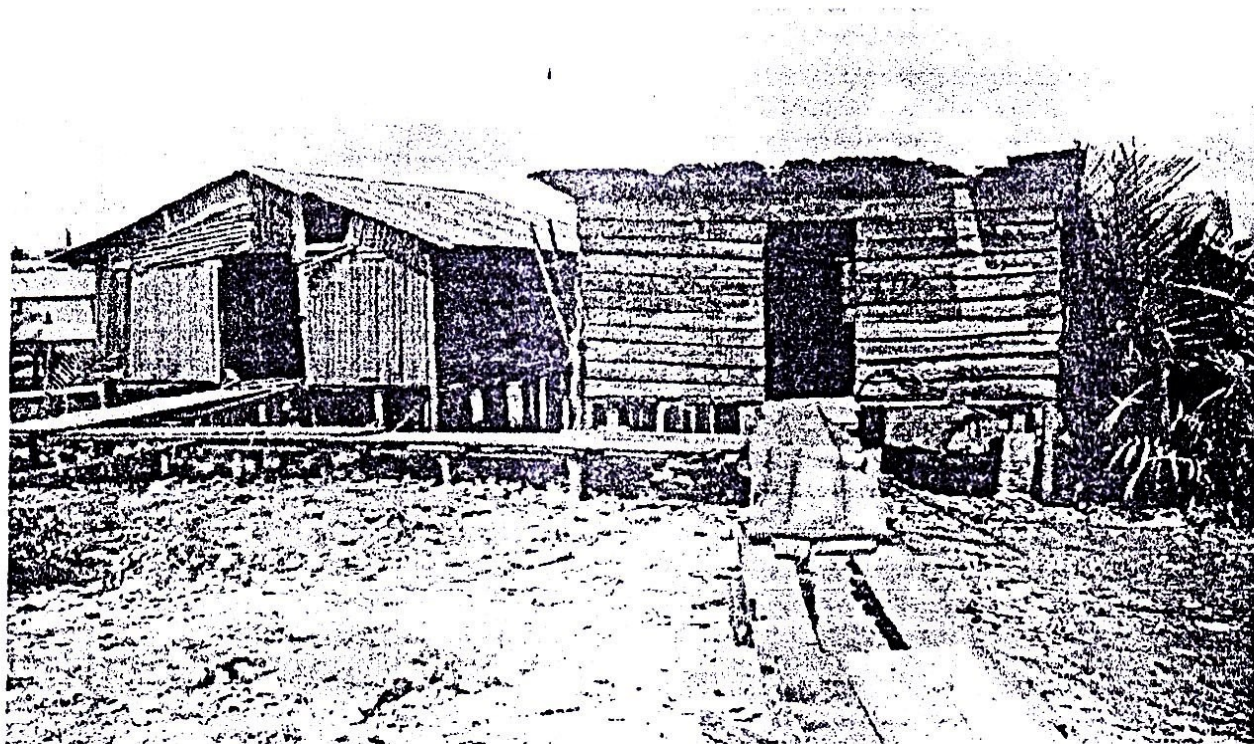


FEASIBILITY STUDY ON AND DESIGN OF APPROPRIATE
LATRINE OPTIONS FOR RIVERINE COMMUNITIES IN AKWA
IBOM STATE, NIGERIA: A SOCIO-CULTURAL STUDY



BY

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GLOSSARY OF ABBREVIATIONS

AK-RUWATSAN: Akwa Ibom Rural Water and Sanitation Agency.

ALSCON: Aluminum Smelting Company of Nigeria

FCT: Federal Capital Territory

FGD: Focus Group Discussion

GSM: Global Service of Mobile Telephony

LGAs: Local Government Areas.

MDG: Millennium Development Goal.

NPC: National Population Commission.

NWRI: National Water Resources Institute.

PHCN: Power Holding Company of Nigeria.

PRA: Participatory Rural Appraisal

WSSD: World Summit on Sustainable Development

EXECUTIVE SUMMARY

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

Uta Ewa community is situated along the coast of the Imo River. It belongs to the Ibekwe clan and the people speak the Ibibio language. Ibaka community on the other hand is major fishing settlement along the coast of the Atlantic Ocean. The people belong to Ukwong Clan in Oro nation. They share some life styles of the Efik people in Cross River State and speak the Oro dialect.

The inhabitants of these two communities are primarily engaged in fishing and also cultivate food crops such as cassava, yams, cocoyam, plantain, vegetables and keep animals such as goats, chicken and pigs among others. Most of them earn between N5,000 and N20,000 as income monthly.

The houses in these communities are arranged in clustered settlement pattern, with most of the non-indigenes occupying the shanties near the beach. 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.

The people of Ibaka and Uta Ewa are governed by organized and hierarchical traditional institutions that are recognized by government. 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 Village Council comprises the Chairman, Secretary, Treasurer, Financial Secretary, Women leader and the Youth Leader. In these two communities, youths associations, age grades and women organization are formed to assist members socially and financially.

The predominant religious sect in the communities is Christianity, although there are a handful of adherents of the traditional and esoteric religions.

The major festivals celebrated in these communities are the Christian festivals of Christmas and Easter. The communities also boast of various traditional dances and masquerades. In these communities, certain habits that are against their norms and value systems are abhorred. Such habits include, stealing, adultery, gossips and fighting among others. It is also a taboo in Ibaka for non-initiates of some masquerades to come out when the masquerades are on outings. There are no taboos about food in Uta Ewa, however, in Ibaka the eating of a type of fish called Mudskippers and dog meat is forbidden.

The infrastructure available in the two communities, are similar except that, in Ibaka there were more and functional. Ibaka community has one government primary, about twelve (12) privately owned nursery schools, one secondary school and three Adult education Centres. However, in Uta Ewa community, there is only one primary school. The available medical institutions in the Ibaka community include; Hospital, Health centre and several patent medicine shops, Traditional healing homes and Tradition birth attendants.

There is a near absence of potable source of drinking water in the communities except for a few boreholes provided by the government and private individuals. The Uta Ewa community has benefited from the electrification project of the Aluminum Smelter Company (ALSCON). However, in Ibaka, electricity which is supplied by the Power Holding Company of Nigeria (PHCN) is quite erratic and therefore the people make do with electricity generating sets as important sources of power supply.

Household wastes are disposed off indiscriminately in the surrounding bushes, nearby dumps and ultimately in the streams/rivers. Human wastes in particular are disposed off using the streams and rivers. The road leading into Uta Ewa and Ibaka communities are all season. The commonest means of transport in the community is the use of motorcycles, engine and speed boats. Communication facilities available in the community are the Postal Agency (in Ibaka) and the Global Services of Mobile Telephony (GSM). Most commercial activities are done in the daily and periodic beach markets in the communities. A number of businesses such as hair dressing and barbering saloons, carpentry, dress-making shops, Filling Stations, land and water transportation and grocery shops among others are also found.

The communities have a poor sense of sanitation and personal hygiene as they practice open defecation into the streams and surrounding bushes and seldom wash their hands properly with soap.

Lack of space was given as the major reason for non provision of latrines by households. The preferred and recommended latrine option for the communities is the communal VIP latrines.

CHAPTER ONE

INTRODUCTION

1.1 BACKGROUND AND JUSTIFICATION OF STUDY

Out of the 36 states including the Federal Capital Territory (FCT) in Nigeria, eight (8) of them share boundary with the Atlantic Ocean, while some lie along the Niger and Benue rivers up to the Niger Delta region.

Due to the difficult terrain and high water table in these riverine states, adequate sanitation and hygiene has remained an uphill task for these communities. Waste generally and human excreta in particular are dumped indiscriminately into water bodies with the resultant contamination of ground water. Apart from ground water contamination, the health risks from absence or near absence of improved excreta disposal facility are likely to exceed those of ground water pollution (World Development Indicators 2005).

World estimates suggest that having the proportion of people without access to improved sanitation would save the lives of about 500,000 children in a year. Adequate human waste disposal facilities contribute as much to the improvement of human health and living standards of persons especially in the developing countries. It has also been asserted that inadequate facilities for excreta disposal will enhance the transmission of pathogens from diseased persons to healthy ones.

Riverine communities in Nigeria are facing the enormous challenge of inadequate excreta disposal infrastructure and hence, the prevalence of diseases such as diarrhoea, dysentery and cholera among others in these areas. To attain the Millennium Development Goal's (MDG) target of halving by 2015 the proportion of people without sustainable access to safe drinking water and basic sanitation, there is the need to address this problem of inadequate or inappropriate excreta disposal facilities in rural and riverine communities in Nigeria.

This can best be achieved by understanding the socio-economic and cultural factors that impinge on the choice of latrine option in these riverine communities bearing in mind that an appropriate latrine option must be that which is environmentally friendly, socio-culturally acceptable and economically feasible. Against this background the National Water Resources Institute (NWRI) commissioned Dr. I.C. Idiong of the Department of Agricultural Economics and Extension, University of Calabar (Consultant on Socio-economics studies) to undertake a socio-cultural study of some selected riverine communities in Akwa Ibom State with the view to ascertaining their preferred choice of appropriate latrine options.

1.2 GENERAL OBJECTIVE

The general objective of the study is to examine the socio-cultural and economic conditions of riverine communities in Nigeria, using Ibaka and Uta Ewa communities in Akwa Ibom State as case studies.

1.2.1 The Specific Objectives:

The specific objectives include to;

- i) Describe the socio-economic, cultural and demographic characteristics of these communities.
- ii) Ascertain the type of excreta disposal facility available and used in the communities.
- iii) Ascertain the latrine option that they prefer as well as its appropriateness and make recommendations based on the findings of the study.

CHAPTER TWO

LITERATURE REVIEW

2.1. LATRINE TECHNOLOGIES

There are different types of human waste disposal facilities that have been designed and used in various communities (urban and rural).

Kalbermatten *et al*, (1980) have listed the technologies as; pit latrines, pour-flush toilets, composting toilets, aqua-privies, septic tanks (household sanitation technologies) and Bucket latrines, Vault toilets with vacuum-cart collection, Communal facilities and Sewerage (community based). However in most riverine communities these latrines are not just available and therefore, the people practice open defecation into the rivers and streams.

2.2. APPROPRIATE LATRINE TECHNOLOGIES AND ITS DETERMINANTS

There is no concise and universally correct definition for appropriate technology. However, for a technology to be described as being appropriate it must take into account the affordability of initial and recurrent costs; the performance of the service required; the fit of the technology within local, environmental and skills constraints; and meeting the requirements, traditions and attitudes of those who will use them (Kalbermatten *et al*, 1980, Cairncross and Feachem, 1993; Pickford, 1995; Winblad and Kilama, 1985). According to Kalbermatten *et al*, (1980)

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appropriate technology development and selection involves the identification of all of the available alternative latrine technologies. Ultimately, technologies that do not satisfy the technical and socio-cultural conditions of the environment will be readily excluded and only the technically and socially feasible are left to be chosen. However, the choice of the acceptable appropriate technology rest with the eventual beneficiaries.

2.2.1. Costs of latrine construction and maintenance

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. 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. The partial subsidization of construction cost have enabled many families construct their latrines by spending an amount as low as £1:50. However, but where the bulk of the population in most rural communities, provision of these facilities can only be facilitated by government or its agencies.

2.2.2. The Design and Performance of Latrines

Brandberg (1997) had stressed the importance of latrine cleanliness in encouraging its use, discouraging flies, and reducing the risks of hookworm transmission. He therefore advised that designs of appropriate latrine technologies should encourage hygiene by showing up dirt and facilitating its ease of removal. Simpson-Hébert and Wood (1998) reported that a good latrine must interrupt the cycle of diseases by physically containing faecal matter and preventing the transmission of pathogens via the soil or groundwater. On the other hand, an appropriate latrine according to Brandberg (1997), Pickford, (1995) and Cairncross and Feachem, (1993), must also be safe and should afford privacy for the users.

2.2.3 Latrine technology and Environmental/local Skills mismatch

Various environmental factors (soil permeability and stability; the presence of rock, sand or clay; drainage characteristics; ground water levels, availability of water, possibility of flooding and rainfall patterns among others) that influence the design of appropriate latrines have been documented by (UNICEF, (1997); Brandberg (1997) and Cairncross and Feachem, (1993). In fact, 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. On the other hand, UNICEF's 'Sanitation Handbook' (1997) emphasized the use of available local materials and the engagement of local people in the development and construction of appropriate latrines, as well as encouraging their use.

2.2.4. User Preferences

The preference of latrine users is the most important consideration in selecting technology (UNICEF, 1997). According to DFID (1998) a household will switch to a new system only if its characteristics appeal. It is a requirement that for latrines to be accepted and used by community members and for health benefits to be realised, the designs must therefore match their preferences (Simpson-Hébert and Wood 1998 and Marshall and Fawcett 2003). Deverill et al (2001) are of the opinion that sanitation improvements should be approached incrementally, based on local beliefs and practices and work towards small, lasting improvements that are sustainable at each step.

