the individuals and the community at large (Ekpe and Idiong, 1999).

Available Rural Infrastructure

Available infrastructure in both communities appears only fair. The availability of certain infrastructural facilities in any community speaks volume of the stage of development of such communities.

The road leading into Uta Ewa community and the Cement Company (under construction) was asphalted and therefore motorable. This infrastructure had been recently provided by the present government as part of its massive construction and rehabilitation of roads and other infrastructural projects in the State.

In Ibaka, the major road leading into this community was in poor condition-narrow and untarred. The Local Council had attempted to grade the road, but not enough to ensure free flow of the vehicular traffic experienced on this only road daily. The road will certainly become quite deplorable and unmotorable when the rains set in. The commonest means of transport in the community was the use of motorcycles and engine and speed boats.

Communication facilities available in the community were the Postal Agency (in Ibaka) and the Global Services of Mobile Telephony (GSM). Individuals in the communities, who did not own hand sets, patronize the commercial call centres to receive and make calls. These services were provided by the three important players in the telecommunication industry in Nigeria i.e. MTN, Zain and Globacom.

There were also some commercial television viewing centres provided by individuals and patronized by members of these communities especially the youths.

Water and electricity supply

Provisions for potable water in both communities were very poor. In Ibaka the borehole water facility provided by the State Government was non- functional as a result of the breakdown of the generator needed for pumping the water. The people depended on the four privately owned private boreholes and streams as sources of water for various uses, including drinking. However, in Uta Ewa, the only borehole provided by the State government, though functional, was still inadequate to meet the demand for water in the community.

The quality of the water from these boreholes was yet to be ascertained given that water from most boreholes in rural communities in the State are often not treated. This has serious health implications given the low levels of sanitation in rural riverine communities. Zamxaka et al. (2004) reported that anthropological and animal activities in the vicinity of water collection sites as well as settlements lacking proper sanitation facilities, contributed to the poor water quality of the different ground water sources he sampled.

Uta Ewa community has benefited from the electrification project of the Aluminium Smelter Company (ALSCON) as part of its corporate social responsibility to the communities they are doing business in. The supply of electricity from this source was relatively stable.

However, in Ibaka, electricity which was being supplied by the Power Holding Company of Nigeria (PHCN) was quite erratic and therefore those who can afford make do with electric generating sets as source of power supply. The provision of electricity will engender economic activities in the area and curb rural-urban migration especially among the youthful population.

Educational and medical institutions

Ibaka community has one government primary school, about twelve (12) privately owned nursery schools, one secondary school and three Adult Education Centres that provide educational services to young first school leavers. In Uta Ewa community, there was only one primary school. Pupils from this community attend secondary schools in Ikot Abasi which is about seven kilometers away from the community. The number of educational institutions in the communities appears inadequate to cater for the increasing educational needs of the members of these communities now and in the nearest future.

The available medical institutions in Ibaka community include; hospital, several patent medicine shops, traditional healing homes and traditional birth attendants. In Uta Ewa community, there is a health centre manned by a Staff Nurse and a few Community Health Assistants as well as few patent shops and traditional healing homes.

In both communities, the numbers of qualified public health workers to attend to the health needs of the community were few and in the case of emergencies (as in the case of outbreak of Cholera in both communities some years back), it could be very disastrous. There is therefore need for the provision of better health facilities and qualified health personnel by government and the private sector to enhance efficient health care delivery in these communities.

Household Waste and Excreta Disposal

Household wastes were disposed of indiscriminately in the surrounding bushes, nearby dumps and ultimately in the streams/rivers. Human wastes in particular were disposed of using the streams and rivers (Plate 3). It was also common to see children defecating in refuse dumps (an indication that they appear to see nothing bad about the sight of excreta in places they ought not to be found). Latrines were in short supply and mostly communal and not properly kept (Plate 4).



Plate 3: A typical scene ("water system")
in one of the communities

Plate 4: A typical latrine in Ibaka where
deposited excreta was carried by receding tide

There were privately managed pour flush toilets provided in the market vicinity as public conveniences in Ibaka. Members of the community and visitors make do with them for a fee. However, the number was inadequate to cater for the entire community and visitors who come in daily to carry out businesses in the community.

In most (50.23% and 56.55%) of the respondents' households in Ibaka and Uta Ewa respectively the use of open defecation in rivers in disposing of human wastes was common and ironically, they call it 'water system'. The other group defecated in surrounding bushes. A small percentage of the respondents made use of pit latrines while a smaller percentage paid and used the pour flush latrine provided by a private individual near the market.

