

---

REGIONAL TRAINING AND APPLIED RESEARCH PROJECT

ANALYSIS AND PROCESSING

RESEARCH PROJECT #AFP/AR/Ph.2/94.005

*BASELINE SOCIO-ECONOMIC STUDIES ON CHEMUSE  
1994 PILOT FISHING AREA*



By

PHOEBE LOKKO & SALOME ANSON

Food Research Institute

P.O. Box M.20

Accra.

AUGUST

1994

---

# CONTENTS

	Page
SUMMARY	i
ACKNOWLEDGEMENT	ii
1. BACKGROUND INFORMATION	1
1.1 Work so far accomplished in Phase 1	2
2. CHEMUSE-SHIABU	4
2.1 Population	4
2.2 Housing	4
2.3 Health and Sanitation	5
2.4 Tribe and Religion	6
2.5 Water Supply, Lighting and Fuel	6
2.6 Education	6
2.7 Economic Activity	7
2.8 Marketing and Market Days	7
2.9 Social Activities	7
3. INDEPTH STUDIES OF HOUSEHOLDS	9
3.1 Age and Marital Status	9
3.2 Tribe and Religion	10
3.3 Education	10
3.4 Household Number and Children	11
3.5 Water Supply, Sanitation and Health	12
3.6 Main and Other Occupation	13
3.7 Ownership of Property	14
3.8 Eating Patterns	15

## LIST OF TABLES

4.	THE FISHING INDUSTRY OF CHEMUSE	...	...	...	...	16
4.1	Fish Processing and Related Activities	...	...	...	...	16
4.2	Smoking Ovens	...	...	...	...	16
4.3	Trays	...	...	...	...	18
4.4	Sheds	...	...	...	...	19
4.5	Fuel	...	...	...	...	19
4.6	Smoking Capacity	...	...	...	...	19
4.7	Fish Processing	...	...	...	...	20
4.8	Fish Smoking	...	...	...	...	20
4.9	Fish Packaging and Storage	...	...	...	...	21
4.10	Fish Marketing and Distribution	...	...	...	...	23
4.11	Transportation	...	...	...	...	23
4.12	Fish Sales	...	...	...	...	23
4.13	Problems Encountered	...	...	...	...	24
5.	INCOME	...	...	...	...	26
5.1	Income from Fish Sales	...	...	...	...	26
5.2	Problems	...	...	...	...	27
5.3	Social Activities	...	...	...	...	27
5.4	Observations	...	...	...	...	27
6.	DISCUSSION	...	...	...	...	28
6.1	Social Background	...	...	...	...	28
6.2	Fish Processing, Marketing and Distribution	...	...	...	...	29
7.	CONCLUSION	...	...	...	...	31
8.	PROBLEMS IDENTIFIED	...	...	...	...	31
9.	RECOMMENDATION	...	...	...	...	31

## LIST OF TABLES

	Page
TABLE 1 - MARITAL STATUS AND AGE DISTRIBUTION OF WOMEN	9
TABLE 2 - EDUCATION, AGE AND NUMBER OF CHILDREN	12
TABLE 3 - MAIN AND OTHER OCCUPATION	14

## ACKNOWLEDGEMENTS

This project was funded by the Dutch and Ghanaian Governments. My special thanks go to Mrs. Gladys Nerquaye-Tetteh, the Project Manager for all the support she gave during the course of the project.

Our thanks also go to Dr. W.A. Plahar, the Research Co-ordinator.

Finally, we wish to thank Miss Patience Tetteh for typing this report.

## SUMMARY

Background socio-economic studies were conducted on Chemuse, a fishing community in Accra, chosen for the 1994 Artisanal Fish Processing Training Course.

The study examined the area characteristics, basic amenities and fish smoking activities. In general the standard of living was found to be good. The main problem was poor area planning and flooding during the rainy season.

The women were hard working with fish smoking as their main occupation. In the lean season however, they engage in petty trading and food vending. They also play a major role in fish marketing and distribution all over the country. It is believed that credit facilities, education and family planning would have a positive effect on them.

REGIONAL TRAINING AND APPLIED RESEARCH PROJECT  
IN ARTISANAL FISH PROCESSING

SECOND PHASE

BASELINE SOCIO-ECONOMIC STUDIES ON CHEMUSE  
1994 PILOT FISHING AREA

1. BACKGROUND INFORMATION ON BASELINE STUDIES  
OF PILOT FISHING VILLAGES

Although women in fish smoking possess a considerable expertise, the importance of their economic role at the community and national level is seldom recognised. Furthermore, though these communities regularly produce fish, most of them remain poor. They are generally among the socially disadvantaged groups in the country.

The identifiable reasons for this situation are many, and sometimes, complex: the highly perishable nature of fish is one; inadequate storage facilities for both fresh and processed fish is another. Yet another reason is the seasonal fluctuation in fish production.