2.2.5 Other factors:

Other important variables to consider when introducing a latrine technology to communities can be grouped under what Fresh (2006) call community factors. These include factors such as taboos, habits, religious rules and regulations, attitude to human faeces and gender specific requirements, ownership, role of traditional leaders, status and prestige, population densities, and limited space for latrines among others.

CHAPTER THREE

RESEARCH METHODOLOGY

In this section the different approaches and stages adopted to gather the relevant information and methods of analyzing the data obtained are chronologically presented.

3.1. CONSULTATIONS

On the 12th of December 2008, a reconnaissance survey was carried out by the team comprising, Dr. Dogara Bashir (Leader), Mrs. C. Okafo and Engr. Mike Nwude from the National Water Resources Institute, and four staff of Akwa Ibom State Rural, Water and Sanitation Agency (AK-RUWATSAN), the two Consultants ; Engr. Mike Chukwurah for the Soil Study and Design and Dr.I.C. Idiong, who, handled the Socio-Cultural study. The team paid a courtesy visit on Eteidung (Chief) Akpan Akpan Uwa Unio 11 (the Village head of Uta Ewa); Chief A.A.Etifit and His Highness Ovong (Hon) E.O.Isemin (the village Head of Ibaka and Clan Head of Okwong clan respectively) and intimated them of the proposed study to solicit for their cooperation during the field work as well as during the construction phase. The visit was also necessary to guard against any infringement the study might have on the socio-cultural values and norms of the communities.



Plate 3.Ia: The Consultant on Socio-cultural Study addressing the secretary of the village council on the mission of the team in Uta Ewa community.

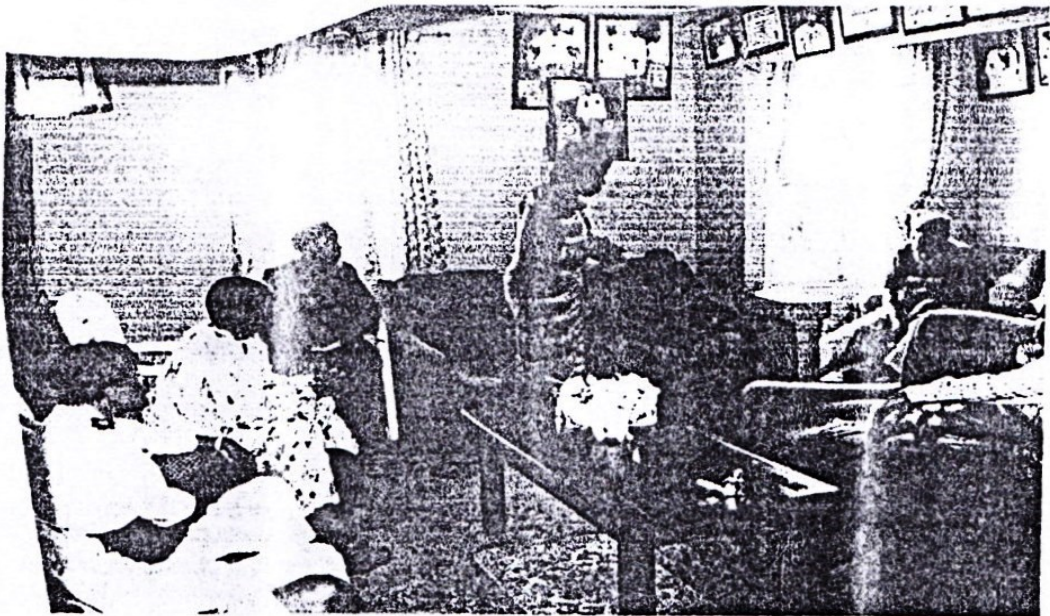


Plate.3.1b: Socio-cultural Study team consulting with the Clan Head of Ukwong Clan, His Highness Ovong(Hon) E.O.Isemin in Ibaka



Plate3.2: Focus Group Discussion Session in Ibaka community.



Plate 3.3: Focus Group Discussion Session in Uta Ewa community

communities were in attendance. This workshop was intended to further help in the sensitization of the communities and to get them committed to the success of the study especially during the field work stage of the proposed project. It was also useful in finalizing the work plan and implementation strategies.

3.2. BRIEF DESCRIPTION OF STUDY 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. Uta Ewa which is situated along the coast of the Imo river that is opened up into the Atlantic Ocean with the following coordinates, $E008^{\circ} 20.23''$ and $N04^{\circ} 57.12''$, is about eighty (80) minutes drive from Uyo (the capital city of Akwa Ibom State) and also about fifteen minutes drive from the headquarters of Ikot Abasi LGA. It belongs to the Ibekwe clan and was recognized as a village in May 29th, 1983. It shares a common water (Imo River) boundary with the famous Opobo town in Rivers State. It comprises the following families; Ebre, Eket, Nkana, Ukpongeyen, Ikot Okpok and Ufa Idung. Ibaka community on the other hand is 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.

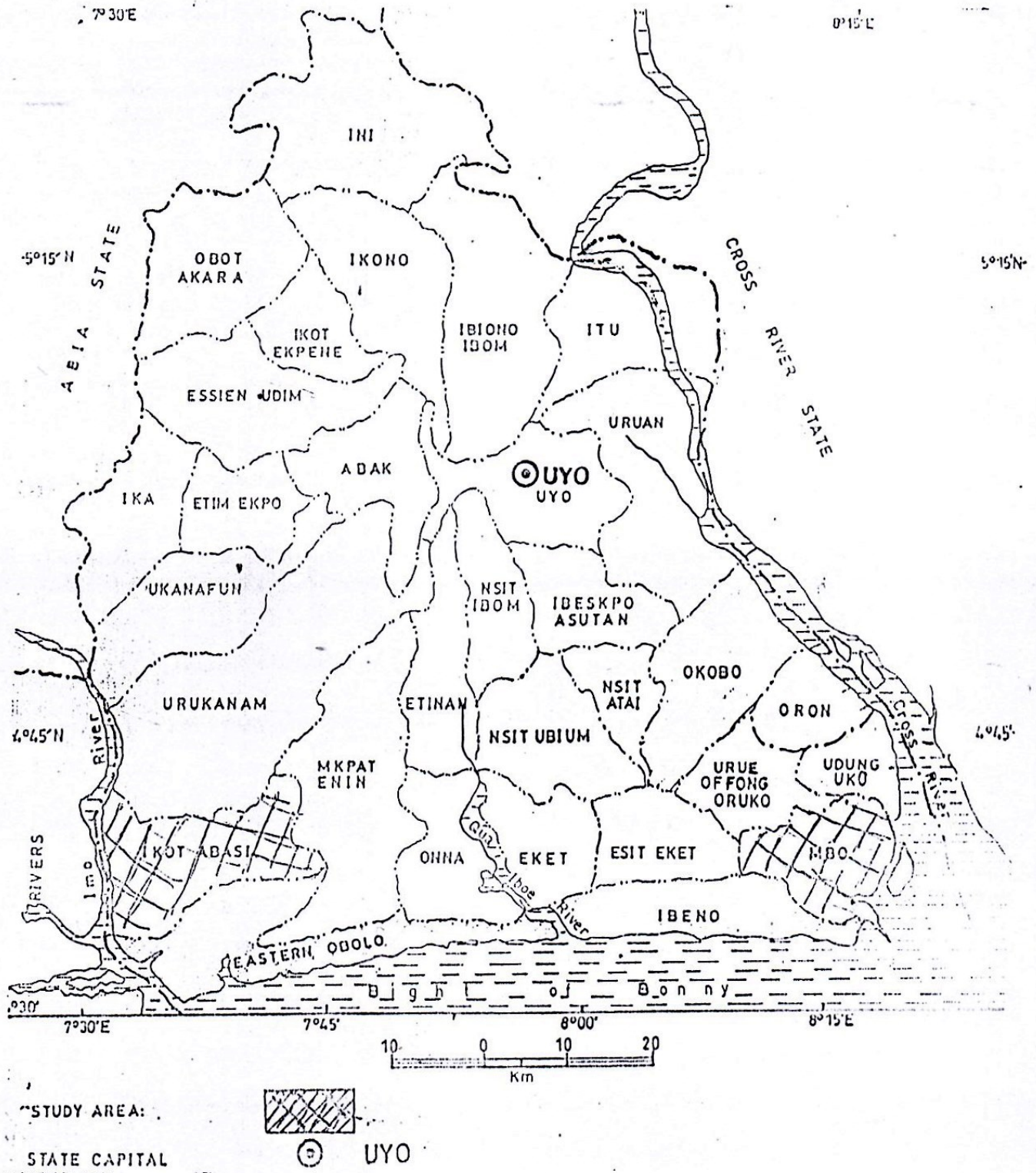


Fig.1. Map of Akwa Ibom State Showing the Local Government Areas under Study.

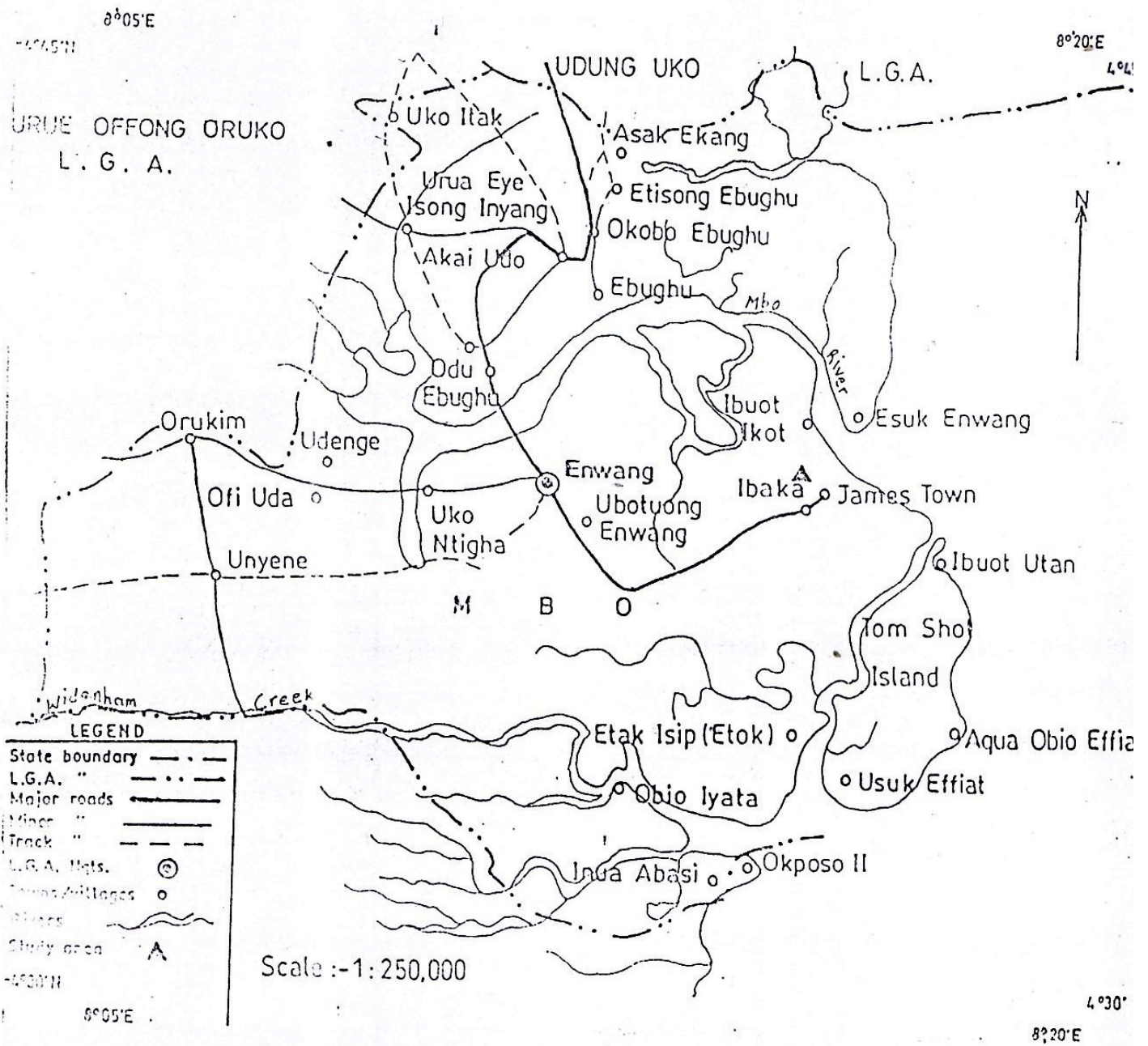


Fig.2. Map of Mbo Local Government Area showing the Study Area.