Appropriate latrine is a felt need of these communities and therefore the intention of government to develop appropriate latrines and provide the communities with this facility is a step in the right direction. The main reason adduced by majority of the respondents for their choice of mode of excreta disposal was lack of space in their houses to build toilets.

Results of the questionnaire analyses (Table 2) show that majority (48.8% and 48%) of the households in Ibaka and Uta Ewa communities respectively dump the waste they generate in the streams and rivers. This is an indication of the poor sanitation knowledge of most of the members of these communities.

Household Hygiene

The respondents in the communities appear not to have a good sense of personal hygiene with reference to hand washing and toilet habits. The study indicates that majority (77.11% in Ibaka and 46.67% in Uta Ewa) of the respondents in the communities sometimes wash their hands after defecation and cleaning of children's excreta (Table 3). In addition, about 83.13% and 68.89% (in Ibaka and Uta Ewa respectively) of them do not wash their hands with soap at all. This has serious implications on their health status with respect to diseases that are transmitted through the feco-oral route such as cholera, dysentery, diarrhea and typhoid. However, 49.40% and 53.33% of the respondents (in Ibaka and Uta Ewa respectively) clean their compounds daily.

Table 2: Distribution of Respondents Based on household waste and excreta disposal

Variables	Frequency *		Percentage	
	Ibaka	Uta Ewa	Ibaka	Uta Ewa
House hold waste disposal				
i) Refuse dump	37	20	22.29	20.00
ii) Surrounding bushes	48	32	28.92	32.00
iii) Rivers/streams	81	48	48.80	48.00

Total	166	100	100	100
Type of Toilet facility used by household				
i) Open fields/surrounding bushes	54	34	25.12	23.45
ii) Traditional pit	21	28	9.77	19.31
iii) Flush toilet	32	1	14.88	0.69
iv) Rivers/streams	108	82	50.23	56.55
Total	215	145	100	100
Reasons for choice of option				
i) Cheap and affordable	21	0	9.42	0.00
ii) Easy to maintain	21	1	9.42	0.50
iii) Easy to construct	11	28	4.93	14.07
iv) Only one available	72	88	32.29	44.22
v) Lack of space to build toilet	98	82	43.95	41.21
Total	223	199	100	100
Preferred Latrine option				
i) Traditional pit	10	24	6.02	26.67
ii) Very Improved Pit	90	56	54.22	62.22
iii) Pour flush	61	10	36.75	11.11
iv) Water closet	5	0	3.01	0.00
Total	166	90	100	100
Preferred type of ownership				
i) Private	28	10	16.87	11.11
ii) Communal	86	24	51.81	26.67
iii) Compound	52	56	31.33	62.22
Total	166	90	100	100
Ability to afford preferred latrine				
i) Yes	2	5	1.20	5.56
ii) Yes with government support	28	10	16.87	11.11
iii) No	136	75	81.93	83.33
Total	166	90	100	100

Source: Field Survey data 2009

Note: *Frequency exceeds total due to multiple responses.

Table 3: Distribution of respondents with respect to hygiene practices

Variables	Frequency *		Percentage	
	Ibaka	Uta Ewa	Ibaka	Uta Ewa
Frequency of hand washing after defecation and cleaning of children's excreta				
i) Always	18	28	10.84	31.11

Variables	Frequency *		Percentage	
	Ibaka	Uta Ewa	Ibaka	Uta Ewa
ii) Sometimes	128	42	77.11	46.67
iii) Not at all	20	20	12.05	22.22
Total	166	90	100	100
Frequency of Hand washing with soap				
(i) Always	-	-	-	-
(ii) Sometimes	28	28	16.87	31.11
(iii) Not at all	138	62	83.13	68.89
Total	166	90	100	100
Frequency of House & compound cleaning				
i) Daily	82	48	49.40	53.33
ii) Weekly	22	12	13.25	13.33
iii) Twice a week	40	30	24.10	33.34
iv) Monthly	22	-	13.25	-
Total	166	90	100	100
Knowledge of good latrine				
i) Provide privacy				
Yes	166	90	100	100
No	-	-	-	-
Total	166	90	100	100
ii) Not clean and covered				
Yes	-	-	-	-
No	166	90	100	100
Total	166	90	100	100
iii) Children can use it with assistance				
Yes	24	42	14.46	46.67
No	142	48	85.54	53.33
Total	166	90	100	100
iv) Close to the house				
Yes	84	40	50.60	44.44
No	82	50	49.40	54.56
Total	166	90	100	100

Source: Field Survey data 2009.

Note: *Frequency exceeds total due to multiple responses.