The quality of fish available to the Ghanaian public varies according to the different types of fish processed, handling practices followed and processing and storage capacity available.

The main feature of the Project is a 6 week training course in Fish Processing for Extension Workers from Eastern, Central and Western Anglophone Africa.

Participants attending the course take part in classroom, laboratory and field exercises. Pilot fishing villages are chosen each year where participants interact with the community members. Field practical on Chokor Oven construction, smoking and salting of fish are also carried out in the village with the participants of the fish processors.

Baseline studies are carried out in all the pilot villages prior to the commemoration of the course. This is done in order to process information about the pilot villages for the participants. The studies always record the traditional fish processing methods, smoking ovens in use, sanitation and demographic data for all villages. This is done to help in future evaluation of the held activity and for the extension work. Follow up studies are also carried out after the training course in order to monitor the progress of the fish processors and help in the future planning of field studies.

#### 1.1 Work so far accomplished in the first phase

The villages so far visited are Lekpogunor and Ahwiam, (Anson, 1988) Mangotsonya and Ayetepa (Lokko, 1989) Tema Manhean and Nungua Faashi (Lokko, 1990) New Galilea and Amanfro (Lokko and Dake, 1991), Lagma (Lokko and Anson, 1992) and Gbegbeise (Lokko and Anson, 1993)

The reports have been prepared on indigenous traditional processing, methods and ovens, role of women in fish processing and assessment of their incomes

The results obtained have been used to improve upon the course content and the field work. Problems that cropped up in the other studies have been solved, e.g. building ovens for those who were not listed. This time the women were given ID tags. There was education on personal hygiene, sanitation, good processing methods and demonstrations.



Fish is processed by various methods to prolong shelf life and prevent post harvest losses. Smoking is a major method of fish preservation in Ghana. Metal and round mud ovens have been used in fishing communities to smoke fish. Some other improved fish smoking ovens have been developed but the most successful in the country is the Chorkor Smoker, which is an improvement on the traditional metal and mud ovens. It has the advantage of being more efficient in its operation, having a lower fuel consumption and a large smoking capacity. It also smokes fish uniformly and produces good quality product.

The Ghana Netherlands Artisanal Fish Processing Project sought to extend the Chorkor Smoker to fishing communities which are either using the traditional ovens or which have inappropriately adopted the Chorkor Smoker. The aim is to improve the living conditions of fishing communities through improved income generating technologies. The first phase of the project spanned 6 years and ended in 1993.

Chemuse, a fishing community in Accra was chosen as the 1994 pilot village for the 1994 training course. The community satisfied all the selection criteria.

## 2. CHEMUSE-SHIABU

Chemuse, is a suburban area of the Greater-Accra Region of Ghana. It is situated at Accra West and bounded by the sea to the South, the Chemu Lagoon to the East and Dansoman Estates to the North. The river Gbegbe lies to the West of this fishing area.

Chemuse is a Ga name which means "behind the lagoon/stream Chemu" and Shiabu mean "The sand has been taken away leaving a large hole".

The area is low lying and gets flooded when it rains. The area is also very sandy.

### 2.1 Population

Chemuse-Shiabu is one of the seven communities under the Gbabu electoral area. The total population of this area is about 20,000 people with the break-down as follows:-

55 - 70 years are about 5,000

18 - 55 years are about 6,000

0 - 18 years are about 9,000

The population of Chemuse is about 3,000 children are in the majority

### 2.2 Housing

Most houses in Chemuse are well constructed. This is quite unique and different from most fishing villages. There is not a single "temporary" structure made of thatch or mud to be seen in the community. The houses are built from cement blocks with asbestos roofing. It is possible that the proximity to Dansoman Estates next door has created in them the desire to construct better houses. The

biggest problem is the absence of any town planning; consequently, the houses are not well arranged.

In addition, there are no access roads to the houses; as a result, a sick person have to be carried to the main road, to be put into a vehicle before being taken to the hospital.

### 2.3 Health and Sanitation

General sanitation is fairly good. There is pipe-borne water and there are wells available to the people. There are no clinics in the community but they visit private medical practitioners in Dansoman and public health nurses do home visits once a month. There are polyclinics in Chorkor, Dansoman and Mamprobi and these facilities are available to the people of Chemuse. The people with serious ailments or diseases are taken to Korle-bu Teaching Hospital which is a few kilometres away. They give self-medication when symptoms are mild eg. headaches and colds.

Major health problems include malaria, diarrhoea, respiratory tract infections and worm infestations.

There are two KVIP (Kumasi Improved Ventilated Pit) toilets constructed for communal use. One is in the use while the other is yet to be commissioned. Twenty cedis is paid in order to use the facility once. Some individual houses have KVIP toilets as well as water closets.