15

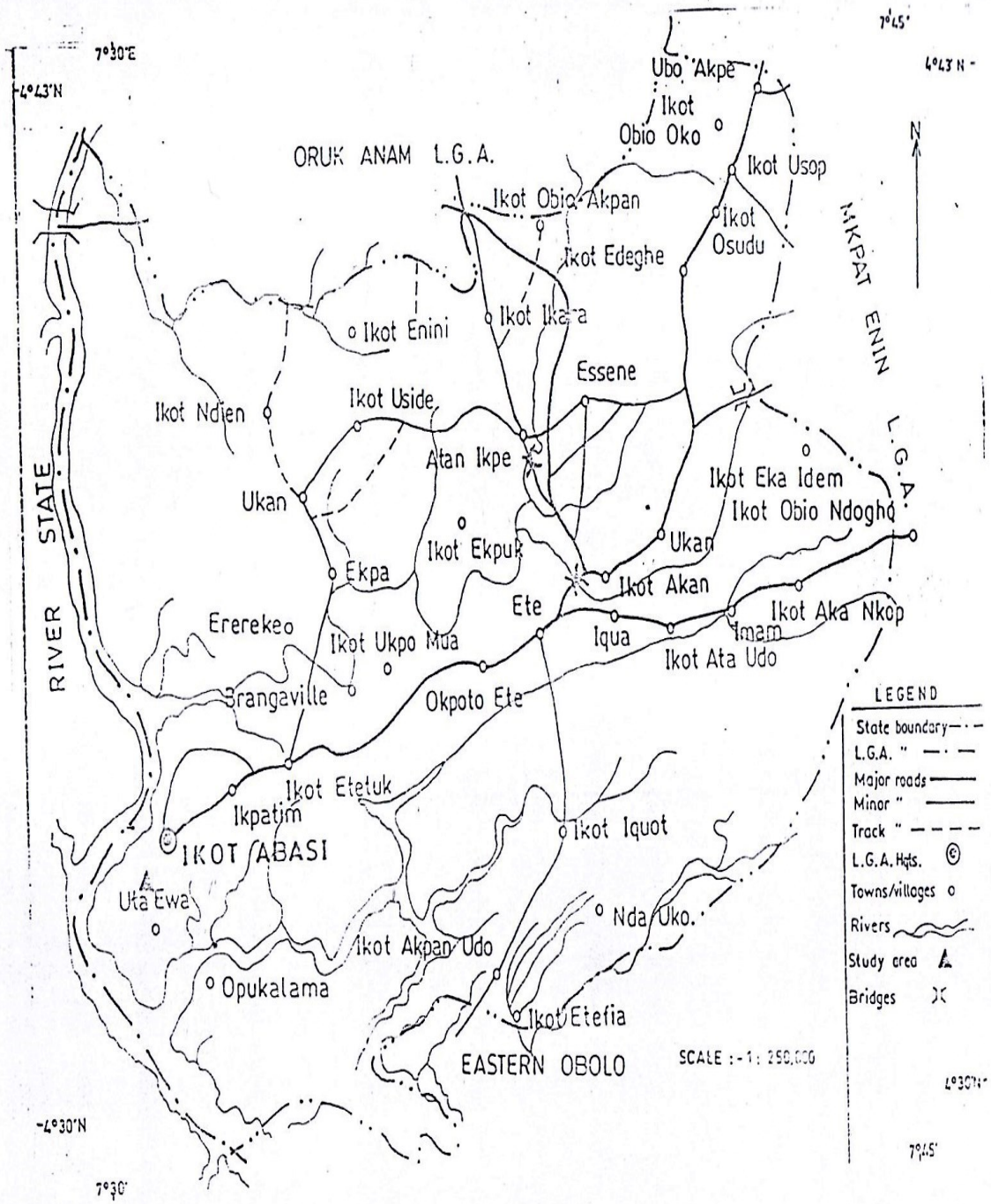


Fig. 3. Map of Ikot Abasi Local Government Area Showing the Study Area

It is located on the coordinates E008° 18.15' and N04° 39.04' North. It shares boundaries with the islands of Bakassi that were recently ceded to Cameroon. The area is notable for being the first host of the Methodist Church in Nigeria in 1897. The community is constituted by nine families, which include; Udong Edim, Udong Antok, Udong Ikpabia, Udong Nyafa, Udong Isemin Udombo, Udong Antigha, Udong Inyang, Udong Abasi and Udong Eyo.

The inhabitants of these two communities are primarily engaged in fishing and also cultivate food crops such as cassava, yams, cocoyam, plantain and vegetables among others.

3.3. SAMPLING TECHNIQUES AND SAMPLE SIZE

A combination of purposive and random sampling techniques in a multistage stage procedure was adopted for this study. 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, in Uta Ewa community, we used the households list compiled by the family heads in the community as a sampling frame and chose a random sample of 100 household heads 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 300 hundred respondents was obtained and used for the study.

3.4. SOURCES OF DATA AND METHODS OF COLLECTION

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 were 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 communities among others.

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

Table 3.1: Questionnaire Administration and Retrieval Rate

S/N	Community	Number 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.

Note: * Mean rate of questionnaire retrieval.

Questionnaires were used in obtaining 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 them. The questionnaires were validated and thereafter pre-tested and 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 questionnaires' administration and retrieval from household heads (respondents). Key informants were also administered questionnaires to provide information on rural infrastructure in the community.

A visual assessment of the settlement patterns and some infrastructure in the communities were also carried out. The field work spanned from the 12th to the 26th of January, 2009. Of the total of 300 questionnaires administered, only 272 were retrieved (about 90.50 percent).

However, out of this number only 266 were properly filled and thereafter used for the analysis.

3.5. ANALYTICAL TECHNIQUES

After retrieving the questionnaires, the data 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.

3.6. LIMITATIONS OF THE STUDY.

In the course of the study the following limitations were encountered;

- i) A purposive sampling technique had to be adopted in selecting respondents in Ibaka community because it was not possible to obtain a household listing.
- ii) Questionnaire administration was hiccupped especially in Ibaka due to insufficient sensitization of the members of the community. There exist mutual suspicion in this community and therefore respondents were not readily willing to cooperate with the enumerators. This accounted for the lower retrieval rate of questionnaires in this location.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1 SETTLEMENT: HISTORY AND PATTERN

There are no documented histories of the communities (Ibaka and Uta Ewa) and therefore oral information remained the only source of putting together this brief history.

Oral history has it that the founders of Ibaka migrated from Ulung Ulo in Urueoffong Uroko to Ukuda in the present Mbo Local Government Area the 17th century. The two brothers Eyo-Ayafia (founder of Ibaka) and Abia Antai (founder of Ukontigbe) moved as warriors and adventures to locate new places. From Mbo they moved further to Edem Inyang and finally arrived at Ibaka. The name Ibaka (pronounced originally as Iba-aka in Efik meaning that, two persons have gone. This name was gotten as an answer to the question of the where about of these two brothers, after they might have left Ududa. The primitive Methodist Church renamed the community Jamestown after a man called James Ekpo Bassey (who migrated from Cobham Town and was the first man to invite the church in 1896).

However, the case with the retention of the name Ibaka was contested and won in the Supreme Court in 1989 by the original Landlords (the Ibaka people).

Ibaka community which is a village in Ukwong clan is made of nine (9) families with Enwang and Efiat villages as neighbours. They belong to the Oro nation and speak the Oro language. They share some life styles of the Efik people in Cross River State. The houses are arranged in clustered settlement pattern, with most of the non-indigenes (the Ghanaians, Ijaws, Ibos and Gabonese among others) occupying the shanties near the beach.

Uta Ewa community on the other hand is a renown fishing community along the banks of the Imo River. Information gleaned orally has it that the area was initially a forest and was founded by hunters who used dogs in their wildlife expedition, hence the name Uta Ewa (dog eaters). It is a catchments area that is occupied by people from various communities in Akwa Ibom State and the neighboring States of Rivers, Abia and Bayelsa.

It was recognized as a village in Ibekwe clan in Ikot Abasi Local Government Area, on the 29th of May, 1983. The founder of the community was Ete Idung Akpan Unwa Unio. His effigy is centrally located as one enters the village.

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 and the need to maintain adequate sanitation to improve health and meet the Millennium Development Goals (MDGs) of adequate and safe water and sanitation by 2015, the need for reliable data on population need not to be overemphasized.

4.2. TRADITIONAL INSTITUTIONS, LOCAL GOVERNANCE AND SOCIAL ORGANIZATIONS OF THE COMMUNITIES.

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 Village Council comprises the Chairman, Secretary, Treasurer, Financial Secretary, Women leader and the Youth Leader. The village heads of these communities report to their respective Clan Heads who are accountable to the Paramount Ruler of Mbo and Ikot Abasi Local Government Areas respectively.

In Ibaka, immediately below the Village Head, is the Council of Chiefs, comprising the Heads of all the families in the community. The village head is

appointed by the Council of Chiefs and it is rotational among the different families. This mode of appointment of village heads goes a long way in curbing chieftaincy feuds that are quite common in most communities and this tend to retard the socio-economic growth of such communities. The village heads assist in the settlement of civil matters, while criminal cases are handed over to the Police.

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

In these two communities, youths associations, age grades and women organization 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 organisations are moribund, while others are still active. They active ones include the Emediong Fishing Cooperative, Nka Esit Kiet Fishing Cooperative, Emediong Gas and Oil Multipurpose Cooperative and the Uta Ewa Union Cooperative Societies in Uta Ewa. Membership of associations aids in the dissemination of information about new technologies within the communities. 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).

4.3 RELIGION AND CULTURE OF THE COMMUNITIES.

The predominant religious sect in the communities is Christianity. Various denominations can be found in and around the communities. These include; the Catholic, Apostolic, Methodist, Presbyterian, Deeper Life, Redeem Christian Church of God among others. In Ibaka, the Methodist was established there in 1897 and was the first church to be so sited in the area as well as being the first in the Eastern region. Apart from Christianity, there are a handful of adherents of the traditional and esoteric religions. For those who practice the traditional religion in Ibaka, they worship some gods such as Mkpang Utong (water goddess) known to be in charge of the sea, while in Uta Ewa there are also gods called Mkpasa, Adiaha-Uta Ewa and Ofion-Uta Ewa respectively. The first two gods are responsible for the maintenance of peace while, the last one controls activities in their water. Religious beliefs have been reported by Ekong (2003) as having the tendency of influencing community development positively or negatively.

The major festivals celebrated in these communities are the Christian festivals of Christmas and Easter. In Uta Ewa, the Village Head celebrates the yam festival with his close associates between the month of August and

October. In Ibaka, there is the traditional wrestling festival as well as the Ibaka Day which is always a sort of home coming for sons and daughters of Ibaka residing in other towns at home and abroad. It is celebrated on the 27th of December every year. The communities also boast of various traditional dances and masquerades, such as; Abang, Nyok, Mbobo, Mbaya, Afiakayit, Ekpe, Ekpo, Obon, Ekprikata, Ekong, Akata and Ekpe Ibo among others. These masquerades and dances are displayed during some of the festivals and other events celebrated in the communities. They are always very colourful and entertaining.

In these communities, certain habits that are against their norms and value systems are abhorred. Such habits include, stealing, adultery, gossips and fighting among others. In Uta Ewa, the punishment for stealing is ostracizing, the culprit, while fighting attracts a fine of twenty-four (24) bottles of illicit gin for the offender and twelve (12) bottles each, when the two persons are caught fighting. In the case of adultery, the matter is reported to the Police for arbitration. In Ibaka however, a thief is often stripped naked, beaten, fined and marched around the town and becomes a social misfit. This serves as a deterrent to others.

Witchcraft is fast becoming a taboo and there have been a case reported in the dailies about a Bishop in Ibaka who claimed to have killed over a hundred children who were declared witches by their relations. This

action had attracted worldwide condemnation. It is also a taboo in Ibaka for non-initiates of some masquerades to come out when the masquerades are on outings.

There are no taboos about food in Uta Ewa, however, in Ibaka the eating of a type of fish called Mudskippers as well as dogs is forbidden. A breach of this custom, results in the person becoming swollen and subsequently dying except when the gods are appeased on their behalf.

4.4. AVAILABLE RURAL INFRASTRUCTURE

The infrastructure available in the two communities, were similar except that, in Ibaka there were more and functional. The availability of certain infrastructural facilities in any community speaks volume of the stage of development of such communities.

4.4.1: 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. The schools need modern and functional equipment to enhance efficient service delivery. It is likely that the schools will benefit from the on going rehabilitation of schools project embarked by the present government in Akwa Ibom State. It is also important that adequate human waste disposal facility be provided in the schools.

In Uta Ewa community, there is 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. It is therefore important for the authorities to bear this in mind, given the importance of education in the socio-economic development of any community.

The available medical institutions in the Ibaka community include; Hospital and several patent medicine shops, Traditional healing homes and Tradition 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 are 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.

