

**SOCIO-ECONOMIC SURVEY OF CREEK TOWN WATER
SUPPLY PROJECT IN ODUKPAWI LOCAL GOVERNMENT
AREA, CROSS RIVER STATE**

BY

**PEDOQUASPHERE INTERNATIONAL LIMITED
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FOR

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LIST OF PERSONNEL FOR THE STUDY

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EXECUTIVE SUMMARY

The survey was carried out to ascertain the demographic and socio-economic characteristics of the Creek Town community in Odukpani Local Government Area of Cross River State. This was done in preparation for the construction of a potable water supply project in the area. The community which is made of four clans has a population of about 4229 persons that live in a compact and nucleated settlements. The community comprises the Efiks and the Efuts who speak common Efik language. The native administrative structure of the community has the Clan Heads at the apex and the family heads at the bottom. The Clan Heads of the Efuts are titled *Muri* while those Heads of the Efiks are *Obong* or *Edidem*. There exist a central clan council that sees to the administrative, legislative and judicial functions in the area. The headship of this council is rotational among the heads of the four clans.

The Ekpe society is an important cultural society of the Creek Town people and highly revered. The traditional plays available in the area include, *Ekpe*, *Obon*, *Itankroko*, *Ukwa* and *Ita Mbembe* among others. Important festival celebrated in the communities are the *Christmas* and *Easter festivals*. The community comprises

of relatively older folks and are predominantly literate with mean household size of about 8 persons who are mostly below 12 years of age. Majority of the people are farmers who combine it with other occupations such as fishing, tailoring, trading etc, and earn incomes as low as N5,000 monthly.

Available infrastructure in the area include Pre-primary schools, primary , secondary school, post office, Magistrate Court, a motorable-road and network of untarred roads within the community, electricity, GSM service, Health Centre, Patent medicine shops, a beach market. There is a functional borehole but the water is not suitable for drinking, therefore the community drinks water from streams. The rising landscape from the beach indicates that any borehole drilled in the inland will yield pure and clean water. The people are happy that at long last they will be provided with potable drinking water. They are ready to cooperate with government to see that the facility when put in place is properly managed for sustainable use.

CHAPTER ONE

INTRODUCTION

1.1 Background

The importance of supply of adequate potable water to national development can not be over emphasized. It is for this reason that international agencies and most governments have made the supply, make safe water to urban and rural communities a top priority in its development agenda. Inadequate potable water supply undermines the health, economic and social well being of individuals in a community. Afeisume (1987) had opined that potable water can be likened to good health since it is not location or status bound.

Nigeria and indeed Cross River State has abundant potential sources of water given the abundant surface and underground water reservoirs. It is only appalling that inspite of this, the people are having problems of safe water for drinking and other uses. In most rural communities in Nigeria generally and Cross River State in particular the major sources of water for drinking have remained the streams and dug wells. These sources most often supply untreated water that is not safe for drinking. The dependence on these sources of water for drinking have resulted in the frequent and continuous

reported cases of water borne disease infections of the rural people. In fact, in Creek Town community, there is a borehole that was constructed to supply potable water to the community, but the water source is brackish and therefore not suitable for drinking. This has caused members of the community to resort to drinking water fetched from the streams. The likely outcome of this situation is predictable. It is in realization of this problem that government plans to provide the community with a potable water supply facility. This idea of government is commendable.

1.2 Justification of the Study

- The proposed water supply project is in line with the Federal / State government's desire under its water supply scheme to provide potable water to rural communities. It also falls under United Nation's (2000) Millennium Development Goal (MDG) to provide adequate and affordable safe drinking water to people in the rural areas.
- As the present borehole in the community yields salty water, the drilling of another borehole towards hinterland is necessary for harvesting of pure and clean water for distribution to the teeming population of the Creek Town.

- The water supply project shall alleviate the problem of scarce drinking water and shall enhance public health, sanitation and hygiene in the community.

1.3 Objectives

The objectives of the study were as follows:

- (i) To determine the demographic, socio-economic, cultural and agricultural characteristics of the people residing in Creek Town community.
- (ii) To identify the water supply problems of the community and proffer solutions
- (iii) To obtain other relevant information that will be useful for future development planning purposes.

CHAPTER TWO

WATER SUPPLY IN BRACKISH WATER ZONE

Water supply refers to the process of provision of safe-drinking water to rural settlements or urban centres by governments/government's agency or organizations. Water sources in Creek Town located beside the river may include the following: water from rain, flowing river/creek, natural spring, shallow well and boreholes (Table 2.1). Water collected from the present borehole in Creek Town is salty and coloured. This indicates the presence of alluvial aquifers in the geologic formation in the brackish water zone. The area also experiences tidal influence such as high tide with attendant rise in water table and inundation of the river beds/banks. Fig. 2.1 shows hydrologic cycle as related to water supply.

2.2 Common Substances Present in Water

There are many substances in water. Among them are materials in suspension, colloidal materials, soluble organic materials, mineral salts, gases, and microorganisms.

Table 2.1:
Typology of water sources

Source	Treatment	Extraction	Distribution	Remarks
Rain	Unnecessary if catchment and receptacle clean	Channeling off suitable roofs and /or hard ground	Collection directly at household or institutional level	Useful as supplementary source of safe water in certain seasons
Groundwater, Natural Spring	Unnecessary if properly protected	Simple gravity flow: preferably piped from a protective spring box	Individual collection directly, via storage tanks or gravity-fed distribution system	Source must be protected; yield may vary seasonally
Deep well (low water table)	Unnecessary if properly located, constructed and maintained	Handpump possible if water-table less than 60m deep and output required is low, otherwise motor pumps necessary	Individually pumped by hand, or motor pumped to storage tanks, possibly linked to distribution systems	Yield unlikely to vary much with seasons unless prolonged drought. Special construction equipment and expertise required High yields often possible
Shallow well (high water-table)	Unnecessary if properly located, constructed and maintained	Hand pump or rope and bucket	Pumped or drawn directly from wells by individuals	Yield may vary seasonally; can be dug/drilled by local skilled labour. Care needed to avoid contamination
Surface water flowing (stream, river)	Always necessary: sedimentation, filtration and/ or chlorination	Preferably pumped to storage and treatment tanks	Individual collection, preferably from storage/treatment tanks	Yield may vary seasonally; access to source should be controlled
Standing (lake, pond)	Always necessary, as above	As above	As above	As above

Adapted from United Nations High Commissioner for Refugees (1992)