There are refuse dumps on the outskirts of the village but some people dump their refuse by the stream. Others dig pits in the compounds and bury their refuse. The burying of refuse is very popular at Chemuse because they believe they are reclaiming their land and eventually, they will be free from floods.

The presence of domestic animals in the community is not strongly felt, although a few chickens can be seen roaming about in the compounds.

#### **2.4 Tribe and Religion**

The major language spoken in the community is Ga. A few people speak Twi. There are small pockets of residents who speak Ewe and Kussasi.

The people are mainly Christians. There are a few Moslems and pagans. There are no shrines in the village. The only restriction is the suspension of fishing activities on Tuesdays to allow the sea to rest on that day and the fish to have a holiday. The area also has a large number of churches which are well patronised. The men mend their nets during this time and the women rest or do other things like marketing, attend meetings, funerals and outdoorings.

#### **2.5 Water Supply, Lighting and Fuel**

Good drinking water is available but only a few people have taps in their homes. The rest of the people purchase water at c20.00 per bucket.

The community has electricity. Wood, kerosine and charcoal are sources of fuel. Cooking is done under sheds or in the open. Tripod stoves, stoves or coalpots are used for cooking. Electrical and electronic equipment are common in the houses of the people.

#### **2.6 Education**

The schools available in the community are not very good; therefore, 35% of the children of school going age travel to other communities like Dansoman, Chorkor and Mamprobi to attend school. School dropouts help in fishing, fish processing and petty trading.

## 2.7 Economic Activity

Most of the women process fish by smoking using the Chorkor Smoker and the men are mainly fishermen. Besides fishing, the men are carpenters, artisans, masons and tailors. The women are petty traders and kenkey makers. Some go out to work for Government or for private enterprises.

## 2.8 Marketing and Market Days

Chemuse has no market. The people purchase their food items either from vendors, street food seller or go to Kaneshie, Mamprobi or Agbogbloshie markets. Some traders take their wares from house to house. Others sit by the road side and arrange attractively their wares on tables for sale.

## 2.9 Social Activities

The Chemu-Shiabu community has no chief of their own but the Gbegbeise chief is responsible for Chemuse also. The Chief resides in Gbegbeise and is called Nii Motey Kobia. Pastor Noah Akorley, assisted by an Assemblyman called Commodore heads the Chemuse community. The Chemuse-Shiabu Development Committee sees to the overall planning and implementation of development programmes and projects in the community.

The Association of the Committee for the Defence of the Revolution (ACDR) is a very active organisation in the community. It mobilises and educates the community members on government policies and any other vital information or education needed for the general improvement of the community.

The Chemuse community members have no intention of ever leaving the area. It is a permanent area for them as the land belongs to them. They purchased the land from the Chief's sons at Gbegbeise. One quarter of an acre of land was purchased at c400.00. At the moment there is no available land since all has been purchased and developed.

Chemuse-Shiabu, as a Gbegbeise community enjoy all the social amenities available to the residents of Accra, namely television, boutiques, drinking bars, radios, tape recorders, etc. They enjoy all types of music and attend commercial video houses or cinemas.

They also celebrate the annual Ga Homowo festival and enjoy elaborate outdoorings and funeral ceremonies. The beach is a place for holiday makers and for those who want to relax and swim.

Clean-up campaigns and communal labour are organised on Saturdays with the men doing the weeding while the women and children sweep and dispose of the rubbish.

### 3. IN-DEPTH STUDIES OF HOUSEHOLDS

Information on technical, qualitative and quantitative data on existing fish processing methods was obtained through interviews with 20 identified women fish smokers at Chemuse.

The interviews were carried out in the home of each woman. The names of the women are in the Appendix.

#### 3.1 Age and Marital Status

Information on the ages and marital status of the women were obtained. Below is the age distribution and marital status.

**Table 1**  
**Marital Status and Age Distribution of Women**

Age Group Years.	Married	Divorced	Widowed	Single
20 - 29				
30 - 39	3	-	-	-
40 - 49	5	-	-	-
50 - 59	3	1	-	-
60 - 69	2	1	1	-
70 - 79	2	1	1	-
	2	-	-	-

The ages of the women range from 25 to 70 years with the average age of 47.75 years. Seventy five percent of the women were married, 15% divorced and 10% widowed.

Table I also shows that 3 of the women were between the ages of 20-29, five between 30 and 39, seven between 40-49, 6 between 50-59 and the remaining 4 over 60 years old.

They are all mature women, sure of themselves knowing all about fish smoking. They are married with children and very conversant with family life. They are hard working, pleasant, receptive and ready to co-operate with us.

Polygamy is accepted by the women although all those who are divorced gave the advent of other women as the reason.

### 3.2 Tribe and Religion

Nineteen out of the 20 women are Christians. One woman is a pagan. They are mostly Gas from the Ga tribe. This is to be expected as Chemuse is inhabited by the Gas from Accra. All except 2 women are Gas. The remaining two women are an Ashanti and an Ewe. They are products of inter-marriages between Gas. The women are all married to fishermen.