4.4.2: Water and Electricity Supply

There is a near absence of potable source of drinking water in the communities except for a few boreholes provided by the government and private individuals. In Ibaka the borehole water facility provided by the State government is non functional as a result of the breakdown of the generator that aids its pumping water. The people depend on the four privately owned private boreholes and streams as source of water for various uses, including drinking. However, in Uta Ewa, the only borehole provided by the State government though functional is still inadequate to meet the demand for water in the community.

More so, the quality of water from these boreholes is 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.

The 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 is relatively stable.

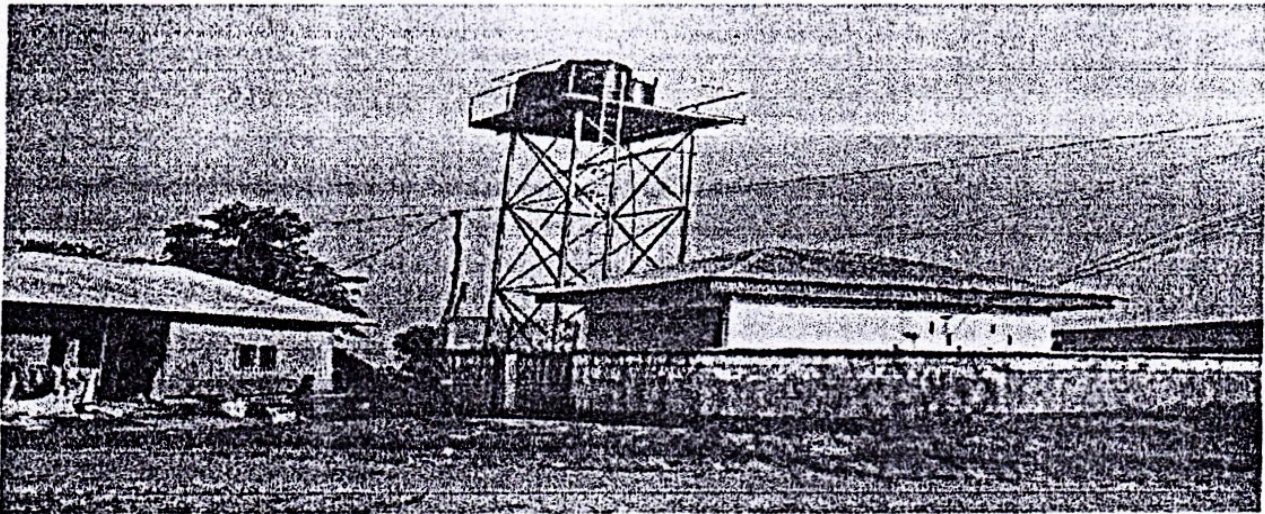


Plate4: Borehole provided by government in Uta Ewa community.

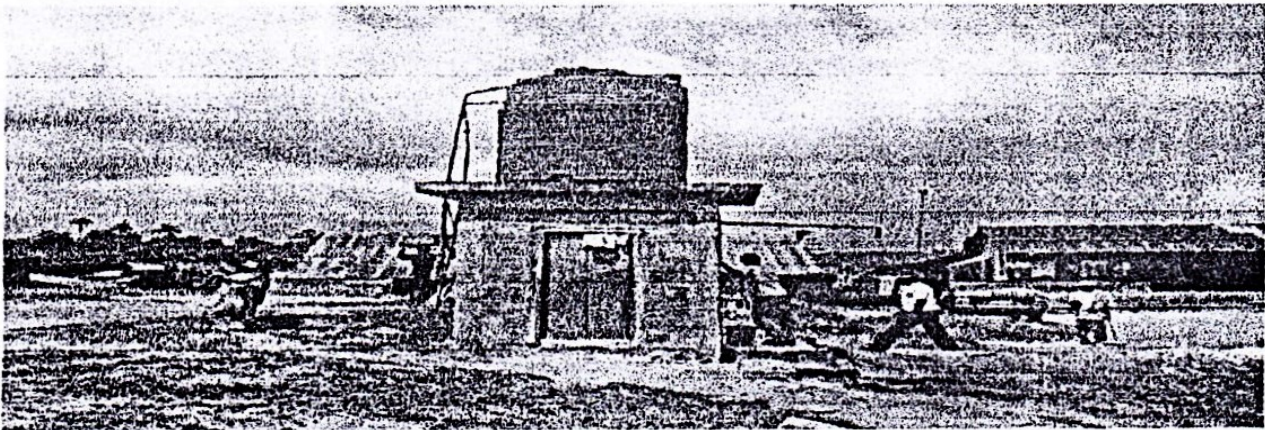


Plate5: Private borehole in Ibaka community

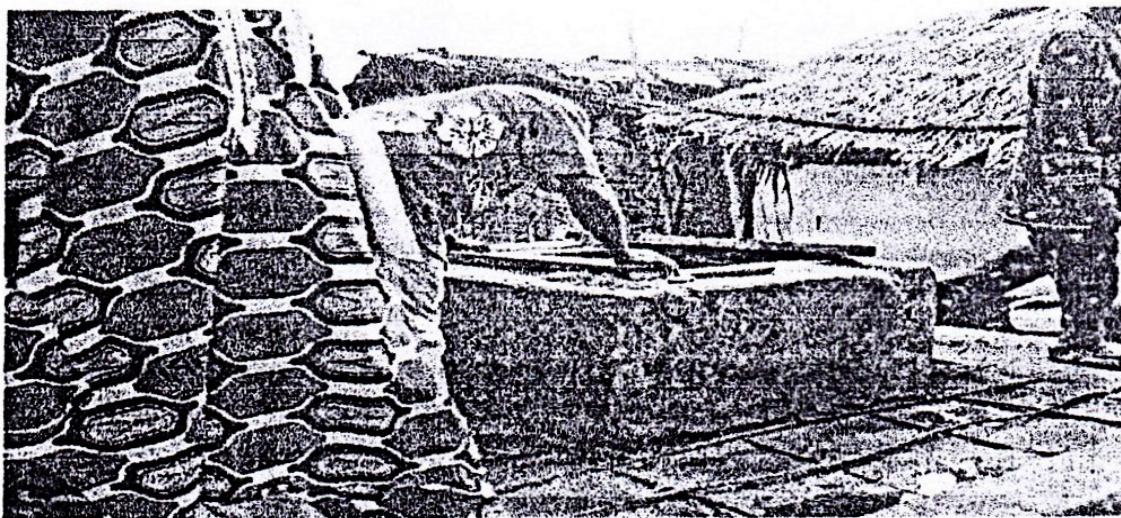


Plate 6: Hand dug well in Uta Ewa community

However, in Ibaka, electricity which is supplied by the Power Holding Company of Nigeria (PHCN) is 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.

4.4.3: Settlement Pattern, Housing and Waste Management.

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. Most of the houses were built to provide accommodation for both nuclear, and extended family members. Like in any other community, a person's building speaks about his socio-economic standing. The wealthier and educated a man is, the more modern the kind of house he will build and live in. In Uta Ewa community, all the buildings by the water front inhabited by a good number of members of the community had mud walls and thatched roofs, indicating their lower socio-economic status. A few of the houses were modern especially that of the current Village Head who is well to do (See Plates 7, 8 and 9).