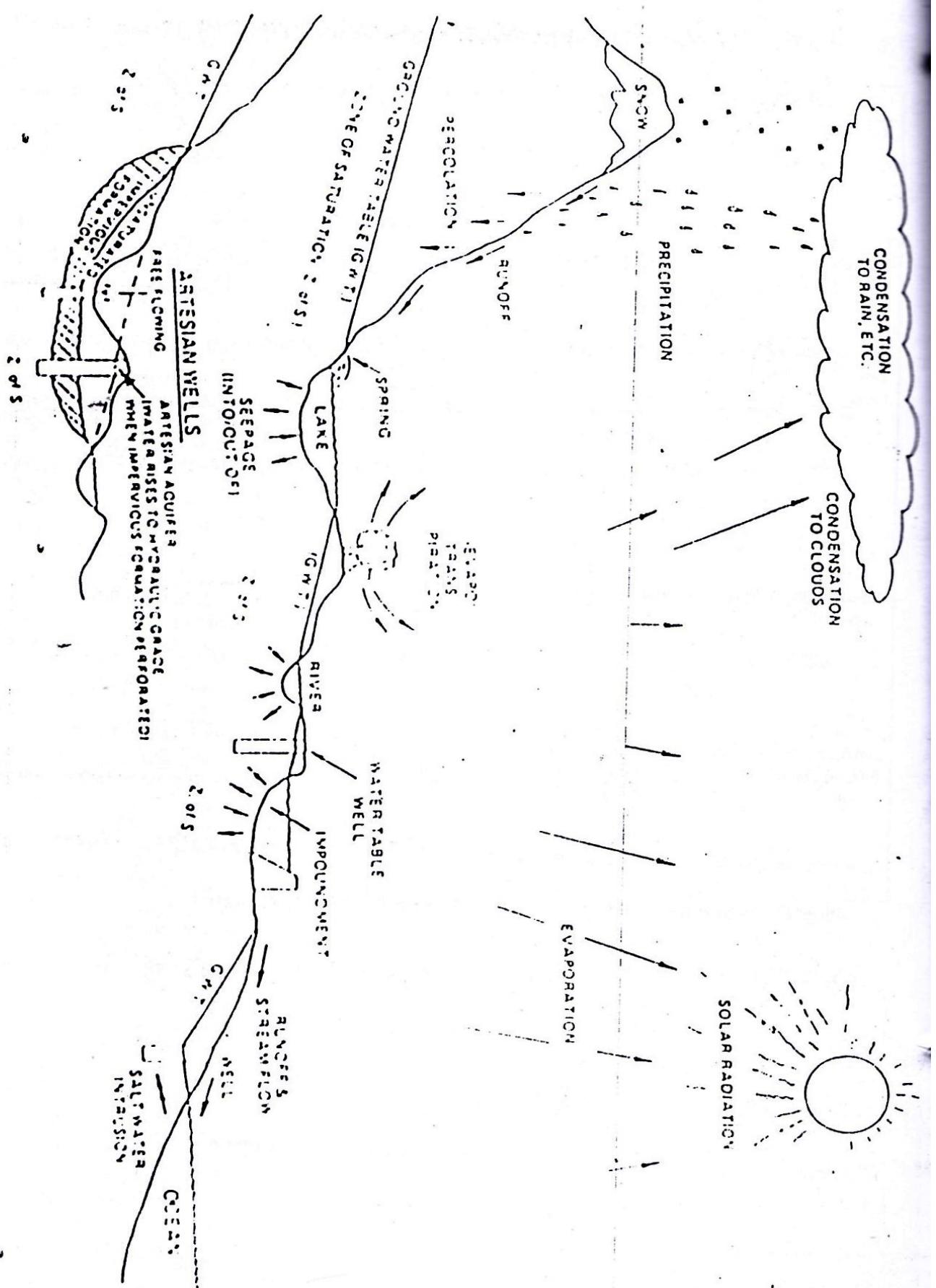


Fig 2.1 Hydrologic cycle as related to water supply

Table 2.2 indicates substances in water and the nature of the elements. For water to be potable, most of the substances that impart taste, colour or being toxic have to be removed through water treatment process (NWRI, 2001).

Table 2.2: Common substances Present in water

substance	Nature of elements
Material in suspension	Sands, sludge, rock debris, organic material; plants
Colloidal materials	Colloidal organics material oils, petrols, tars clays
Soluble organic materials	Vegetable wastes, nitrogenous materials, products of organic synthesis
Mineral salts	Calcium, magnesium, potassium sodium, bicarbonates, sulphates, or nitrates, chlorides,
Gas	Oxygen, nitrogen, carbon gas, ammonium
Living organism: plants, animals, bacteria and virus	Plankton, algaes, fungi, worms, larvae, bacteria, virus

2.2 Geology/Hydrology of Brackish Water Zone

The geology of the brackish water zone may play an important role in water quality. While the low-lying area has been developed on Delta formation consisting of fluvio-marine deposits the adjacent upland is characterized by "Coastal Plain Sands" consisting predominantly of fluvial and lacustrine deposits. According to the geological history, the oceans have submerged many parts of the continents; that the uplifts of the submerged geological formations and receding seas have left marine evaporites and sedimentary rocks behind, high in sea salts, including sodium, chlorine, magnesium, sulphate etc. These geological formations may exist in varying thickness, depths and extents on the continents. Through hydrological processes solutes can move into the ground water with rising ground water levels during the high tide and raining season (Tanji, 2003). The movement of solutes into the ground water and the intrusion of salt water into the borehole can therefore influence the quality of the water in the borehole.

2.3 Water Sources Management

This is an integral aspect of the preventive management of drinking water quality. Prevention of microbial and chemical contamination of source water is the first barrier against drinking-water contamination of public health concern. Water source management and potentially polluting human activity in the catchments can influence water quality in aquifers. This will impact on treatment steps required to ensure safe drinking-water (WHO, 2006).

2.4 Water Safety Plan

Following the general complaint by the inhabitants of Creek Town that the water from the present borehole is salty and coloured probably due to nearby river (alluvial aquifers), water obtained from the borehole in the area should be treated under the overall treatment system as surface water before distribution. Water safety plans should be considered for the proposed water supply project at Creek Town. Water safety plans are powerful tools for the drinking water supplier to manage the supply safety; they also assist surveillance by public health authorities. The primary objectives of a water safety plan in ensuring good drinking water supply practice are the minimization of contamination of source waters, the reduction or

removal of contamination through treatment processes and the prevention of contamination during storage distribution and handling of drinking water.

2.5 Maintenance of Water Quality

Drinking water quality has a micro-biological and a physico-chemical dimension. There are many parameters of water quality. The greatest water-borne risk to health is the transmission of faecal pathogens, due to inadequate protection of water sources, sanitation and hygiene. Water-borne infectious diseases include *Diarrhea*, *Typhoid*, *Cholera*, *Dysentery* and *Infectious Hepatitis*. The provision of safe water supply, accompanied by adequate sanitation services and hygiene education, represents an effective health intervention that can reduce morbidity and mortality related to diarrhoeal disease in rural area such as Creek Town. (Havey and Reed, 2004)

CHAPTER THREE

SURVEY METHODOLOGY

3.1 Consultations

The consultation for this survey was carried out by the Consultants. This was facilitated by the team Leader Dr. Ackley Akpan-Idiok. In doing this, the essence of the survey was explained to the Clan Heads and opinion leaders in the communities to enhance cooperation from them. The reception by them was warm and cordial as they responded positively even at short notice (Plate 3.1).

3.2 Brief Description of Study Area

Creek Town or Obioko as was initially and indigenously known is about 10 nautical miles north west of Calabar. It lies on latitude $4^{\circ}57'N$ and Longitude $8^{\circ}20'E$. It is an important community in Odukpani Local Government Area of Cross River State (Fig. 3.1). It is the ancestral homeland of the Efuts and Efiks. The inhabitants are predominantly farmers and cultivate crops such as cassava, yam, vegetables, oil palm etc. they are also involved in fishing and keeping some livestock. The population of the area as at 1991 was 3665 persons with a projected figure of 4229 persons in 1996 (NPC 1991, 1996).