The group is very religious as most members belong to a Spiritual Church in the area with the head being Pastor Noah Akoley - the one who assists the assembly man Commodore in running the village.

### 3.3 Education

This community has the highest percentage of literate women we have come across in the studies. 60% are illiterate, 10% reached primary six and 40% completed middle school. This group of women are very enlightened and sure of themselves.



### 3.4 Household Number and Children

The average number of children per women is 7. The highest being 13 and the lowest 2. Those with small number of children are those between 20-29 and who are still actively producing children. Those with the highest number of children per woman are those over 50 years with an average of about 10 children per woman.

Apart from the children, there are other dependants like parents, brothers, sisters, nephews, nieces, grandchildren all staying with them, which swell up the household size. The average number of people per household is 16. They claim that they have the right to have as many children as they want.

None of the women paid any rent because the rooms they occupy belong to the family member, either their own, husbands or relatives. Some of the houses are congested while others have few occupants. Some of the children are grown and have left the home but others have brought their children to stay with their grand mother. The extended family system is very much practical in this community.

It was also realised that Education did not influence the size of families. Those over 30 years old who completed middle school have an average number of 5 children which is very high. See table II.

**Table II : Education Status, Age, and Number of Children**

Age Group Year	No. of Children	Educational Status		
		Middle	Primary	None
20 - 29	3	1	-	2
30 - 39	6	2	1	2
40 - 49	6	2	-	2
50 - 59	6	1	-	3
60 - 69	12	-	-	2
70 - 79	10	-	1	1

### 3.5 Water Supply, Sanitation and Health

The water supply situation is similar to that of Gbegbeise. 3 people out of the 20 have water taps in their homes. The rest and their extended family purchase water at c20 per bucket from the households with taps. There are also wells in the area which supply water for domestic use and for fish processing whenever tap water runs dry.

Plastic containers, buckets and bowls are used to fetch the water. There are big drums in the houses in which water is stored because there is frequent closure of the town water taps. Usually, children, grand-children and house-helps go and fetch water for the household use.

The women should be encouraged to connect water to their homes as this will save them some money and the children will be able to rest and will also be protected from dangers and difficulties involved in going to fetch water.

There is a bathroom in every house but only 2 women have KVIP toilet facility in their homes; the rest, 90% of them use the public toilet and pay c20 each for each visit. If there are 16 people per household and each has to pay at least c20 a day for water and c20 a day to visit the toilet then each household spends at least c640 each day on water and public toilet.

Two out of the twenty women suffered from heart disease; one is 58 and the other 32 years. They are getting treatment at Korle-bu hospital. 50% suffer from occasional headaches. Malaria, dizziness, waist and knee pains, fever and body aches were some of the ailments complaints made by the women.

The younger ones also suffer from occasional bouts of malaria and cough. Diseases of affluent societies have been cropping up in fishing communities in suburbs of Accra. These problems were not found in other villages. It may be generally due to attempt at urbanisation.

They treat themselves with paracetamol, antibiotics and aspirin. There are no traditional birth attendants and traditional healers.

The children also suffer from malaria, measles, cough, colds and diarrhoea.

### 3.6 Main and Other Occupations

The main occupation of the women is fish smoking. This occupation keeps them very busy during the bumper season but in the lean season they turn to other occupations

Table III: The Main and Other Occupation of the Women

1.	Fresh fish mongering	-	1
2.	Petty trading	-	2
3.	Frying of poultry pieces/meat	-	3
4.	Purchases iced fish from Tema for smoking	-	4
5.	Nothing	-	7
6.	Kenkey/banku/rice water	-	4
7.	Fish Smoking	-	20

Study of their lean season activities showed that 35% did nothing. 25% purchased horse mackerel from Tema to smoke, 30% prepare cooked food for sale like kenkey, with fried fish or poultry, 10% indulge in petty trading. They simply just got by. Those who do not work during the lean season also denied having saved any money for that purpose.

They rear domestic animals like chickens and goats.

### 3.7 Ownership of Property

Owning a house and a boat is the dream of everybody in all fishing communities. As stated already they do not live in rented houses or rooms. They, or their husbands and relatives own the houses they live in.

If they want to acquire land, they buy from the Chief's sons in Gbegbeise. In 1984,  $\frac{1}{4}$  acre of land was sold for ₦400 but land is very scarce now and therefore expensive.

Twenty five percent of the women owned and live in their own houses. One woman had 2 houses and they used the profits from the fish smoking to build the houses. Fifteen percent owned nets and 10%

owned boats. Although most do not own anything, the children, husbands and relatives (parents) might own something.