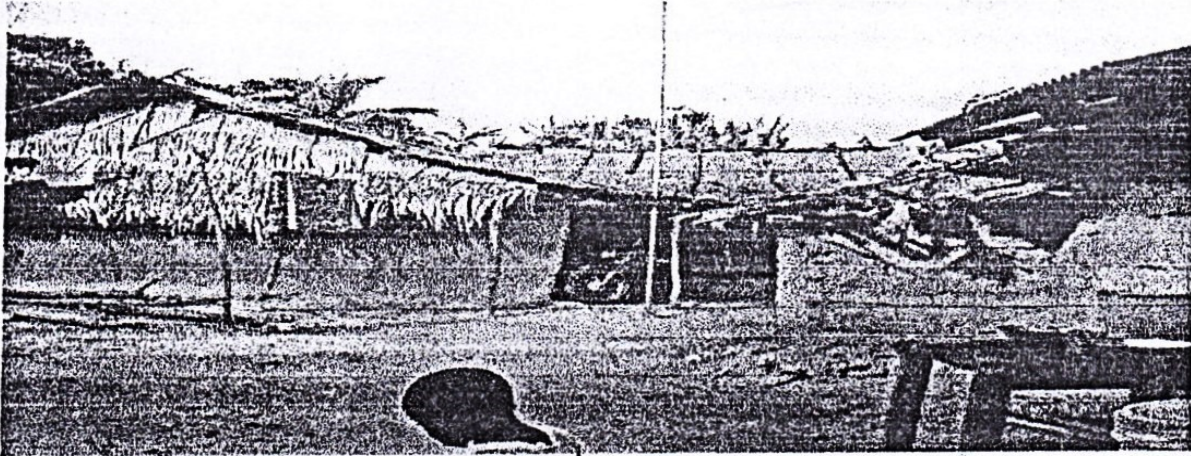


Plate 7: A mud wall and thatch roof house in Uta Ewa

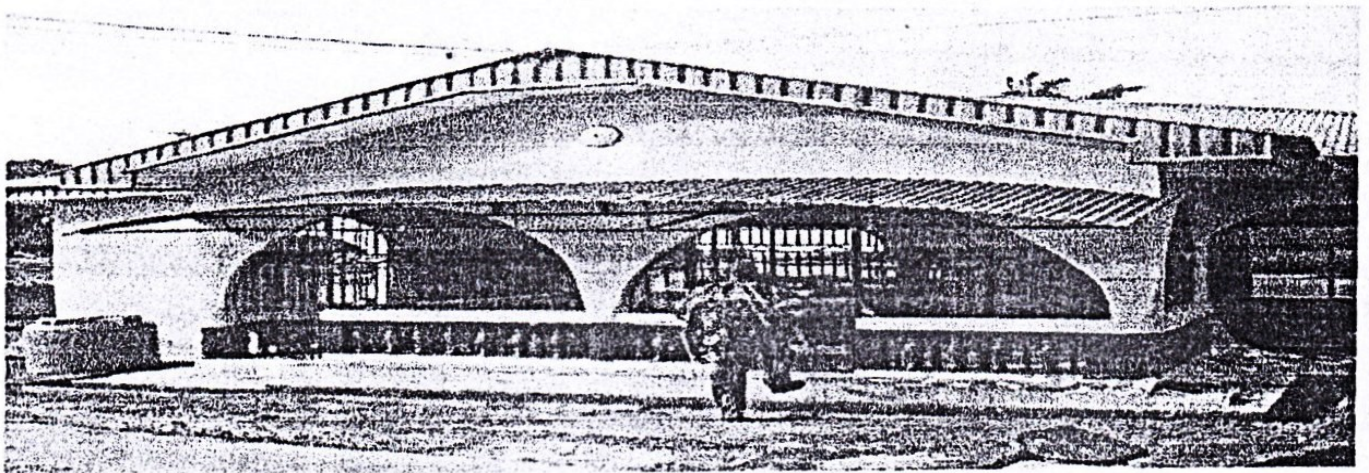


Plate 8: A modern house in Uta Ewa community



Plate 9: A typical all thatched (wall and roof) house in Ibaka community

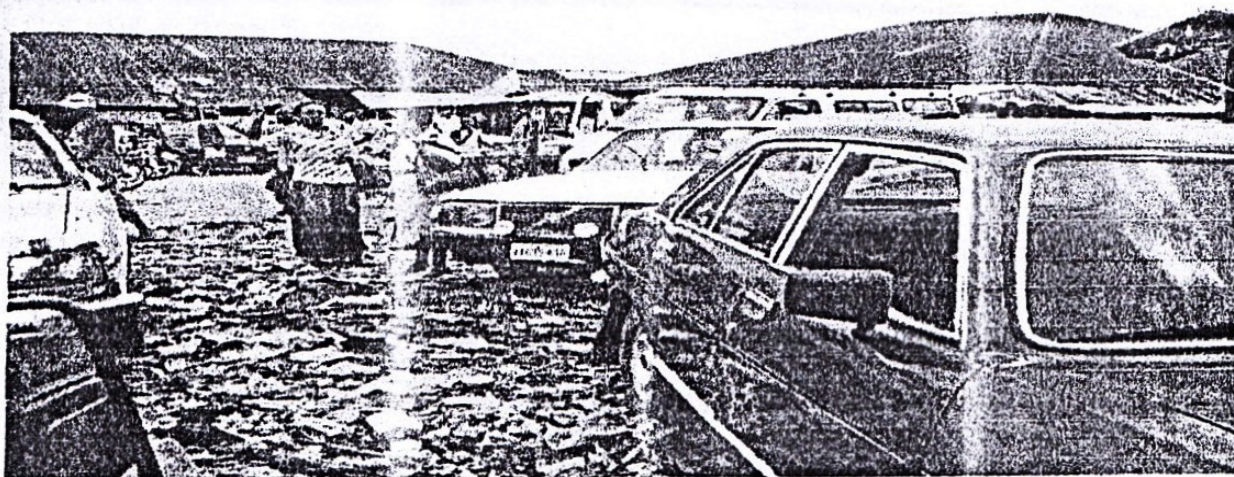


Plate 10: Indiscriminate dumping of waste in a parking lot in Ibaka market

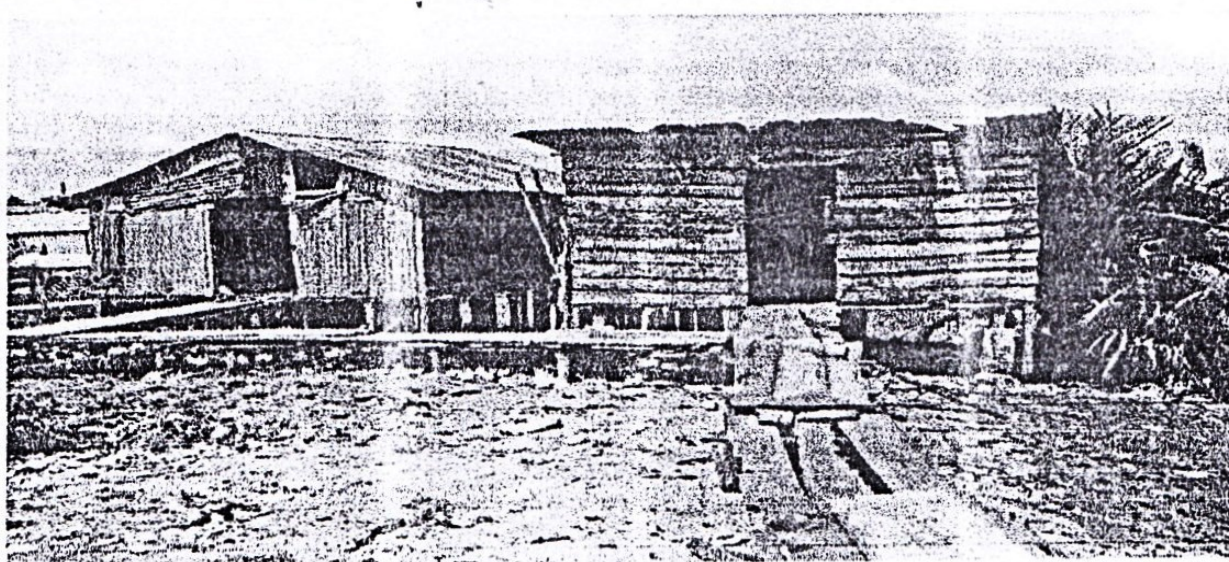


Plate 11: A typical latrine in Ibaka where excreta is deposited on the ground to be carried ashore by the receding tide.

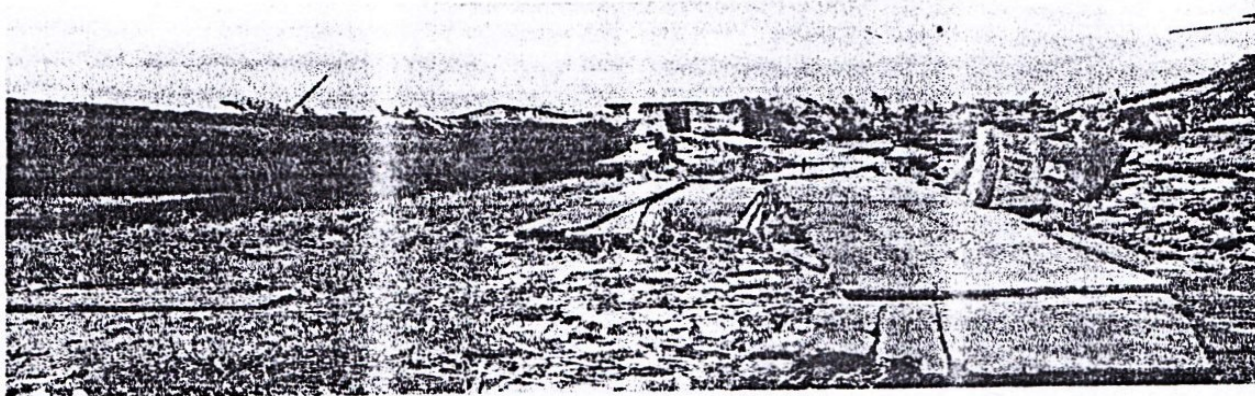


Plate 12: Household wastes that were dumped in the rivers being deposited on-shore by the receding tide.

Household wastes are disposed off indiscriminately in the surrounding bushes, nearby dumps and ultimately in the streams/rivers. Human wastes in particular are disposed off using the streams and rivers. It is 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).

In Uta Ewa, most of the households do not have latrines and therefore they defecate into the river and surrounding bushes. Because of this, the Councilor representing them had constructed a communal pour flush latrine (not elevated) by the water front for them to use. As at the time of this study, the project had not been completed although its appropriateness cannot be ascertained given the high water level at that location. 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.

There are 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 is inadequate to cater for the entire community and visitors who come in daily carry out businesses on a daily basis in the community.

4.4.4: Roads, Transport and Communication

There road leading into Uta Ewa community as well as the Cement Company under construction is asphalted and therefore, motorable. This infrastructure has 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 is not in a good shape currently. The Local Council had attempted a little grading of the road, but not enough to ensure free flow of the vehicular traffic experienced on this only road daily. The road might become quite deplorable when the rains set in and therefore would need urgent rehabilitation.

With on going construction of a sea port and the proposed Liquefied Natural Gas Plant for the community, this call for road expansion and rehabilitation is necessary and timely so as to enhance the movement of heavy vehicles in and out of the community, especially during the construction phase of these projects. The commonest means of transport in the community is the use, of motorcycles and engine and speed boats. These speed and engine boats convey passengers from Ibaka and Uta Ewa across the rivers to the various creeks and settlements.



Plate 13: Asphalted road leading into Uta Ewa community.

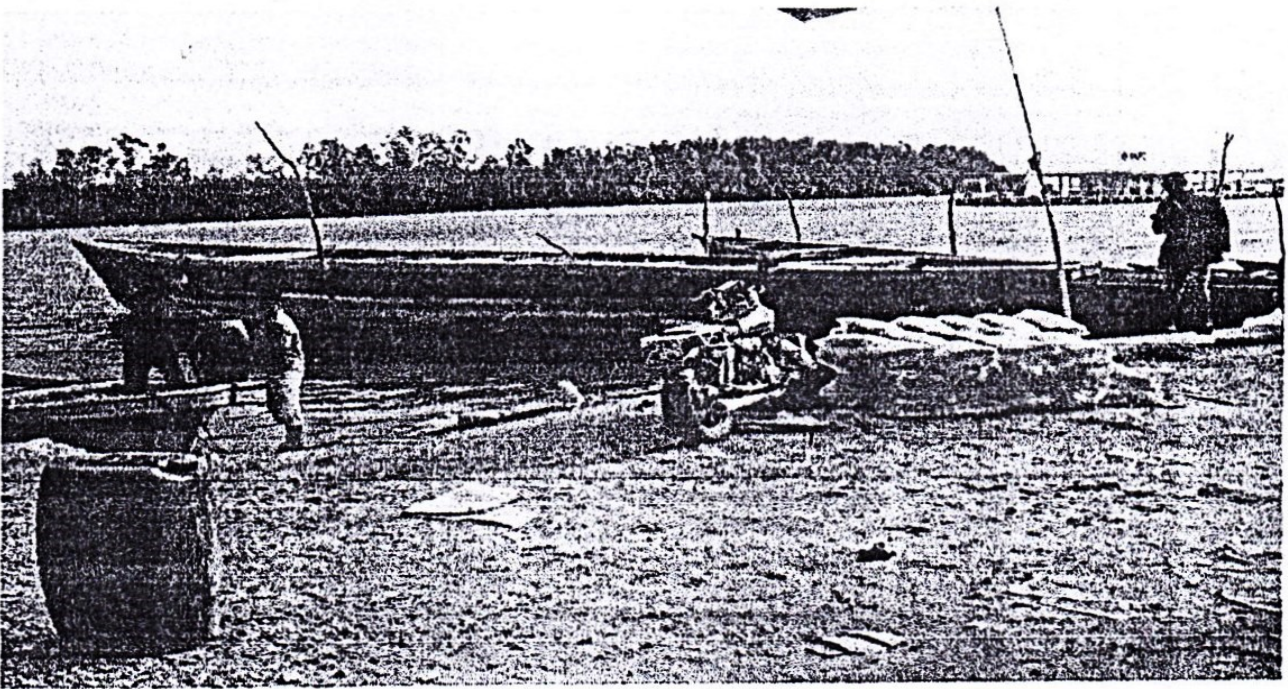


Plate 14: Commonest means of Transport in the communities

Much of the smoked fishes and Cray fish are transported from the fishing settlements to the terminal beaches of Ibaka and Uta Ewa by very large motorized boats. Motor vehicles are used for evacuation of fresh and smoked fish from the beach to other parts of the State and country.

Communication facilities available in the community are the Postal Agency (in Ibaka) and the Global Services of Mobile Telephony (GSM). Individuals in the communities, who do not own hand sets, patronize the commercial call centres to receive and make calls. These services are provided by the three important players in the telecommunication industry in Nigeria i.e. MTN, Zain and Globacom. The use of the mobile telephones in communication was quite helpful in enhancing the study in that pieces of information were gotten with just a touch of the buttons on the handset.

There are also some commercial television viewing centres provided by individuals and patronized by members of these communities especially the youths. It is quite common in these communities to see young persons watching European Football league matches in such viewing centres. In a few homes of the well to do, there are satellite dishes mounted to enable household members, enjoy and watch TV programmes (both local and international).

4.4.5: Commerce, Industry and Tourism

Most commercial activities are done in the daily and periodic beach markets in the communities. There are also a number of service industries such as Restaurants and Bars. There is no prominent Guest house within the community. A number of businesses such as hair dressing and barbering saloons, carpentry, dress-making shops, Filling Stations, land and water transportation and grocery shops among others are also found.

In terms of industrial outfits, the Akwa Ibom State government is partnering with some private firms to establish a Flour mill and Cement Factory in Uta Ewa community. It is also building a Sea Port and a Liquefied Natural Gas Plant in Ibaka community. It is expected that, at the completion of these projects the socio- economic environment of these communities would have been drastically improved with many service industries springing up and providing job opportunities for the unemployed youths in these communities and the neighbouring ones. With the expected influx of persons into these communities, there is need for the provision of adequate and appropriate waste disposal facilities especially latrines.

In terms of tourism, the communities are blessed with beaches that need development into recreation centres for tourists and holiday makers. There are open spaces (Church and school grounds) and communal play grounds that are used for recreation and other ceremonies. It is therefore

pertinent that adequate waste disposal facilities be provided while attempts are being made to develop these tourism and recreation sites for would be users.