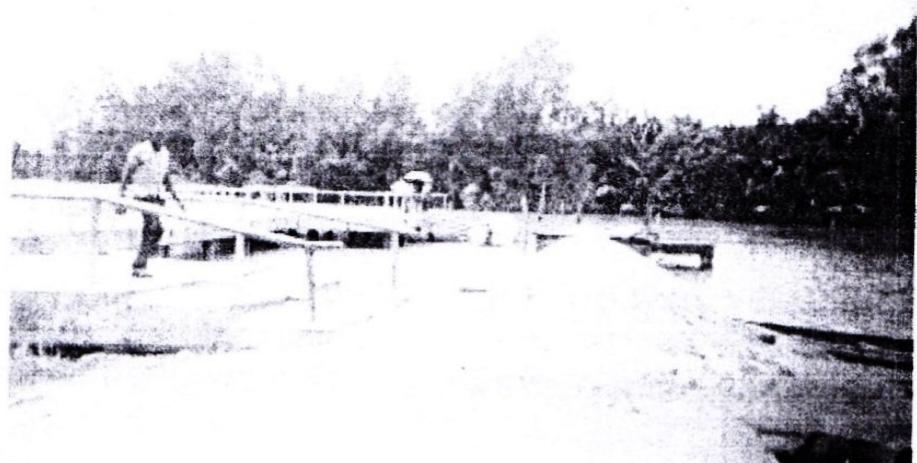
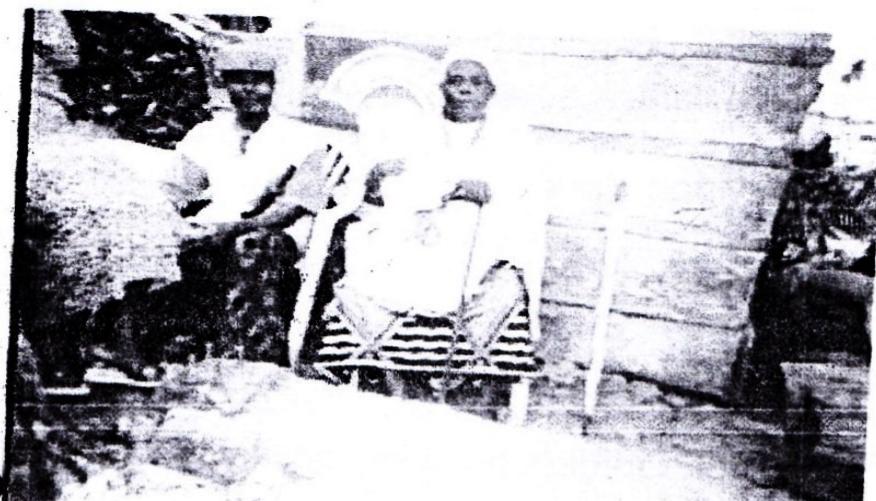
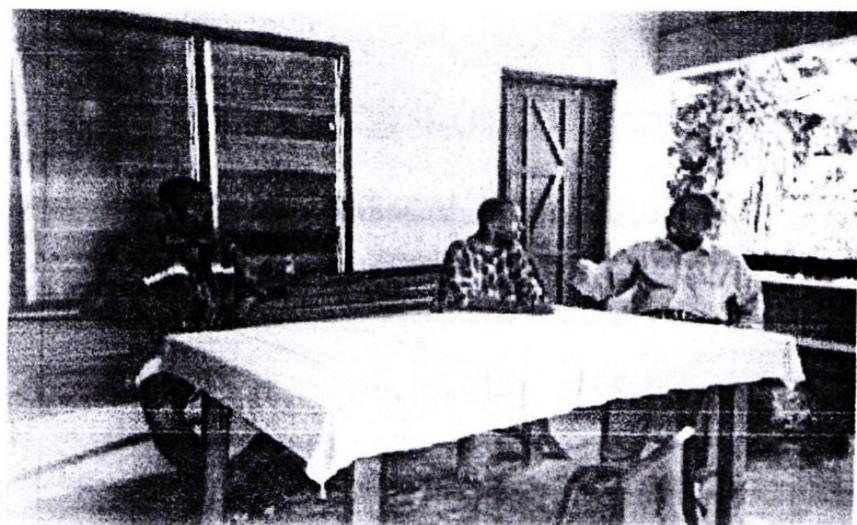
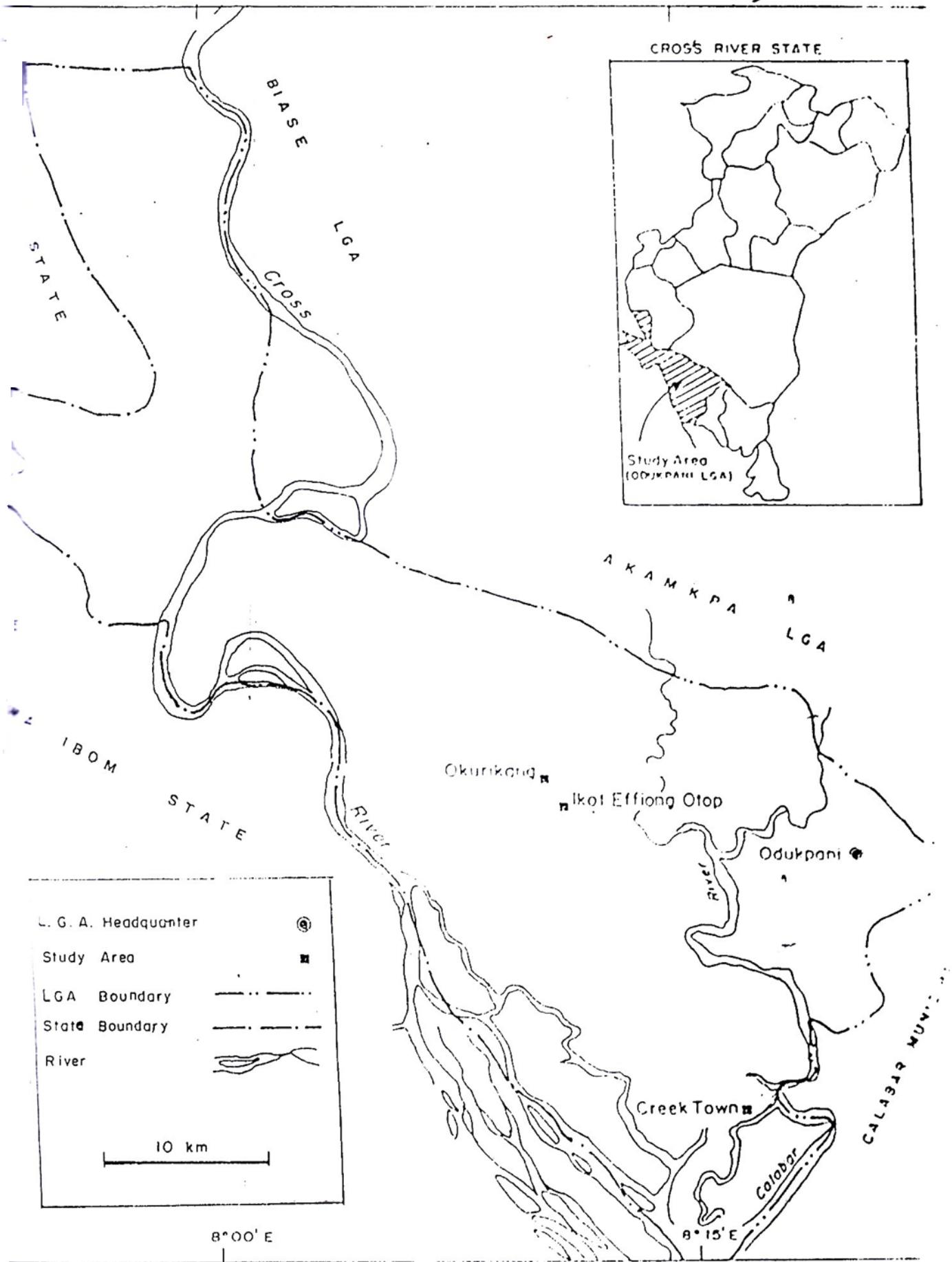


Plate 3. 1 (a) Consultation with the clan head of Efut Abua Muri Ekpenyong Nsa Amambo
(b) Etubom Cobham Edet Antigha during the interactive session
(c) Scene of the Creek Town Beach in the brackish water zone.



3.1 Map of Odukpani Local Government Area showing the study area

The area comprises four clans that include Efut Abua, Adaha Uko, Mbarakom and Otung Eyo Ema. The settlement pattern is best described as compact and nucleated.

3.3 Sampling Procedure

A multi stage sampling procedure was used in selecting households to be enumerated. In the first stage a list of clans and families were made with the help of the heads of the communities. In the second stage a random sample of 100 households were selected in proportion to the size of each clan to avoid bias.