### 3.8 Eating Patterns

Breakfast and lunch dishes are usually purchased for the members of the household: these include watse, rice and stew, bread, koko. The evening meal, which is the main meal of the day is prepared in the home. They are watse, rice and stew, bread, koko. The women are not fussy about food but consume whatever is available. The starchy foods consumed include kenkey, banku, fufu, rice and gari. Accompanying these starchy foods are sauces like palm, groundnut and light soups, stews like okro, garden eggs, nkontomire, fried fish, etc.

The amount of money spent on food ranged from c1,000 to c4,000 per family.

The women do their marketing from the main markets where the fish is taken for sale or purchase their food items and ingredients from vendors around the area.

#### 4. THE FISHING INDUSTRY OF CHEMUSE

The main economic activity at Chemuse is fishing, fish processing and fish marketing. Fishing is one of the indigenous industries in Ghana. Sea fishing is the most important and accounts for 80% of home supply of fish consumed in the country every year. The main fishing equipments are boats, outboard motors and fishing nets. Fishing is done by the men and types of fish landed include Odoi, Tsukoe, Anchovies and Herrings. Sometimes they get a lot of Shrimps and Lobsters.

##### 4.1 Fish Processing and Related Activities

Fish processing is women's activity. Smoking is the major fish processing activity and the Chorkor Smoker is the main oven used.

##### 4.2 Smoking Ovens

Just like Gbegbeise, all the smokers, including the 20 selected women use the Chorkor oven for smoking. These ovens however, do not always conform to the correct specifications in length, width or height of the standard Chorkor oven. The Chorkor smoker is an improved fish smoking oven extensively used by most women fish smokers in Ghana today.

The main materials used in the construction of the smoker is clay. This is very difficult to come by now in Chemuse because in the months of July and August, during the bumper season, the greater part of the land gets flooded because of heavy rains. Because of this, digging of clay or mud for the construction of the Chorkor oven has been stopped due to the erosion it has caused in certain parts of the community. Therefore, mud or clay for oven construction is purchased from road contractors and those building new houses nearby.

The women in the flooded areas are not able to smoke their fish so they retail it immediately. This is the only community where the smoker has been introduced but where there is need for clay. This situation has compelled the women to cause ovens to be constructed either with sancrete blocks or mud with cement facing.

Since they are near to Chorkor, they adopted the Chorkor Smoker early and think it is a very good oven.

The lifespan of the ovens constructed by the women ranges from 1½ to 4 years. They find it very difficult to maintain the ovens because they can not get the clay to maintain them.

Some developed cracks, some were destroyed by the weather, because they were not adequately sheltered.

The present state of the ovens are good because they are getting them ready for the bumper season smoking activities. They have come to like the ovens so much so that they have been recommending them to friends and relations. They all own more than 1 double-hole oven. A few of them have 4-5 ovens.

The present cost of oven construction is high, as the following break-down shows:

Cost of construction	-	c4,000
Cost of 4 truckloads of clay		10,000
		<hr/>
		c14,000

Since none of them had constructed a shed over the oven, the lifespan is not long. They cover the ovens with boards or polythene sheets. They have all had to repair or rebuild their ovens.

It was also observed that there were very small size Chorkor ovens in the community. The women explained that those were used to teach children how to smoke fish and for smoking very small quantities of fish by adults.

#### 4.3 Trays

The trays are constructed from wood, nails and wire nets. The women said the imported wire lasts for 3 years while the local ones last for only a year. The breakdown of cost of 20 trays is as follows:-

1 bundle of wire net	-	46,000
wood	-	24,000
transport	-	6,000
Splitting	-	4,000
Labour (Carpentry)	-	6,000
Nails	-	5,000
		-----
Total		¢91,000
		=====

Cost per single tray varies from ¢4,500 to ¢6,000.

The trays are covered with a rubber sheet when not in use.

The lifespan of the wire is 1 year but when it is in constant use, lasts longer. The wood lasts for 3-5 years, sometimes more.

When the trays are not in use, they are stacked on the oven and covered with a wooden board or a plastic sheet.



#### 4.4 Sheds

Only one woman has built a shed over her oven. She used wood and thatch and the total cost was c60,000. She was happy that she did it because she is protected from the sun and rain.

The nineteen other women would like to work under a shed. They gave reasons of personal health, easier operation as well as protection from the hot sun and rain thus ensuring no break in the processing of fish as the motivation to want to construct a shed. But the reason why they cannot do it is mainly financial. They thought that it was better to invest in trays than in the sheds.

#### 4.5 Fuel

Firewood is the main source of fuel for fish smoking. Some types of wood used are Gyaewoba, mase, sa, emere and sugar cane straw. For economic purposes the women use dried osanodata and cocoa wood as these burn longer and cost less. Other types of woods are used.

The log of wood is sold for c1,000, c900, c800 depending on the size; and the splitting costs c1,000, c1,200. One log is able to smoke a crate of fish of 25kg and 10-12 logs can smoke 15 crates of fish. A bundle is sold at c350.