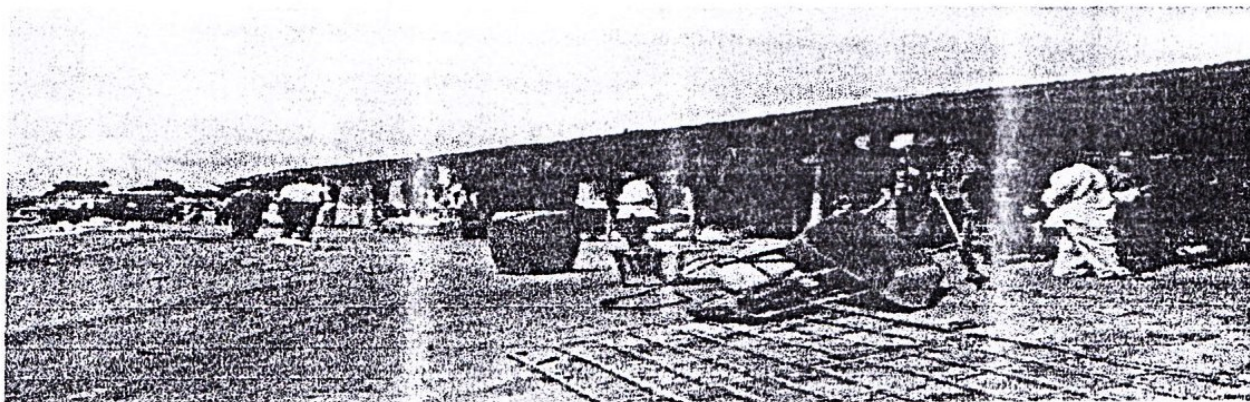


Plate 15: Line of Shops along the Beach

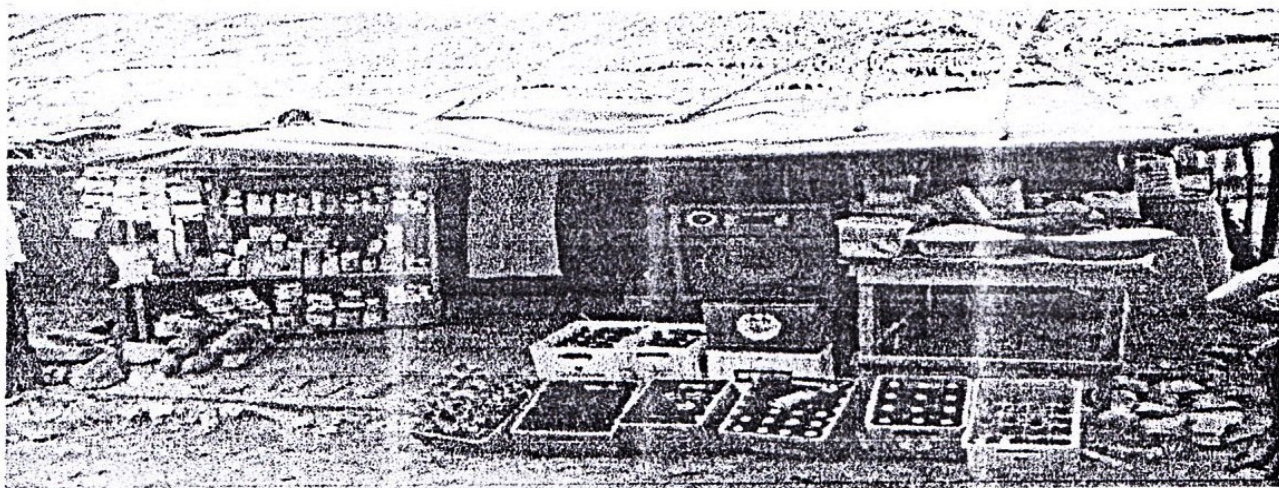


Plate 16: Grocery shop in Uta Ewa community

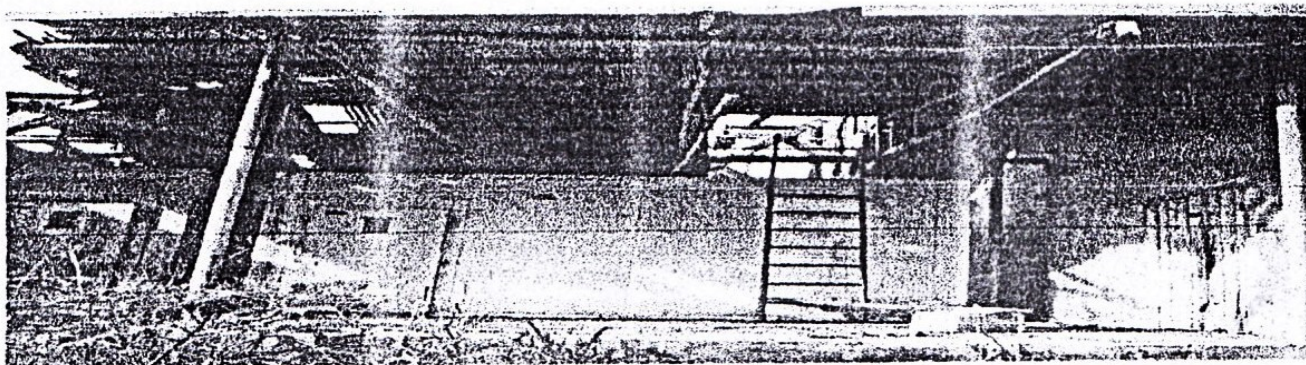


Plate 17: An abandoned Cold Room that needs rehabilitation in Uta Ewa.

4.4.6: Law and Order

Peace is an essential ingredient in the development of any community and that is why maintenance of law and order is a primary goal of Government. To achieve this, the Nigerian Police have their presence in the Ibaka community. Although in Uta Ewa there is no Police post, the Police Divisional Headquarters in Ikot Abasi which is about 10 minutes drive from the community serves the community. Their duties include the enforcement of law and order and arbitration in civil and criminal matters in the communities among others. The vigilante groups also help in providing security of lives and properties of persons in these communities, thus complementing the work of the Police.

In Ibaka being an international border community, the presence of the Nigerian Immigrations and the Nigerian Navy is noticeable. There is a customary court in Ibaka but non in Uta Ewa. The existence of Customary Court enhances the administration of justice and meting out of punishment to those who breach the laws.

4.5: SOCIO-ECONOMIC CHARACTERISTICS OF THE RESPONDENTS IN IBAKA AND UTA EWA COMMUNITIES IN AKWA IBOM STATE.

4.5.1: Sex, Age, Marital Status Religion, Education and Household composition of Respondents in the Study Areas.

In this study the males were identified as being in the majority (78.91% and 76.77% in Ibaka and Uta Ewa respectively) as household heads in the two communities (see Fig 4.). The female household heads were either single, widows or divorcees.

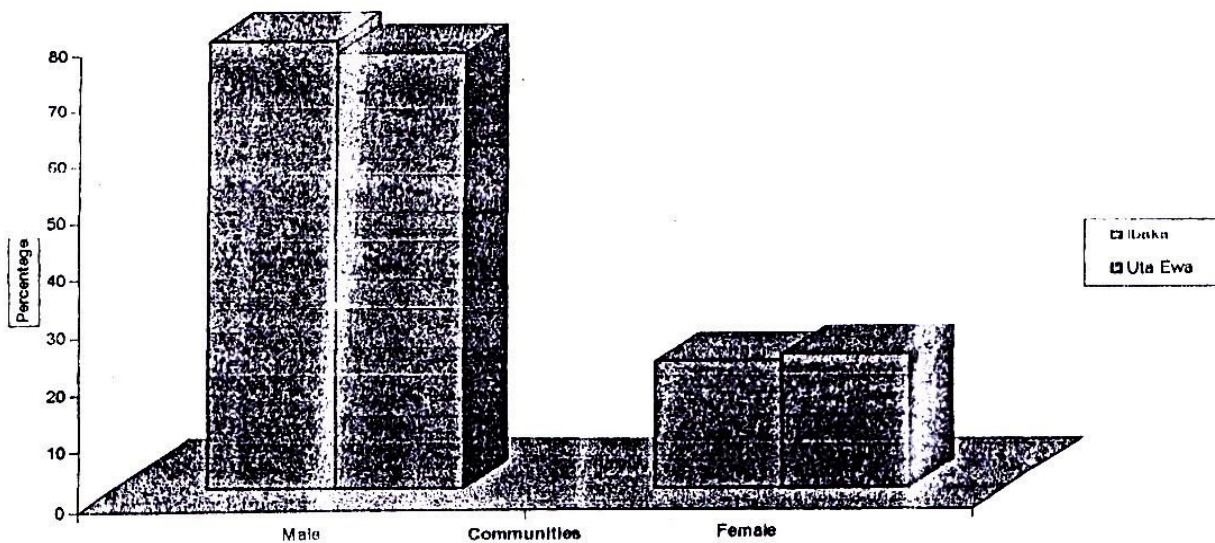


Fig. 4 Distribution of Response by Sex

Majority (87.85% and 82.52% in Ibaka and Uta Ewa respectively) of these respondents also were between the less than 25 and 55 years age bracket (Fig.5). This gives an indication that a good percentage of members

of these communities were within the youthful and middle age bracket and therefore can be very active in any development activity in their respective communities. Those who were above 56 years of age were just about 12.15% and 17.48% in Ibaka and Uta Ewa respectively.

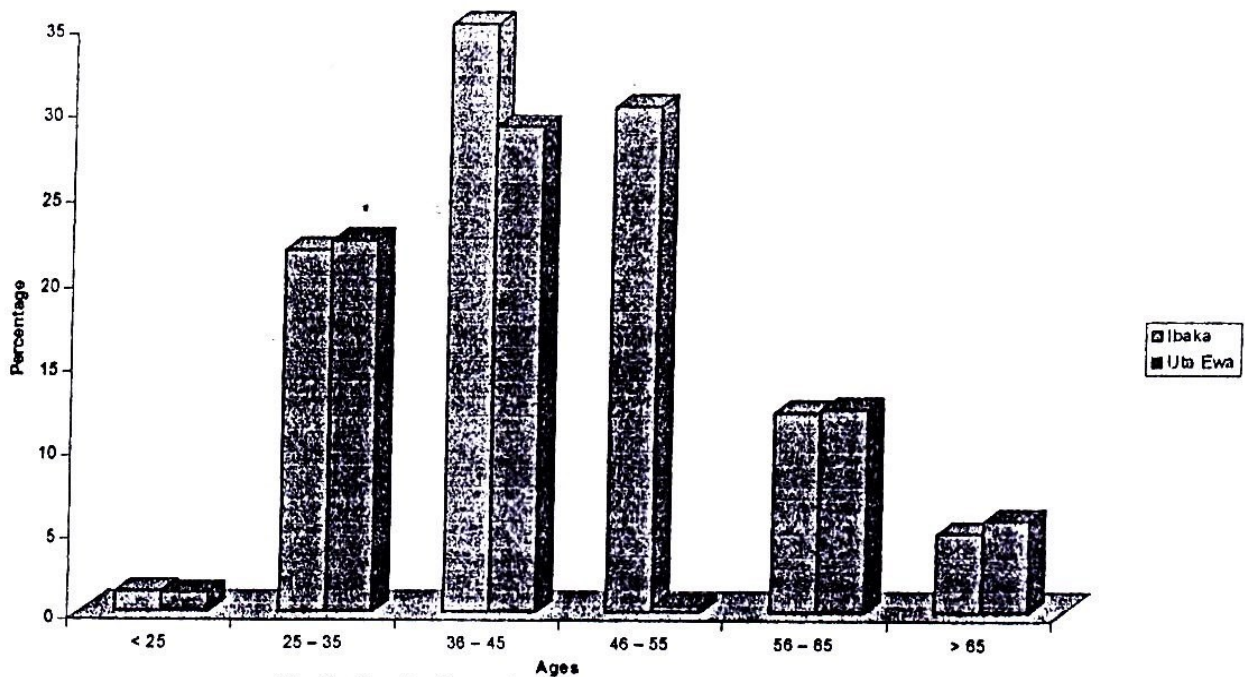


Fig. 5 Distribution of Response by Age

Figure 6 shows that a good majority (75.90% and 86.67% in Ibaka and Uta Ewa communities respectively), were married, and those who were not married were either singles, widows/widowers, separated or divorcees.