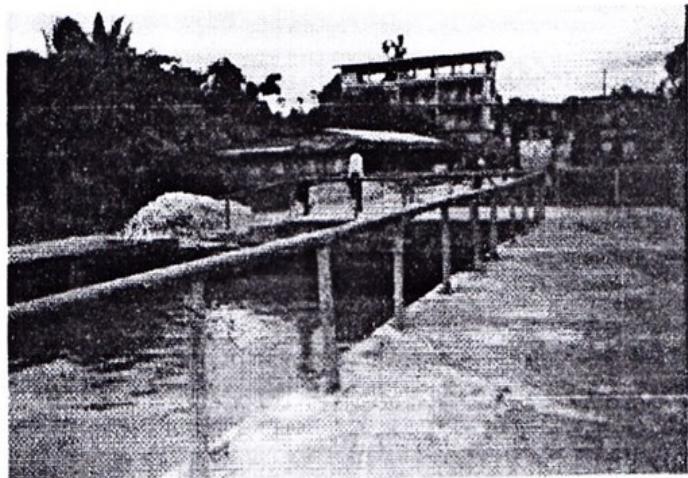
3.4 Methods of Data Collection

Primary data used in the study were obtained through the use of Questionnaire, key informants, Participatory Rural Appraisal (PRA) and Focus Group Discussion (FGD) session. Structured questionnaires were designed and administered to 100 household heads with the assistance of the community heads and trained field assistants who were natives of the area. However only 87 questionnaires were returned out of which only 85 which were correctly filled were collected and used in the analysis. The questionnaire helped in the gathering of information on the socio-

economic characteristics of the respondents. The key informants and Focus Group Discussion sessions were held, with a cross section of the community. In attendance in this session, information about Creek Town were obtained including the water supply situation, expectations and likely fears concerning the proposed water project. Secondary sources of information include books, journals and the internet.

3.5 Analytical Technique

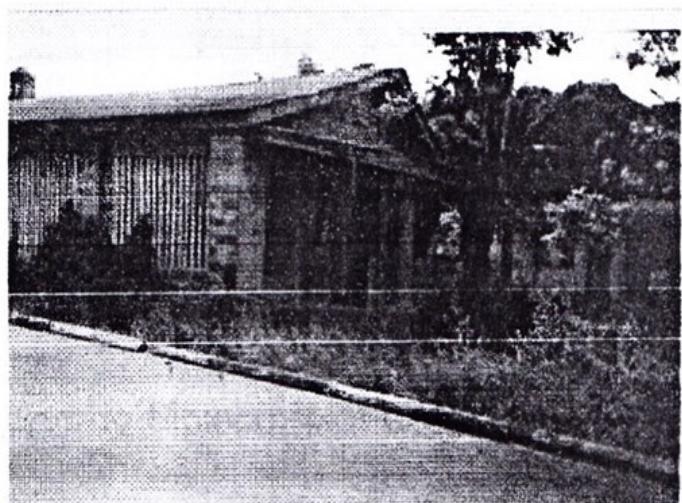
The analytical tools used were principally descriptive statistics which include percentage frequency table, means, pie and bar charts. Plate 3.2 shows some features in Creek Town.



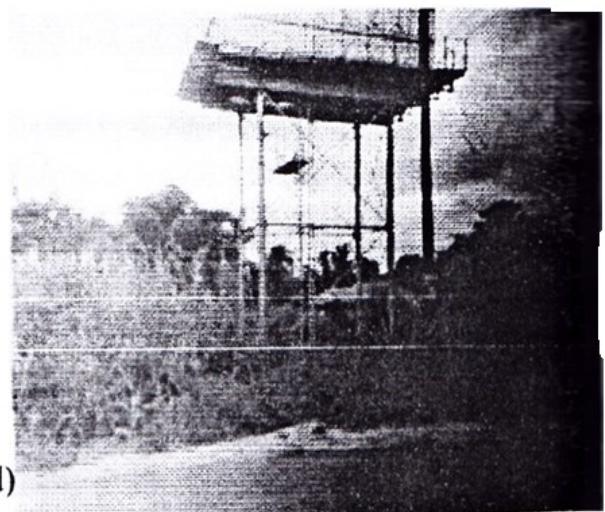
(a)



(b)



(c)



(d)

Plate 3.2 Selected features at Creek Town (a) Creek Town at a glance from the beach
(b) Economic activities (cyclists/petty trading) at the beach (c) Ekpe masquerade chamber (d) Present borehole that yields salty water

CHAPTER FOUR

RESULTS AND RECOMMENDATIONS

4.1 Brief History and Settlement of Creek Town

Creek Town also known as Obioko is the ancestral home land of the Efuts and Efiks. The Efuts who had settled here earlier than the Efiks trace their origin to Cameroon in Central Africa. Oral history records that they migrated from Cameroon following a fight with the Batanga people and settled in Isu Ekong and Esighi. Their leader was Ebuka who left his first son (Aya Ebuka) in Esighi and came and settled in Obioko (Creek Town). Here he had his second son who later moved and settled in the present day Calabar South. His other offsprings migrated and settled in Bakassi and Akpabuyo Local Government Areas of Cross River State..

The Efiks migrated from Urruan (in present day Akwa Ibom State) to Ikpa Eme (Akani obio Efa) along the bank of the Cross river. Some went to Mbiabo, Ikot Offiong and Ikoneto and finally settled in Creek Town in about 1400 AD (Creek Town Foundation, 2007). This early migration according to history was motivated by lineage tension. Some of the migrants later crossed the river and settled in Obutong, Atakpa, Cobham Town and Henshaw Town in order to get a better

share of the early European trade. The man who led the Efiks into Creek Town was Edidem Eyo Ema Atai. The Efuts and the Efiks have lived so long together in Creek town and intermarried and they all speak the Efik language.

4.2 Traditional Institutions, Local Government and Social Organization

As it is common in almost all the communities in the country, traditional rulership begins with the family head. The hierarchical order in the traditional rulership of the Creek Town community is not different from the family head to the Village heads and then the clan Head. There exist a central clan council that performs the executive, legislative and judicial function in the community. Members are heads of the different Efut and Efik communities that make up Creek Town. The communities include Adaha Uko, Efut Abua, Mbarakom and Otung Eyo ema. The headship of this Central council is rotational among these four blocks. The tenure of the chairmanship of this council is three years, although it can be more than that when the person performs creditably well. The council is the highest decision making body in the community and arbitrates in all civil matters involving individuals and families in the communities. Criminal cases

are handed over to the police. It also sees to the implementation of government policies and programmes in the community.

The heads of the Efut communities in Creek Town are addressed as *Muri*, while those of the Efiks are called *Obong* or *Edidem*. The heads are selected and most often are persons from the royal family with impeccable character. In Creek Town community, there exist youths and women organizations. The youth associations are very useful in the area of security (vigilante) and maintenance of the rural roads. The women groups are often involved in sanitation and also meeting the social and financial needs of its members. There are age grades in the communities that are not organized into functional associations. There exists a multipurpose cooperative society which is not functional as a result of its not being able to attract credit from external sources to fund its projects and help members. Osusu groups exist in the community and render credit services to its members and non members who can meet its requirement for loans.

4.3 Religion and Culture of the People

The forebears of the Creek Town people had early contact with Christianity through the early Christian missionaries. Therefore they

are predominantly Christians belonging to various denominations that include the Presbyterian, Apostolic, Catholic, Banner of Grace, Deeper Life Bible Church, Redeemed Christian Church of God among others. It was King Eyo Nsa of Creek Town who championed the production of Efik Hymn book and Bible. They are very few traditional worshipers. The major festivals celebrated in the communities are Christian festivals of *Christmas* and *Easter*. The cultural plays that are found in the community include, *Ita mbembe*, *Ukwa*, *Itankroko*, *Akata*, *Obon* and *Ekpe* masquerades among others. Some of these plays are featured during festive periods like Christmas, Easter and during important occasions. The *Ekpe* society is highly revered in the community and initiates are often title holders. They have a hall called "*Efe ekpe*" which is only accessible to members. The masquerade is a prime cultural identity of a typical Creek Town person. It is also reported that the masquerade led the early Christian missionaries from the beach to the hinterland.

Land tenure arrangement allows for families to custody land. Individuals who need land must pay some token and provide goat and drinks in order to be apportioned parcels of land most especially non indigenes. However, when structures erected on such parcels of

land collapse, the family will reclaim the land until fresh negotiations are made. In effect land is not sold in perpetuity in Creek Town.

Certain behaviours are not acceptable in the community; these include stealing, violence of any kind, adultery etc. The penalty for stealing is public disgrace. There are also no food taboos, therefore individuals can eat whatsoever they desire to eat. The people are known for popular food delicacies such as *Ukwuho afang*, *Edikang Ikong*, *Afia efere ebot* with pounded yam, and *Ekpang nkukwo ikon* among others.