It has been reported that an estimated 2.4 billion people in the world lack access to proper human waste disposal system and most of these persons live in developing countries like Nigeria (Uchegbu, 1998 and Jensen *et al.*, 2004). Uta Ewa and Ibaka communities are also faced with similar conditions.

The situation in Ibaka and Uta Ewa typifies the situation in almost all the riverine and coastal communities in Nigeria. the very poor and sometimes dehumanizing sanitary and hygiene

practices is as a result of the socio-economic status of these communities occasioned by provision of very poor rural infrastructure due to location disadvantages.

Of special worry is the manner of disposal of human waste. The high water table, settlement pattern and lack of enough solid land space have made it very difficult to provide these facilities.

Majority of the respondents in both communities (54.22% and 62.22% in Ibaka and Uta Ewa respectively) prefer to have Ventilated Improved Pit (VIP) latrines provided for them with communal ownership option as a result of space and cost. Most of them were also of the opinion that they cannot afford their preferred latrine for now except there is an improvement in their standard of living via enhanced income. The selection of an appropriate latrine technology by persons in any rural community is influenced by how much would be required of them to acquire and maintain them, with or without external financial assistance. Where there is the guarantee that these facilities will be provided at no cost or very minimal cost, choice of an option is easier. Kolsky *et al.* (1998) in his study of latrine technology options in India reported that pour-flush latrines which were promoted by the government were well beyond the means of most of the rural poor who were the target population and this had affected the adoption and continuous use of these latrines by the rural people.

Cairncross and Feachem (1993) had suggested the construction of built-up pit with the raised portion sealed against leakage and protected against erosion in locations with a high water table.

Brandberg (1997) had opined that latrine costs could be reduced when the development of a range of technical options is financially supported by government and or development agencies. They suggested that to achieve low-cost, culturally sensitive latrine technologies in particular, there was need for further research and that designers should keep an open mind about possible appropriate latrine technologies. More so, without subsidy, such research projects should provide latrine options that will be affordable to the great majority of households. Regmi and Fawcett (2001) in their study on investigating gender mainstreaming and appropriate latrine technology in rural India found that, higher cost of latrine technologies caused a lower rate of adoption of promoted latrine technologies by the rural dwellers. It is important therefore that options that are deemed appropriate must also be economically feasible given poverty prone rural economy.

SUMMARY AND CONCLUSION

Summary of Findings and Recommendations

The major findings of this investigation are summarized as follows:

- a) The two pilot communities – Ibaka and Uta Ewa have large fishing settlements and lie below other parts of the town;
- b) Major occupation of the people is fishing but they also engage in the cultivation of food crops;
- c) The communities were relatively poor with average monthly income of the majority of the respondents in the two communities ranging between ₦5,000 and ₦20,000;

- d) The two towns have no public latrines. Only two families in Uta Ewa and eight in Ibaka have latrine facilities;
- e) Human waste disposal was mainly by open defecation into water bodies or in the bush;
- f) The respondents in the communities appear not to have a good sense of personal hygiene with reference to hand washing and toilet habits;
- g) Major sources of water include river, rain and a few public and private boreholes;
- h) The people prefer communal latrines provided by government as most of them expressed lack of space for toilet within the homes and cannot afford their preferred choice for now except there is an improvement in their standard of living via enhanced income.

Latrine and other waste disposal technology options must therefore take into consideration the socio economic statuses and cultural practices of the people for such technology to be sustained. Such factors include:

- a) Poor economic and earning power of the people. Any option must therefore be cheap enough to be within the reach of the people
- b) Difficult terrain such as the high water table that will make some of the options not feasible
- c) Lack of space, making it impossible for individual families to provide latrine facilities and may resort to communal provisions
- d) Lack of adequate sanitation and health education among its populace

Conclusion

It is evident that appropriate latrine is a felt need of the people. An appropriate latrine has been described as one which must be environmentally friendly, socio-culturally acceptable and economically feasible. On the long run however, the choice of the acceptable appropriate technology rest with the eventual users or beneficiaries. It is important therefore that options that are deemed appropriate must be economically feasible given the average income levels of the communities. Where possible the latrines should be constructed with materials that are readily available in the communities or the immediate environment to enhance ease of construction by residents who can afford to own personal latrines. The latrines should also be provided in schools and health centers.

This study provides background information that will enable further research and development of appropriate latrine and other waste disposal technology options peculiar to Nigeria's riverine/coastal communities. The governments (state and federal) may need to take up this challenge through the Niger Delta Development Commission and the Ministry of Niger Delta Affairs.

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