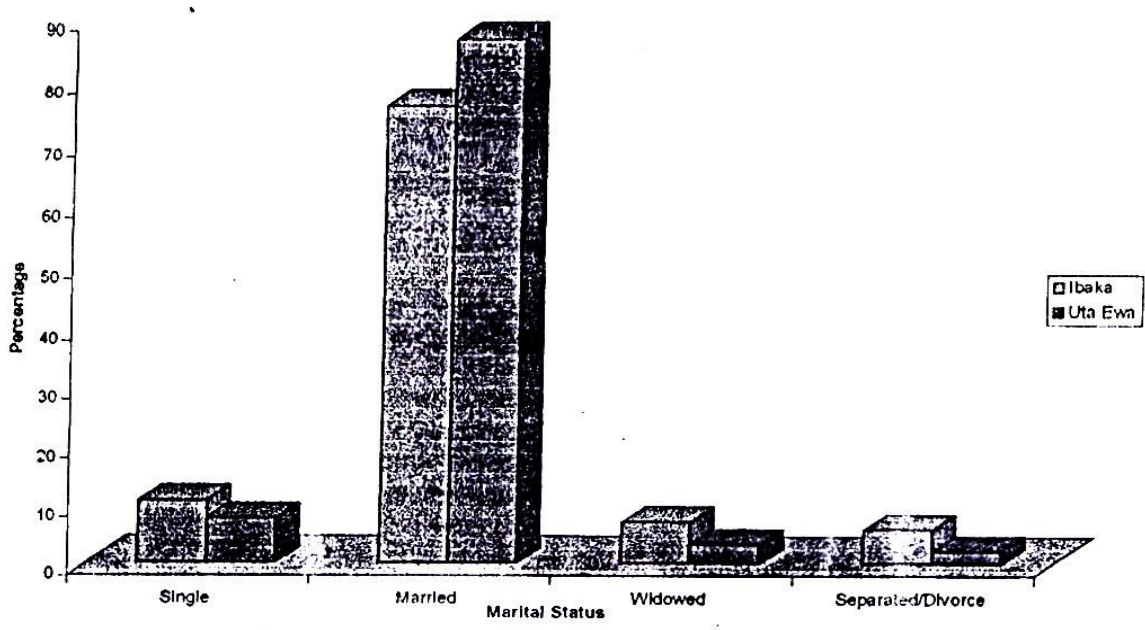


Fig. 6 Distribution of Respondents by Marital Status

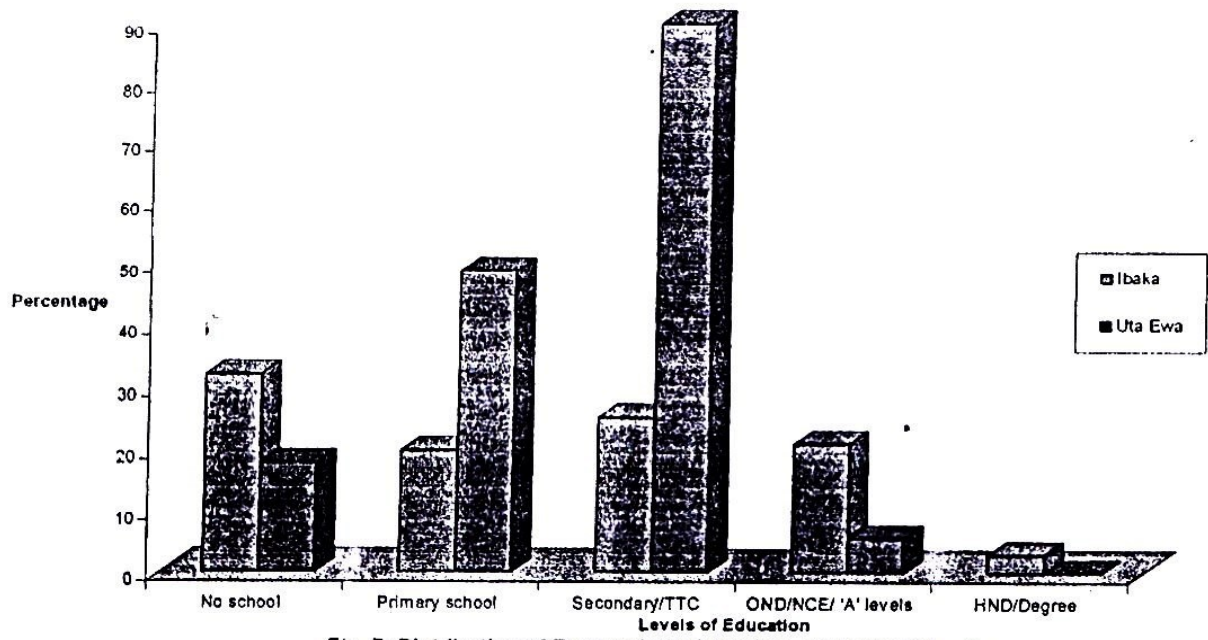


Fig. 7: Distribution of Respondents based on educational levels.

Most of the respondents were literate in both communities (68.17% and 82.23% in Ibaka and Uta Ewa respectively). Within this literate group, majority had attained a primary School level of education in both

communities. The importance of education in bringing about social change by modifying cultural heritage and development of new knowledge, skills and arts among others (Ekong, 2003) in a developing rural community cannot be over-emphasized. Unfortunately about 31.93 percent of the respondents were illiterate and therefore a cause for concern. Education will make them relevant in the rural economy in terms of job placements in the proposed Sea port and Liquefied Natural gas projects when completed.

A very large majority (92.15% and 95.56% in Ibaka and Uta Ewa respectively) of the respondents are of the Christian faith while a small percentage (2.41% in Uta Ewa) had no religious affiliations.

The preponderance of churches in the community accounts for the larger percentage of Christian faithfuls in the community. Religious beliefs in a community can act as negative or positive factors in acceptance of new technologies (Ekong, 2003), including this latrine option to be introduced

Household composition shows that majority of household members were within the 0 and 17 years bracket. This has implication on the provision of infrastructure and services that would serve this group especially in the area of health and education. The mean household size is about 7 persons per household.

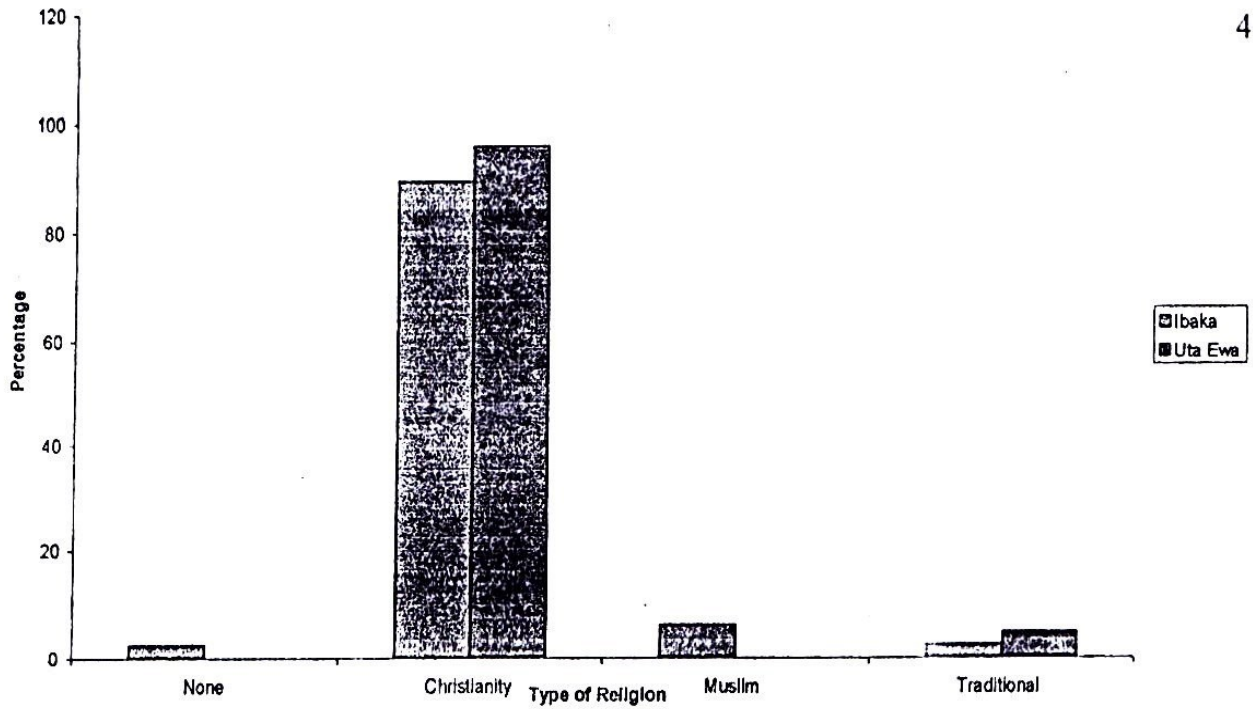


Fig.8: Distribution of Respondents based on Religion

4.5.2. Primary Occupation and Income of the Respondents.

The Table also indicates that majority of the respondents (33.73% in Ibaka and 65.56% in Uta Ewa) have fishing as their primary occupation.

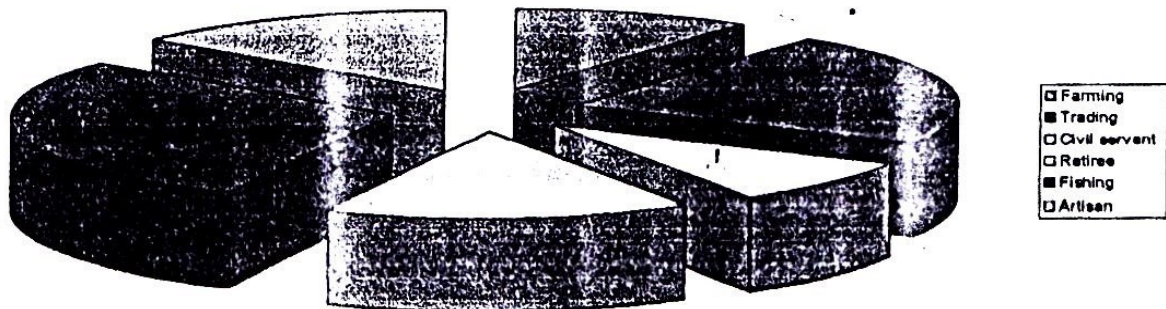


Fig. 9: Distribution of Respondents by Occupation in Ibaka Community

However, most people in other employment in the community also take fishing fish marketing as their secondary occupation. Therefore, whatever project that would enhance agricultural production in the community will be accepted whole heartedly. 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 where between the ₦5,000 and ₦15,000 income bracket.

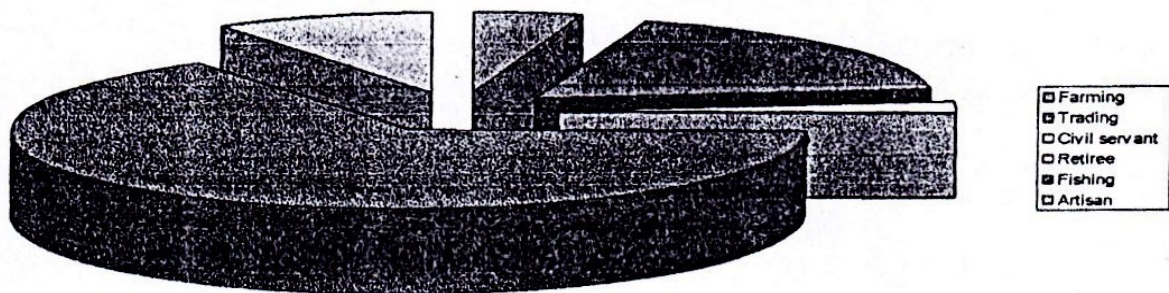


Fig. 10: Distribution of Respondents base on Occupation in Uta Ewa

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.

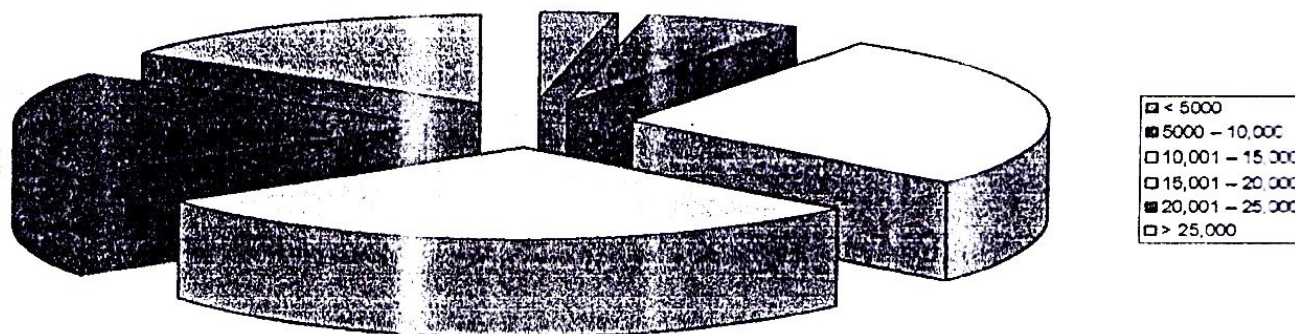


Fig. 11: Distribution of Respondents Based on Income Groups in Ibaka

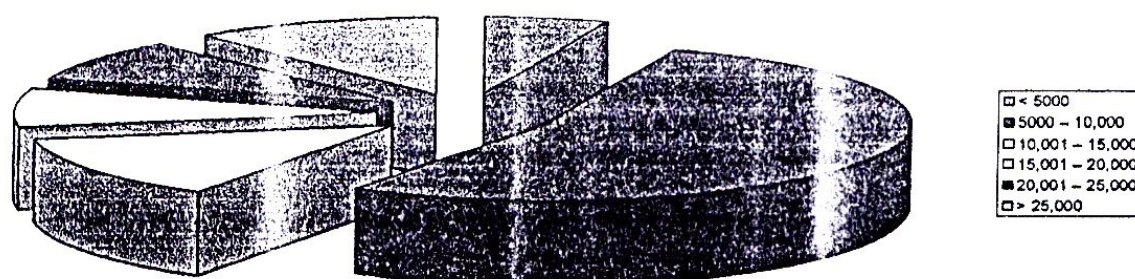


Fig 12: Distribution of Respondents Based on Income Groups in Uta Ewa

4.5.3: Types of Houses and Materials Used.

Majority (50.60% and 80% in Ibaka and Uta Ewa respectively) of the respondents occupied single rooms with their households. (See Figs. 13 and 14). There were a few flats and bungalows in both communities. In terms of building materials used in constructing the houses; majority (32.54% in Ibaka) lived in block walled and zinc roofed houses, while in Uta Ewa about 60% (majority) used mud in making the walls of their buildings and thatch for the roofs.