4.4 Rural Infrastructural Facilities

4.4.1 Road and Transport

Creek Town has an all season motorable road that runs from Akpap Okoyong and terminates at the beach. However, within the communities, there are network of roads that are almost like foot path. Some of the roads which were tarred so many years back are in deplorable state. The major means of road transport in the community is the use of commercial motorcyclist. However, those that own cars often use their cars to wherever their destination are especially if the roads are relatively motorable. A good number of

persons make use of the speed boats and canoes that ply the Creek Town-Calabar water way. It takes about 15 minutes to ride in a speed boat from Creek Town to Calabar at a cost of ₦200.00 only. For those who use engine boats that are bigger to convey farm produce and other commodities to and from Calabar, it cost about ₦100.00 and takes about on hour, riding on the water. The provision of good and all season network of roads in the communities is also a felt need of the community.

4.4.2 Electricity and Telecommunication

The community has also benefited from government's rural electrification scheme. The presence of the Power Holding Company of Nigeria (PHCN) is felt by the ubiquitous electric poles and cables ramifying the communities. However, the problem still remains that power supply is erratic and therefore has not helped in the economic and social transformation of place. Only those who can afford electric power generating sets can boast of enjoying about six hours of electric light daily and at a very exorbitant cost. If the present situation remains, there is the likelihood that the proposed water facility will be powered by a generating set which should either come as part of the

facility or procured and maintained by the community as their contribution.

There exist in the community a Post Office that makes it possible for residents to send and received mails. There is also the presence of the Mobile telephone service of MTN in the area. Those who have handsets make and receive calls, while those who can not afford one, make and receive calls by patronizing the call centres available at designated spots in the community. The services of town criers are also used in passing relevant information to members of the community. Radio sets, TVs are also used in getting information about events in the world. In fact, there are some relevant spots with cable TV that enhances the viewing of European football league and championship matches by young folks in the community.

4.4.3 Health and Educational Facilities

The community boast of a Health Centre that is in dire need of rehabilitation and provision of functional equipment and qualified personnel's. There are also patent medicine shops whose operators are also addressed as "doctors" by members of the community. The service of Traditional Birth Attendants (TBAs) are available. Given the

proximity of Calabar, the state Capital, medical cases are often taken to the St. Margaret, General, and the University of Calabar Teaching Hospitals. There are few Nursery and primary schools in the area. Their number and facilities available are grossly inadequate to cater for the early childhood educational needs of the community. Infact, in some of the schools, the structures are in various stages of disrepair. There is also a government owned secondary School whose students enrolment seems to be increasing without a corresponding increase in teaching staff and facilities. This situation calls for immediate intervention by the authorities concern to forestall further deterioration of educational infrastructure in the area.

4.4.4 Economic Infrastructure

There are various small scale businesses thriving in the communities, ranging from tailoring, capentry, hair dressing and barbing salons to grocery shops and call centres. The beach on certain days is a busy market place for buyers from Calabar the State capital. Various agricultural commodities such as fruits, fishes, coconut, cassava foo foo etc, are traded there and evacuated to the Calabar via the speed and engine boats. There are also ephemeral markets within the

communities where people buy and sell farm produce and other commodities.

4.4.5 Law and Security Institutions

There is presence of the Nigerian Police as the only law enforcement agent of government in the area. There is a Magistrate court that is saddled with the job of administering justice in the area. Apart from the Police, the youths with authority from the Central Council operate a vigilante group to secure lives and properties of inhabitants of the area against external aggression. As at the time of this survey, there was a conflict between some neighbouring villages that resulted in the beefing up of security in all the surrounding communities including Creek Town using the vigilante groups.

4.4.6 Water Supply and Sanitation

The communities are facing a problem of inadequate supply of potable water. The only functional borehole provided by government which is 60.8m deep supplies brackish water that is salty and unfit for drinking. The other two boreholes in the community were provided by individuals for their domestic use and commercial purposes; one is about 76m deep and supplies relatively clean water, while the other is

about 73m deep and is yet to be fully operational. Generally, the people still depend on stream water for drinking. The cleanliness of the stream water depends on the tide. During high tide, the water becomes dirty and relatively clean during low tide. The distance from this village to the stream is far and therefore much time is expended searching for clean water and this will negatively affect the sanitation and the health conditions of households as well as their productivity. With increasing population, the demand for potable water will increase. For Creek Town, it is expected that the current demand for water given a projected population of 4229 (NPC; 1996) will be 0.115 cubic litres per person per day. The proposed water project is therefore timely. With the borehole, 800m distance from the river side (beach) yielding relatively clean water, there is tendency to harvest pure and clean water from any borehole that will be drilled farther inland as the landscape rises towards the hinterland.

In terms of waste management, members of the community dump wastes in pits and gully sites. Some dump household wastes at the bases of plantain and banana plants within the compounds. Human wastes are disposed off via the use of latrines that are built at the back side of their residences. However, a few persons dump wastes in the river and nearby bushes.

4.4.7 Agricultural Situation

The people are predominantly farmers growing crops such as cassava, yam, oil palm, plantain, cocoyam and vegetables among others in mixed cropping farming system. They are engaged in fishing activities given the riverine nature of the community. They own farm sizes ranging from 0.5ha to about 7 hectares. Vegetables and fruit trees are planted in compound farms, while cassava and yam etc are cultivated in distant farms.

4.5 Socio-demographic Characteristics of Respondents

4.5.1 Sex, Age and Educational levels Distribution of Respondents

The data presented in Table 4.1 shows that majority (82.35%) of household heads were males. Female headed households were either widows, divorced, or those who have separated from their spouses. Majority (52.94%) of the respondents also, were above 50 years of age, while 7.06% (minority) were between 25 and 35years of age. This implies that there were older folks than younger ones in the community. This can be attributed to the rural-urban migration of relatively younger persons in search of the much talked about greener pastures. The respondents also attained one level of education or the other. However, only about 9.41% had no formal education. The community can therefore be described as a literate community and therefore have the advantage of being able to appreciate government's development intentions and receive same with open arms, including the proposed water project.

Table 4.1
Sex and Age Distribution of Respondents

Characteristics	Frequency	Percentage
Sex		
Male	70	82.35
Female	15	17.65
Total	85	100
Age		
<25	-	-
25-30	3	3.53
31-35	3	3.53
36-40	5	5.88
41-45	8	9.41
46-50	21	24.71
>50	45	52.94
Total	85	100
Educational Level		
No school	8	9.41
Primary school	45	52.94
Junior secondary	-	-
Secondary	25	29.41
OND/NCE	5	5.88
Degree	3	3.53
Higher Degree	-	-
Total	85	100

Source: Field Survey, 2007

4.5.2 Distribution of Respondents based on their Marital Status, Type of Family, Household size and Composition

The results shows that majority (47.06% of the respondents were married (Fig. 4.1). A few were separated / divorced or single. The survey indicated that most of the households were monogamous with majority (88.23%) having between 4 and 9 persons in their household (Fig. 4.2).

The mean household size in the area from the result is about 8 persons. This result is an indication that there is still the urge to keep large family sizes in most rural communities inspite of the prevailing economic hardship experienced by majority of rural households in Nigeria particularly and Africa in general. However, Idiong (2006) opined that large household size is to engender farm family labour availability. The household composition shows that majority of household members were between below 12 years and 18 years of age (Table 4.2.) Each household also had an average of 7 out of 8 persons who were within this age group. This implies that the population is made up of majority of persons who were dependants.