#### 4.6 Smoking Capacity

Five of the women are capable of smoking up to 100 crates of fish a day. Eleven can smoke between 10 and 50 crates and 4, under 10 crates a day during the bumper season. Most of the women are happy to smoke 10 crates of fish a day.

#### 4.7 Fish Processing

Fish is an extremely perishable commodity and has to be processed immediately after landing. The fishing period takes most of the day. Sometimes, over 9 hours. Therefore, the landing of the fish is usually late. The women therefore ensure that processing is done very fast to avoid spoilage since customers prefer good quality smoked fish.

The women of Chemuse either smoke, salt or fry the fish. The fish could also be dried but the main method of processing is by smoking. A bowl or a crate of fish sells at c8,000–c12,000 and a labourer charges c200 to carry this quantity of fish to the processing site.

Smoking is preferred to other types of processing because a large number of fish can be smoked and stored for periods ranging from 2–5 months.

The fish is purchased from the fishermen upon landing at the beach. If sufficient fish is not landed at Chemuse beach, the women travel to other landing sites in Accra or to the Central Region to purchase fresh fish. Some of the purchasing sites are Jamestown, Tema, Nungua, Winneba and Nyanyano.

The fresh fish is placed in baskets and the baskets on trays which protect them from dripping as they convey the fresh fish from the shore to the processing area.

#### 4.8 Fish Smoking

The fish is washed thoroughly before smoking to get rid of all the sand. The big fish are gutted and cut up into convenient smoking sizes. The small fish are washed and arranged on the wire tray and smoked over the chorkor oven. Fish smoking during the peak season is done around the clock.

Usually, 2 people are able to smoke comfortably using the Chorkor smoker but if the amount of fish to be smoked is very large, more hands, up to 4 people are recruited.

Although the Chorkor Smoker is the main oven used in smoking in this community, the coal pot is also used but only for grilling fish or smoking very small quantities of fish. Smoking takes 3-4 hours to complete but dry fish smoking takes a bit longer - up to 6 hours.

During the lean season, frozen fish is purchased from Tema and smoked by a few of the women.

Problems encountered during fish smoking include the following:-

1. Shortage of smoking trays
2. Sometimes, wet firewood
3. Insufficient money to purchase fish and other inputs
4. Bodily pains from hard tedious work
5. Absence of credit facility
6. High cost of firewood

#### 4.9 Fish Packaging and Storage

Fish packaging either for storage or for the market is done by the women and their children. Hot smoked fish are arranged nicely in aluminium or enamel basins lined with clean brown paper. Because of the wet nature of this fish it is stored just overnight and taken to the market for sale.

Smoked dry fish, usually the small fish like herrings and anchovies are packed in baskets lined with brown paper and firmly secured with a rope especially for transportation.

There are also special storage trays where the fish is stored and these are placed on the ovens, covered with plywood and polythene sheets. This smoked dried fish can be stored up to 4 months. Some use the round ovens for storage. Some of the women have prepared special rooms with cement floors of room and they pour the fish onto the floor. It is essential that the fish cools before packaging for storage or marketing.

To prevent attacks on the fish by insects, the women sprinkle a little powdered hot pepper on the fish. They believe that it protects the fish.

For how long the fish is stored depends on several factors. If the women have sufficient money and have paid off all their debts, then they can afford to keep the smoked fish until the lean season and they can then get a lot of money for their fish.

When however, the creditors are after them, they are compelled to sell the fish quickly in order to pay, although the price may be very low.

Cold storage facilities for the fresh fish are not available to the women. They really do not need it because fresh fish sell very fast at Chemuse and they have been able to do without refrigeration up till now.

Problems encountered during storage include insect infestation and mould attacks which cause the fish to be white

Some incur losses during storage. Most do not incur any loss because the fish is well treated so does not give them problems.

#### 4.10 Fish Marketing and Distribution

All the women take their smoked fish to 2 main markets in Accra, namely Tuesday Market at Mamprobi and Agbogbloshie Market.

#### 4.11 Transportation

The women explained that since they do not own vehicles or had no readily available means of transport, they get up as early as 4am, looking for convenient vehicle to transport the fish to the market. It is usually a mummy truck, a taxi or a pickup. If the charge is reasonable, the lorry is hired to transport the fish to either Agbogbloshie or Tuesday market. They pay c100 for a small basket of fish and up to c200 for the bigger baskets.

#### 4.12 Fish Sales

When the women get to the market, the fish is sold by the basket. They have customers who come to purchase fish from them. The customers in turn take the fish to sell all over the country. Some even come from Togo to buy the fish.

Formerly, the women were taking the fish to the regions but now, it is convenient for them to deal with middlemen who purchase and distribute the fish.

One woman continues to travel to the Upper Region to retail her fish. She goes 4 times in a year and takes along 40 baskets of smoked fish on each trip. Her total expenditure per trip is c20,000 made up of c2,000 for rent, and c18,000 for meals and transport.