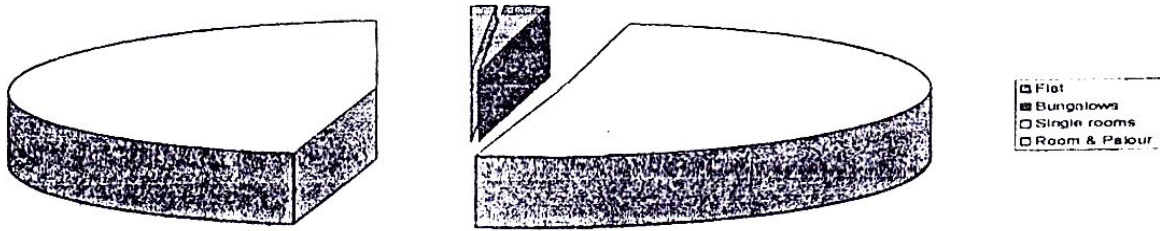


Fig. 13: Distribution of Respondents by Type of Houses In Ibaka

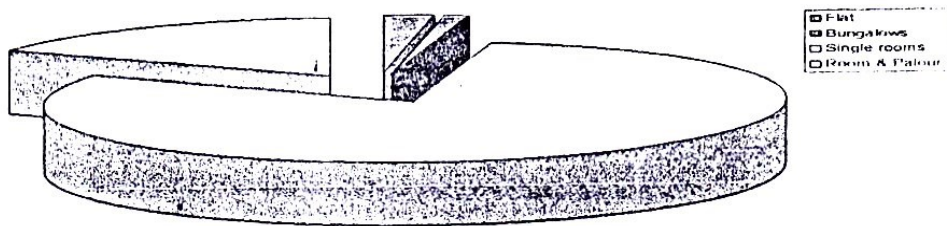


Fig. 14: Distribution of Respondents Based on Type of House In Uta Ewa

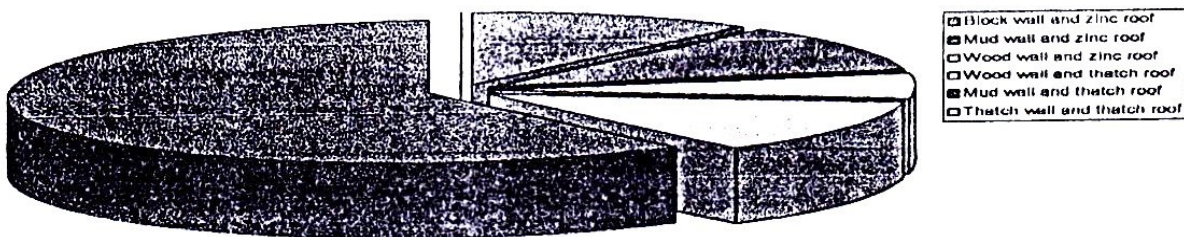


Fig. 15: Distribution of Respondents Based on Building Materials Used In Uta Ewa

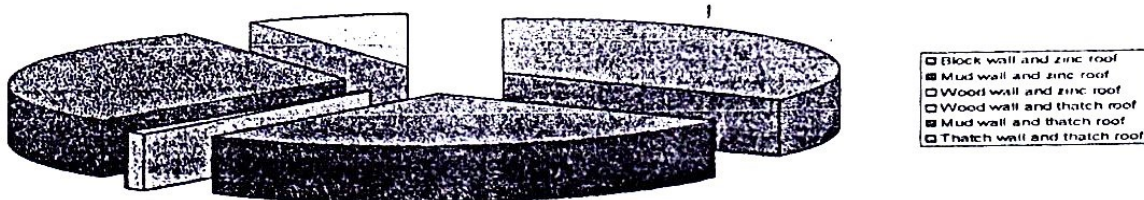


Fig. 16: Distribution of Respondents based on Building materials used in Ibaka.

The type of house an individual occupies and the materials used in building it speaks volume of his/her economic status especially if he/she is an indigene of the area. For non indigenes, especially the foreigners, they often make do with any kind of accommodation. That is why in the communities those occupying the shanties by the beach are mostly non indigenes. These kinds of building being in clusters can expose those living in them to various health hazards including flood and fire. There is therefore the need to provide these persons with durable and affordable housing.

4.5.4: Household Waste and Excreta Disposal, Reasons for Option Used, Preferred Latrine, Ownership and Ability to Afford Preferred Option by Respondents in the study Areas.

The World Summit on sustainable Development (WSSD) 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 ones like Nigeria (Uchegbu, 1998 and Jensen *et al* 2004). These communities are also faced with similar conditions.

Table 4.1 shows that majority (43.54% 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.

Table 4.1: Distribution of Respondents Based on household waste and excreta disposal, reasons for option used, Preferred Latrine, ownership and ability to afford preferred option.

Variables	Frequency		Percentage	
	Ibaka	Uta Ewa	Ibaka	Uta Ewa
House hold waste disposal				
Refuse dump	37	20	30.65	20
Surrounding bushes	48	32	25.81	32
Rivers/streams	81	48	43.54	48
Total	186*	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
iv) Flush toilet	32	1	14.88	14.88
v) Rivers/streams	108	82	85.23	56.55
Total	215*	145*	100	100
Reasons for choice of option				
i) Cheap and affordable	21	0	9.41	0
ii) Easy to maintain	21	1	9.41	0.54
iii) Easy to construct	11	28	4.93	14.81
iv) Only one available	72	88	32.30	46.56
v) Lack of space to build toilet	98	82	43.95	43.39
Total	223*	189*	100	100
Preferred Latrine option				
i) Traditional pit	10	24	06.02	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	-
Total	166	90	100	100
Preferred type of ownership				
Private	28	10	16.87	11.11
Communal	86	24	51.81	26.67
Compound	52	56	31.32	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	11.1
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.

In most (81.71%) of the respondents households, the use of open defecation in bushes and rivers in disposing off human wastes was common (Table 4.1) and ironically, they call it water system. The other group, defecate in the surrounding bushes. A small percentage of the respondents pay and use 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 provide the communities with this facility is a step in the right direction and quite commendable.

The reasons adduced by majority of the respondents for their choice mode of excreta disposal lack of space and the only suitable option available in Ibaka and Uta Ewa communities respectively.

Majority of the respondents in both communities (54.22% and 62.22% in Ibaka and Uta Ewa respectively) prefer to have VIP latrines provided for them with communal ownership option as a result of space and cost. Most of them also were of the opinion that they cannot afford their preferred latrine for now except there is an improvement in their standard of living via income. It is important therefore that options that are appropriate must also be economically feasible within considering the rural economy. The survey also shows that the respondents have a fair idea of what a good latrine should be and therefore could be encouraged to maintain same when they are provided with some (Table 4.1).

Table 4.2: Distribution of Respondents Based on respect to hand washing and compound cleaning and Knowledge of a good latrine in the study areas (Hygiene).

Variable	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
(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 Hard washing with soap				
(i) Always	0	0	0	0
(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				
Daily	82	48	49.40	53.33
Weekly	22	12	13.25	13.33
Twice a week	40	30	24.10	33.34
Monthly	22	-	13.25	-
Total	166	90	100	100
Knowledge of good latrine				
i) Provides 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

Note: *Frequency exceeds total due to multiple responses.

Source: Field Survey data 2009.

4.5.5: Household Hygiene of the Respondents in the Study Areas

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 the children's excreta and about 83.13 percent and 68.89 percent (majority in Ibaka and Uta Ewa respectively) of them do not wash their hands with soap at all (See Table 4.2). 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 of them clean their compounds daily.

4.6: RECOMMENDATIONS

Based on the findings of the study, the following recommendations are made;

- The appropriate and preferred latrine option recommended for these riverine communities is the Ventilated Improved Pit (VIP) latrine.
- The ownership pattern recommended for these communities is communal in general terms, but compound in specific terms especially in Uta Ewa.

- 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 be provided in the schools and health centres in these communities as a matter of necessity.
- There should be constant monitoring and evaluation of the sanitation situation in these riverine communities to engender further improvements.
- Sanitation Awareness Campaigns should be mounted in these communities (by the agencies responsible for such) on the need for proper excreta disposal in particular and wastes disposal generally as well as general hygiene.

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APPENDIX 1

Table A1: Distribution of Respondents based on Sex, Age, Marital status, Educational level, Religion and Household composition.

Variables	Frequency		Percentage	
	Ibaka	Uta Ewa	Ibaka	Uta Ewa
Sex				
Male	131	69	78.91	76.77
Female	35	21	22.09	23.23
Total	166	90	100	100
Age				
< 25	2	2	1.20	1.11
25 - 35	36	20	21.69	22.22
36 - 45	58	26	34.94	28.89
46 - 55	50	27	30.12	0.30
56 - 65	20	11	12.04	12.22
> 65	8	5	4.81	5.55
Total	166	90	100	100
Marital status				
Single	18	7	10.84	7.78
Married	126	78	75.90	86.67
Widowed	12	3	7.23	3.33
Separated/Divorce	10	2	6.01	2.22
Total	166	90	100	100
Educational level				
No school	53	16	31.93	17.77
Primary school	33	44	19.88	48.88
Secondary/TTC	42	25	25.30	90.00
OND/NCE/ 'A' levels	35	5	21.08	5.55
HND/Degree	5	-	3.01	-
Total	166	90	100	100
Religion				
None	4	-	2.41	-
Christianity	148	86	89.15	95.56
Muslim	10	-	6.02	-
Traditional	4	4	2.41	4.44
Total	166	90	100	100
Household composition (yr)				
0 - 11	385	219	35.55	34.77
12 - 17	424	272	39.11	43.17
18 - 30	198	63	18.26	0.10
31 - 45	30	48	2.76	7.62
> 45	47	28	4.33	4.44
Total	1084	630	100	100

Source: Field survey data, 2009.

Table A2: Distribution of Respondents Based on Occupation, Monthly income, House types, building materials used,

Variables	Frequency		Percentage	
	Ibaka	Uta Ewa	Ibaka	Uta Ewa
Occupation				
Farming	20	4	12.05	4.44
Trading	43	17	25.90	18.89
Civil servant	17	2	10.24	2.22
Retiree	3	-	18.07	-
Fishing	56	59	33.73	65.56
Artisan	27	8	16.26	8.89
Total	166	90	100	100
Income (N)				
< 5000	5	5	3.01	5.56
5000 - 10,000	10	48	6.02	53.33
10,001 - 15,000	45	12	27.11	13.33
15,001 - 20,000	48	7	28.92	7.78
20,001 - 25,000	32	8	19.28	8.89
> 25,000	25	10	15.06	11.11
Total	166	90	100	100
House types				
Flat	2	2	1.20	2.22
Bungalows	3	1	1.81	1.11
Single rooms	84	72	50.60	80.0
Room & Palour	77	15	46.39	16.67
Total	166	90	100	100
Building materials used				
Block wall and zinc roof	54	10	32.54	11.11
Mud wall and zinc roof	42	10	25.30	11.11
Wood wall and zinc roof	2	5	1.20	5.56
Wood wall and thatch roof	-	11	-	12.22
Mud wall and thatch roof	46	54	33.73	60.00
Thatch wall and thatch roof	12	-	7.23	-
Total	166	90	100	100

Source: Field Survey data 2009.

Table A3: Distribution of Respondents Based on household waste and excreta disposal, reasons for option used, Preferred Latrine, ownership and ability to afford preferred option.

Variables	Frequency		Percentage	
	Ibaka	Uta Ewa	Ibaka	Uta Ewa
House hold waste disposal				
Refuse dump	37	20	30.65	20
Surrounding bushes	48	32	25.81	32
Rivers/streams	81	48	43.54	48
Total	186*	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
iv) Flush toilet	32	1	14.88	14.88
v) Rivers/streams	108	82	850.23	56.55
Total	215*	145*	100	100
Reasons for choice of option				
i) Cheap and affordable	21	-	9.41	-
ii) Easy to maintain	21	1	9.41	0.54
iii) Easy to construct	11	28	4.93	14.81
iv) Only one available	72	88	32.30	46.56
v) Lack of space to build toilet	98	82	43.95	43.39
Total	223*	189*	100	100
Preferred Latrine option				
i) Traditional pit	10	24	06.02	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	-	3.01	-
Total	166	90	100	100
Preferred type of ownership				
Private	28	10	16.87	11.11
Communal	86	24	51.81	26.67
Compound	52	56	31.32	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	11.1
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 A4: Distribution of Respondents Based on Their Knowledge of A
good Latrine

Knowledge of good latrine				
i) Provides 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.

Table A5: Distribution of Respondents Based on Hygiene with respect to hand washing and compound cleaning in the Study areas.

Variable	Frequency		Percentage	
	Ibaka	Uta Ewa	Ibaka	Uta Ewa
Knowledge of hygiene with respect to hand washing only.				
i) Before meals	64	68	21.77	
ii) After meals	166	90	56.46	
iii) After defecating	42	21	7.48	
iv) After cleaning the children's faces	22	15	-	
Total	294*	194*	100	
Frequency of hand washing after defecation and cleaning of children's excreta.				
(i) Always	18	28	10.84	31.11
(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 Hard washing with soap				
(i) Always	0	0	0	0
(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				
Daily	82	48	49.40	53.33
Weekly	22	12	13.25	13.33
Twice a week	40	30	24.10	33.34
Monthly	22	-	13.25	-
Total	166	90	100	100

Note:*Frequency exceeds total due to multiple responses.

Source: Field Survey data 2009.