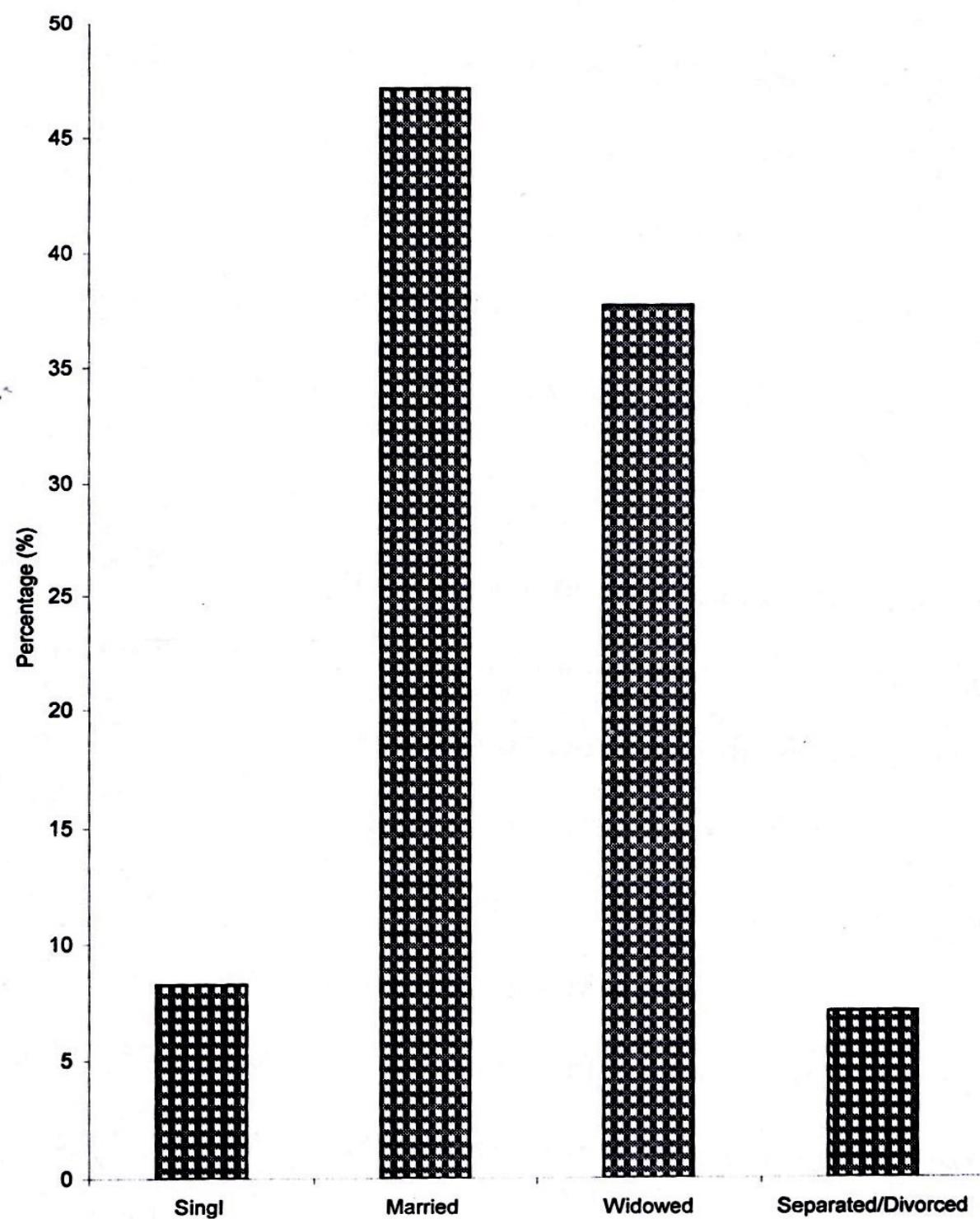


Fig. 4.1: Distribution of Respondents According to Marital Status in Creek Town

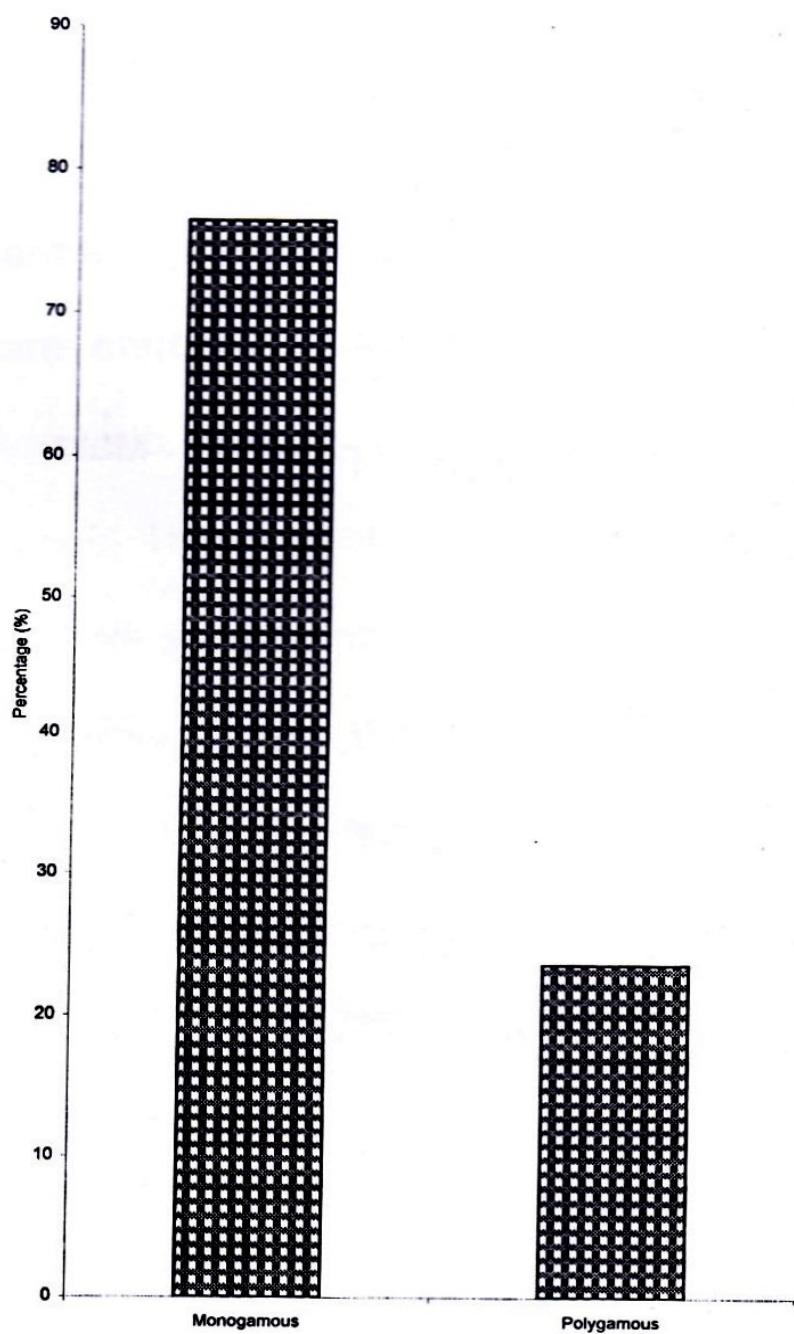


Fig. 4.2: Distribution of Respondents According to Type of Family in Creek Town

Table 4.2
Household size and Composition of Respondents

Characteristics	Frequency		Percentage		
Household Size	Male	Female	Male	Female	Both
1-3	3				3.53
4-6	48				56.47
7-9	27				31.76
>9	7				8.24
Total	85				100.00
Household Composition	Male	Female	Male	Female	Both
Age range					
<12	177	203	49.86	62.46	55.88
13-18	93	95	26.20	29.23	27.34
>18	85	27	23.94	8.31	16.28
Total	355	325	100.00	100.00	100.00

Source: Field Survey, 2007

This condition would have negative effect on the household heads income.

4.5.3 Distribution of Respondents based on major and Secondary Occupation

The resultS in Table 4.3 indicate that majority of the respondents were principally farmers growing various crops and keeping animals. A few (2.35%) are engaged in fishing, while others are traders, retirees, contractors, etc. Majority (57.36%) also take farming as a secondary occupation. This implies that, inspite of any body's major occupation, he or she is still engaged in one kind of agricultural production or the other given the agrarian nature of the rural economy. Infact, there are no persons who do not have a secondary occupation in the area. This is done in the belief that one occupation may not provide sustainable income and therefore, combinations of occupations become an option.