If it happens that there is a glut in smoked fish at Tuesday or Agbogbloshie Markets, the fish is taken to Makola Market or the Train Station Market for sale.

On the average one individual can sell up to 20 large baskets of fish in a week in the lean season and only one basket when there is a glut.

The women claim they find ready market because of the quality of their fish. When they travel to the market in the morning with the fish, they spend between 4-11 hours in the market before getting rid of all or some of the fish.

They all sell the fish on credit to their customers. The good customers pay within 2 to 3 weeks. The bad ones take as long as 5 months to pay the money. If all the fish is not purchased, the remainder is brought back to the house and added to the fish to be sold the following day.

For 40% of the women, the business is expanding. For the 60% it is either the same or sinking. Although there is improvement in sales all over, they make less profit because of increase in prices of inputs and fresh fish.

#### 4.13 Problems encountered.

The women spoke of the problems they come across during the sale of their fish.

They complained that there is lack of space and stalls for them in the market and so they are at the mercy of the hot sun and the rains.

When the fish is sold on credit, some run away with the money and do not pay back.

Transportation costs is getting higher and higher and so is the cost of inputs so the fish is expensive and many people cannot purchase it.

Sometimes the women have to haggle over the stated price with the customers because the customers would like to purchase it as cheaply as possible.

Sometimes when they are not able to sell all the fish, some customers dictate the price and the conditions for sale.

The women revealed that.

There is increase in market tolls from ₦50.00 to ₦200. This is too expensive considering the fact that there are no adequate facilities available to them at the market.

The women do not keep records of their activities and sales. All their daily sales, profits, losses are calculated and kept in their heads.

When spoilage occurs, the fish is sold to poultry farmers who use it to prepare feed.

## 5. INCOME

### 5.1 Income From Fish Sales

The income from fish sales varied from woman to woman. Some claimed that they were making some profit but the business is not expanding as it should because of lack of capital. The profit is used on food, education of children, medical bills, etc. A few said their activities are financed by interest free loans from friends and relatives and they pay back by installments. Some say they make profit but the market is not stable. Sometimes they incur losses.

One woman sold her building in order to finance her business. Another one turns over her capital and borrows a little in addition.

They however declined to name any amount made as profit. They disclosed that the profit margins vary and depend on the market rate, the quality and quantity of fish smoked. According to prevailing market conditions, a basket of fish is sold at c7,000-c10,000 but they could not tell us the average number of baskets of fish sold each week.

Only 2 out of the 20 women have savings at the bank. They all said they do not have any regular sources of credit facilities available to them. Government, through the banks used to be their main source of raising loans, however, due to the inability of most of them to pay back the loans already received, they have lost credibility.

The women are being organised into groups and are being helped towards contributing some monies which will serve as collateral for borrowing money from the bank.



The women normally get the fresh fish from their husbands but they have to pay ready cash for the fish. Even the husbands do not sell to them on credit.

## 5.2 Problems

The women talked about financial constraints when they were asked to talk about their work.

Fifteen of them wanted credit or loans in order to expand or build the business. They need the money to purchase wood, wire, firewood and fresh fish for smoking

## 5.3 Social Activities

Not all the women, are involved with any groups or take part in any self- help or clean up exercises. There are facilities for entertainment: TV, video, ration pups.

These women are not involved in any form of adult literacy activity, but are now being encouraged to do so.

Women no longer have any regular sources of credit facilities available to them. They are however trying to organize themselves into a group working towards contributing monies which together will serve as collateral for borrowing from the bank.

## 5.4 Observations

The women are open and very co-operative. They are neat, fairly well dressed and very polite. They also appear to be very hardworking since the maintenance of their homes and families rest on their shoulders and not on their menfolk.

Facilities like good schools, clinics and access roads are not easily available to the community members.

## 6. DISCUSSION

The Chemuse fishing community is different from most fishing villages in one major aspect ie. habitat. There is not a single temporary structure made of wood, mud or thatch in the community. Although not well arranged, the houses have electricity and are well maintained. Chemuse is the best fishing community we have been to, with respect to sanitation.

At Chemuse, all the women use the Chorkor oven for smoking and it is very much like what pertains at Gbegbeise. A few of the ovens have been wrongly adapted.

### 6.1 Social Background

It has been found and confirmed by this study that fishing communities in suburban areas are far better off than typical fishing villages. Gbegbeise, Nungua Faasi, Chorkor, Tema U-Compound and Chemuse all suburban are endowed with portable drinking water and electricity. Access to hospitals, polyclinics and clinics. They have access to schools to the highest level available and at least 1 public KVIP toilet.

The villages of Lekpogunor, Ayetepa, Mangotsonya, Ahwiam, Langma, Amanfro, New Galilea, all did not have electricity or potable water, or access to good schools or clinics, and toilet facilities.

Chemuse is the cleanest of the lot with 2 KVIP's. Sanitation is poor in all the other communities and domestic animals, especially, pigs seem to flourish.

Illiteracy, high birth rate and polygamous relationships are common

Diseases like hypertension, heart disease, obesity are very common at Chemuse and the other suburban communities. These are practically unknown in the village environment. The diseases common to all fishing communities however are malaria, body pains, cough, skin rashes, diarrhoea, headaches and dizziness.

The people of Chemuse are not poor. They look very comfortable and they work hard using the money to improve their lot. All the women fish smokers are hard working. There are no lazy ones among them.

## 6.2 Fish Processing, Marketing and Distribution

Chemuse women are mainly fish smokers who purchase their fish from their fishermen when fish is landed at Chemuse. When no fish is landed they go to other parts of Accra or Tema to purchase fish for smoking.

The fish if large or medium sized is usually smoked straight away but if small, is dried first before smoking. This way of processing or smoking fish is common to all fish smokers.

The Chorkor Smoker is the oven used for smoking fish by all the women in Chemuse. Sugar cane straw and hard wood are the fuel used to give good quality smoked fish and an attractive brown colour.

Fish marketing and distribution are the same in all fishing communities. The smoked fish is marketed in baskets (see appendix). There are always 2 types of smoked fish, the hot smoked and the smoked dry fish.

With respect to transportation, the women arrange for vehicles either individually or as a family to convey their fish to the market. The women of Chemuse did not divulge their profit margin.

At the market, price fluctuations are experienced on days of low demand, the unsold fish is given out on credit or sent back home and sold the next day. Chemuse fish smokers are mainly wholesalers and sell to specific customers from Hohoe, Kpando, Aflao and Togo. They retail tuna fish from Tema during the lean season. Other occupations of the women are petty trading and preparation of street foods.

Owing to lack of credit facilities, the women operate on small scale basis and the little profit is used for basic family needs ie. school fees, food, medical bills and clothing.

The profit made on fish is spent mainly on the children and in the home as in other fishing communities. At Chemuse as in other fishing communities, the men sell the fish to their wives for ready cash and not on credit.

## 7. CONCLUSION

The study has brought out clearly the background information about Chemuse and the life styles of the selected women smokers. They have the basic necessities of life like water, electricity, health and educational facilities. The introduction of the Chorkor smoker will encourage them to work harder and more efficiently.

### PROBLEMS IDENTIFIED

1. Transportation costs are high and vehicles are not readily available.
2. The women need money to invest into the business.
3. The City Council taxes are high considering the fact that there are no adequate facilities for the women.
4. Firewood, clay and wire, wood and other inputs are all very expensive and, sometimes, difficult to obtain.
5. Some credit customers bolt away with the money, while others decide to purchase the fish cheaply.
6. They lack credit facilities.

### RECOMMENDATIONS

1. The women should form a group and work towards getting credit facilities.
2. Access road to the houses should be opened.
3. Health facilities should be provided.
4. The women should be encouraged to attend literacy classes and to learn some book-keeping.

## References

Anson, S. 1988 Baseline studies of Lekpongnoor and Ahwiam; two pilot fishing villages in the Greater Accra Region of Ghana. A project report on the Ghana/Netherlands Artisanal Fish Processing and Applied Research Project.

Lokko, P. 1989 Baseline socioeconomic studies of Mangotsonya and Ayetepa; two pilot fishing villages in the Greater Accra Region of Ghana. A project report submitted under the Ghana/Netherlands Artisanal Fish Processing and Applied Research Project. Food Research Institute, Accra, Ghana.

Lokko, P. 1990 Baseline socioeconomic studies of Tema U-compound and Nungua Faashi two pilot fishing villages in the Greater Accra Region of Ghana. A project report submitted under the Ghana/Netherlands Artisanal Fish Processing and Applied Research Project. Food Research Institute, Accra, Ghana.

Lokko, P. and Dake, F. 1991 Baseline socioeconomic studies of New Galilea and Amanfro; two pilot fishing villages in the Greater Accra Region of Ghana. A project report submitted under the Ghana/Netherlands Artisanal Fish Processing and Applied Research Project. Food Research Institute, Accra, Ghana.

Lokko, P. and Anson, S. 1992 Baseline socioeconomic studies of Langma; a pilot fishing village in the Greater Accra Region of Ghana. A project report

submitted under the Ghana/Netherlands Artisanal Fish Processing and Applied Research Project. Food Research Institute, Accra, Ghana.

**Lokko, P. and Anson, S. 1993** Baseline socioeconomic studies of Gbegbeise; a pilot fishing village in the Greater Accra Region of Ghana. A project report submitted under the Ghana/Netherlands Artisanal Fish Processing and Applied Research Project. Food Research Institute, Accra, Ghana.