Table 4.3
Major and Secondary Occupation of Respondents

Characteristics	Frequency	Percentage
Major occupation		
Farming	48	56.47
Trading	12	14.12
Fishing	2	2.35
Civil Servant	4	4.70
Retiree	6	7.06
Applicant	-	-
Contracting	5	5.88
Technician/Artisan	8	9.42
Total	85	100.00
Secondary Occupation		
Farming	78	57.36
Trading	19	13.97
Fishing	8	5.88
Civil Servant	-	-
Retiree	15	11.03
Contracting	10	7.35
Technician/Artisan	6	4.41
Total	136	100.00

Note: Number exceeds 85 as a result of multiple responses

Source: Field Survey, 2007

4.5.4 Distribution of Respondents based on Monthly Income from Major and Primary Sources

In Table 4.4 the results show that the respondents were bottom heavy (62.59 and 77.5%) in terms of monthly income from major and secondary occupations respectively. Only about 5% and 2.5% of the respondents earned above N15,000 monthly from major and secondary occupations respectively. The income of an individual is a major determinant of his standard of living. The low level of income of the respondents gives credence to their options of taking more than one occupation in order to augment incomes from their major occupation. With this low income and the high dependency ratio of the households, the provision of the basic necessities of life to household members becomes an uphill task for the household head. With increasing cost of medical attention, prevention of diseases (especially those that are water borne) through provision and use of potable drinking water through this project becomes a plausible way of reducing expenditure on family health needs. The Table also indicate that majority (41.80%) of the respondents own the houses they live in and even rent out. About 33.86 percent own radio sets,

Table 4.4
Distribution of Monthly Incomes of Respondents for Major and Secondary Occupations and Types of Assets Acquired

Characteristics	Frequency	Percentage
Income for monthly occupation		
< N 5,000	50	62.5
N5,000 – 10,000	20	25.0
N 10,000-15,000	6	7.5
> 15,000	4	5.0
Total	80	100.00
Income for Secondary Occupation		
< N5,000	62	77.5
N5,000 – 10,000	10	12.5
N 10,000-15,000	6	7.5
> 15,000	2	2.5
Total	80	100.00
Assets Acquired		
Car	6	3.17
Motor cycle	16	8.48
Bicycle	-	-
House	78	41.80
Radio sets	68	33.86
Video sets/TV	18	9.52
Generator	6	3.17
Total	189*	100.00

* Number exceeds 80 as a result of multiple responses

Source: Field Survey, 2007

while only a few 3.17% own cars or generators as the case may be. There is a positive relationship between asset acquisition and standard of living of persons. Those who acquire expensive assets are regarded as well-to-do in the community. It is interesting to note that none of the sampled household heads had acquired a bicycle. The respondents were of the opinion that the indigenes of the area are not acquainted with the use of this asset as a means of transport. However, it is commonly used by some non indigenes especially those of Akwa Ibom State origin

4.5.5 Distribution of Respondents based on House Type, Materials Used and Human Waste Disposal System.

House type in the community varied from flats to line of rooms. Majority (47.6%) of the respondents occupied houses that are described as rooming houses, with court yards (Table 4.5). There were also a few (5.88%) respondents who occupied storey buildings. The type of house a person occupies in the communities is an indication of his / her status in the community. A good majority (70.59%) of the respondents lived in houses built with cement and roofed with corrugated iron sheets. A small percent (4.71%) still occupied thatched roof houses. On a whole, the house types in Creek Town

Table 4.5
Distribution of Respondents according to Types of Houses, Materials used

Characteristics	Frequency	Percentage
House type		
Flats	8	9.41
Bungalours	25	29.41
Semi-detached	2	2.36
Rooming houses with courtyard	40	47.06
Line of rooms	5	5.88
Storey building	5	5.88
Total	85	100.00
Material Used		
Wooden walls with iron sheet roof	-	-
Mud walls with iron sheet roof	10	11.76
Mud walls with thatch roof	4	4.71
Cement walls with iron sheet roof	60	70.59
Mud walls/cement plaster with iron sheet roof	11	12.94
Total	85	100.00

Source: Field Survey, 2007

speaks volume of those who have come to appreciate the use of durable materials in building. Some of the houses in the community were built during the colonial era.

The investigation indicated that most (83.53%) of the respondents disposed off human waste using pit toilets that are erected at the backyards of their houses (Fig.4.3). Only about 4.71 percent had water closets in their houses, while about 5.8% defecate in nearby bushes and river respectively.

4.5.6 Distribution of Respondents according to Sources of Water for Drinking and Reasons for use of Sources

In Creek Town, all (100%) of the respondents opined that the stream was the major and only source of drinking water (Table 4.6). They reported that though there is a bore hole, its water is not safe for drinking due to its salty taste. Water from the borehole is used for washing and other purposes. Majority of the respondents opined that their choice of the stream was that it was cleaner, while others said their choice was predicated on the fact that they had no better alternative.

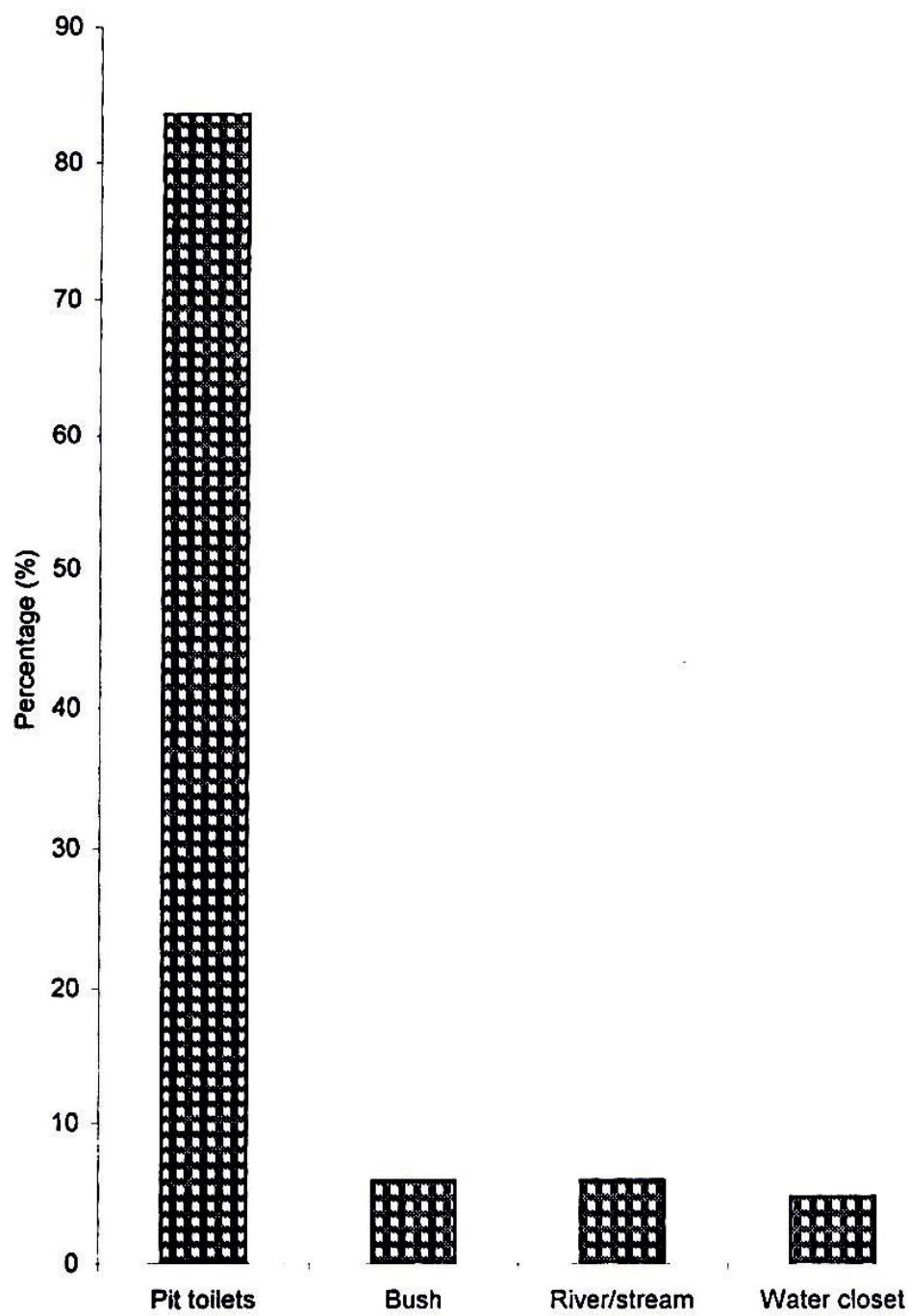


Fig. 4.3: Distribution of Respondents According to Human Waste Disposal in Creek Town

Table 4.6
Distribution of Respondents according to Sources of Water for
Drinking and Reasons for the Choice

Characteristics	Frequency	Percentage
Major source of drinking water		
Stream	85	100.00
Borehole	-	-
Spring	-	-
Pipe born	-	-
Dug well	-	-
Total	85	100.00
Reasons for choice of source		
Nearness	22	16.54
Cleanest	62	46.62
No better alternative	49	36.84
Total	133	100.00

* Number exceeds 80 as a result of multiple responses

Source: Field Survey, 2007

The provision of potable drinking water through the proposed water project is therefore a felt need of the community and timely.

4.6 Expectations and Fears of the Community

Members of Creek Town community are happy about the proposed water project as it will solve their current problem of potable water supply. They expect that the water will be piped and distributed to the communities in the hinterland who have relatively no alternative source of water; the taps shall be located at strategic locations that are accessible to the people. However, they are afraid that, the proposed water project may likely go the way the previous one went (abandonment). They have also promised to make sure that the facility will be properly managed to avoid vandalism and to ensure its sustainable use.

Recommendations

- (i) The government should implement the water supply project at Creek Town as the community is in dire need of potable water
- (ii) The ground water obtained from the present borehole in Creek Town is salty probably due to its closeness to the river

basin, so drilling a borehole farther in the inland shall yield a suitable safe drinking water.

- (iii) Water obtained from the present borehole should be analyzed for bacteriological, physical and chemical properties. These properties should be compared with WHO guidelines for drinking water quality
- (iv) Water distribution system through pipes should be connected to strategic locations / squares in the community.
- (v) High water supply quality service shall be required in the community.

REFERENCES

Creek Town Foundation (2007) History of Creek Town:
www.creektownfoundation.org/history.html April 26th
4.30pm

Ehinomen, C. (1998) The Use of Community Participation in Potable Water Supply in Nigeria. The Case of Edo State. The Nigerian Journal of Economic and Social Studies. 40 (1): 67-85

Mehrotra, S. Van der moorlele, J. and Delamonica, E. (2000) Basic Services for A. U. Innocenti Publications, Flourence, Italy

Harvey P. and B. Reed (2004), Rural Water Supply in Africa. Building Blocks for Handpump Sustainability. Water, Engineering and Development Centre, Loughborough University

Idiong, I. C. (2006) Evaluating of Technical, Allocation and Economic Efficiencies in Rice Production Systems in Cross River State, Nigeria. Unpublished Ph.D Thesis, Department of Agricultural Economics, Michael Okpara University of Agriculture, Umudike, Nigeria.

National Population Commission (NPC, 1991). Final Census Report of the Federal Republic of Nigeria. Abuja.

National Population Commission (NPC; 1996) Population Estimates of the Federal Republic of Nigeria.

Umeh, L. C. and S. N. Uchebgu (1997) Principles and Procedures of Environmental Impact Assessment (EIA). Computer Edge Publishers, Lagos.

Tanji K. K, (2003) Agricultural Drainage Water Management in Arid and Semi-Arid Areas. FAO, Irrigation and Drainage paper 61

World Health Organization (2006), Guidelines for Drinking Water Quality. First Addendum to Third Edition, Vol. 1. 515pp

APPENDIX

QUESTIONNAIRE FOR SOCIO-ECONOMIC SURVEY FOR THE CREEK TOWN WATER SUPPLY PROJECT IN ODUKPANI LOCAL GOVERNMENT AREA, CROSS RIVER STATE

SECTION A

- (1) Name of Community: -----
- (2) Ward -----
- (3) Ethnic group: -----
- (4) Language/Dialect-----

SECTION B

Demographic Information (Tick where appropriate)

- (5) Sex of household head: (a) Male (b) Female
- (6) Age of household head (a) less than 25 () (b) 25-30 () (c) 31-35 ()
(d) 36 – 40 () (e) 41- 45 () (f) 46 – 50 (g) more than 50 ()
- (7) Marital status (a) Single (b) Married (c) Widowed (d) Separated / Divorced
- (8) Type of family (a) polygamous (b) Monogamous (c) others (specify)
- (9) Highest educational attainment of household head
(a) Never attended school
(b) Primary school
(c) JSS III
(d) Secondary / Teachers College
(e) OND/NCE
(f) HND/Degree
(g) Higher degree
- (10) Religion (a) None (b) Christianity (c) Muslim (d) Traditional worshipers
(e) Others (specify) -----
- (11) Family composition (in number)

Sex	Age classification		
	Less than 12 yrs	13 – 18	Above 18
Male			
Female			

(12) Major occupation of household head (a) Farming () (b) Trading ()
 (c) Civil servant () (d) Retired () (e) Contractor ()
 (f) Fishing () (g) Technician / Artisan () (h) Others (specify)

(13) What is your monthly income from major occupation? -----

(14) What is your secondary occupation? Tick as appropriate
 (a) Farming (b) Trading (c) Contractor (d) Fishing (e) Technician
 (f) Others (specify)

(15) How much do you make from your secondary income monthly? -----

(16) What household assets do you own? Yes or No (a) Car (b) Motor cycle
 (c) Bicycle (d) House (e) Television/video sets (f) others (specify)

(17) If you own a house; what type is it? (a) Flat (b) Bungalows (c) Semi-detached (d) Rooming houses with Court yard (e) Room and Palour
 (f) others (specify)-----

(18) Is the house built with the following materials (a) Cement blocks
 (b) mud wall (c) Thatched roof (d) Corrugated iron roof (e) Long span
 (f) wood /zinc wall (g) others (specify) -----

(19) Indicate available toilet facilities (a) Pit toilet (b) water closet (c) Bucket
 (d) Others (specify) -----

Potable Water Supply Situation

(20) What are your sources of drinking water (a) streams /river (b) spring
 (c) dug well (d) Bore hole (e) Rain (f) Pipe borne water (g) Others
 (specify) -----

(21) What is the distance between your house and your source of water
 (a) half a mile (b) A pole (c) 1 mile (d) above one mile

(22) What are the reasons for your using the present source of water

(a) it is nearer your home (b) it is the cleanest (c) you do not have a choice

(23) Have you or any member of your household suffered from any water born diseases (a) Yes (b) No

(24) If Yes was it as a result of drinking water from your present source? (a) Yes (b) No (c) I don't know

(25) If (yes) where did you receive treatment? (a) Health Centre (b) Patent Medicine dealer (c) Traditional healer (d) Any other Source

(25) Are you aware that stream water can be unsafe for drinking? (a) Yes (b) No

(26) Apart from drinking, what else do you use water for?
 a. Washing of clothes and utensils (b) Bathing (c) flushing of toilets
 (d) Processing of palm fruits, cassava and other things (e) Others
 (specify) -----

(27) Have there been any water project undertaken in the community?
 Yes () No ()

(28) Who financed the project (a) Government (b) Community (c) Individual

(29) What kind of water project was it? (a) Dug well (b) Pipe bore (c) Borehole

(30) Is the water project still functional (a) Yes (b) No

(31) If No, what caused its collapse? (a) poor management (b) low quality job
 (c) Others (specify) -----

(32) Are you happy that government is about providing your community with potable drinking water? (a) Yes (b) No

(33) Suggest ways on how this water facility can be effectively managed
to ensure its continuous use in the community-----

Agricultural Production

(34) List the crops you cultivate in order of importance

(a) ----- (b) ----- (c) -----
(d) ----- (e) ----- (f) -----

(35) How many hectares of land do you cultivate every year?

(a) less than one (b) 1 – 3ha (c) 4 – 6 (d) 7 and above

Thank you for your cooperation and God bless