

PROGRAMME FOR INTEGRATED DEVELOPMENT OF ARTISANAL FISHERIES IN WEST AFRICA

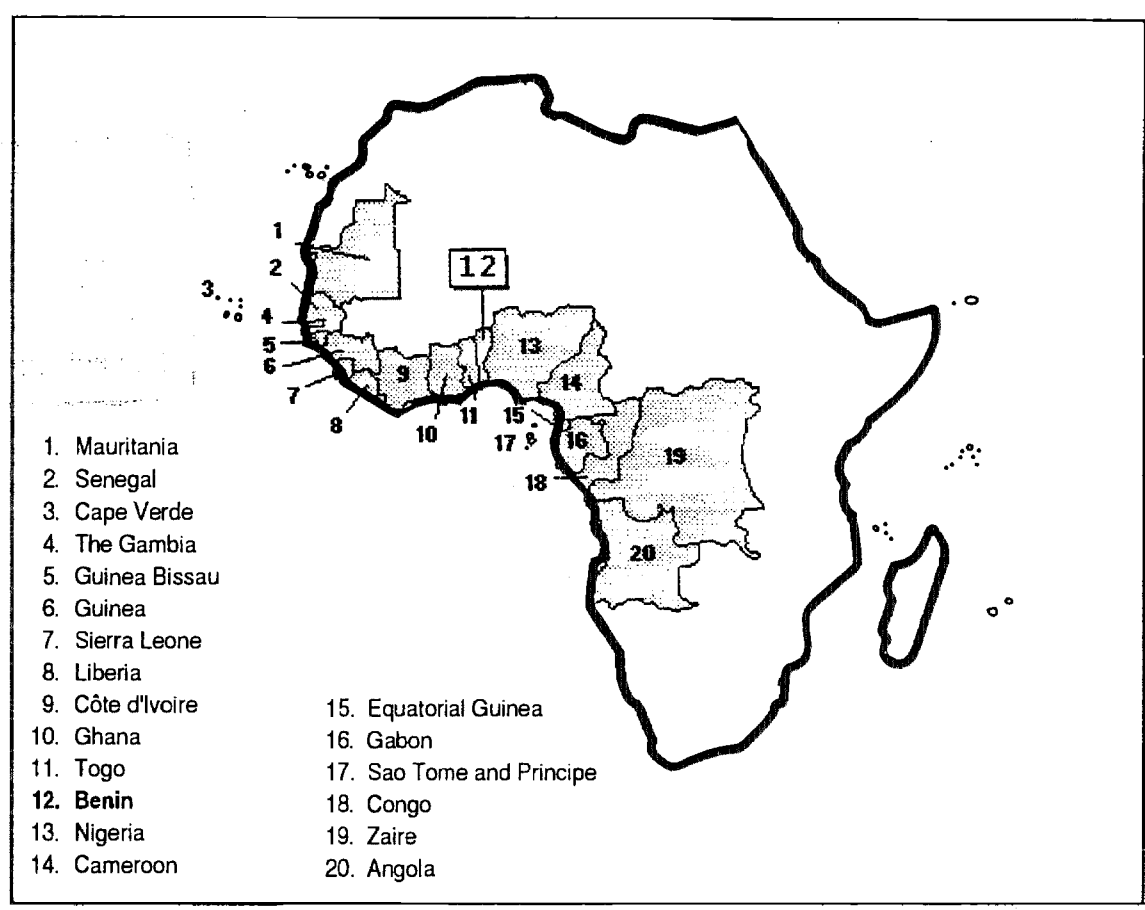
IDAF PROGRAMME

Technical Report N° 108

August 1997

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Costs, Earnings and Expenditure Structures of Fisherwomen, Fish Processors, and Fish Traders in Oghey, Delta State, Nigeria



DANIDA

DEPARTMENT OF INTERNATIONAL DEVELOPMENT COOPERATION OF DENMARK



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**Costs, Earnings and Expenditure Structures of
Fisherwomen, Fish Processors, and Fish Traders
in Ogheye, Delta State, Nigeria**

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THE VISION FOR IDAF PHASE III

INTRODUCTION

Development strategy during the 1960 and 1970s was based on the philosophy that developing countries lacked improved technology and capital for speeding up their development. Industrialization was promoted in order to capitalize on the abundant fish resources. However, the anticipated expansion of the economy did not happen and the development approach shifted towards an integrated rural strategy where emphasis is put on the community as a whole to upgrade incomes and the quality of life through technical assistance and the active participation of fisherfolk and the community.

In this context, emphasis was initially placed on the Community Fishery Centre (CFC) concept as a means of promoting artisanal fishery development. But it became apparent that the presence of a complex of facilities and services tailored to meet local needs was no guarantee that the structures/facilities would be used or that development would occur. The active participation of fisherfolk and the mobilisation of local and community resources was imperative in order to assure sustainability of initiatives undertaken by development projects and/or the community.

So far and in general terms, the IDAF Programme has worked under the context of abundant or seemingly adequate fishery resources with moderate population pressure. The scenario is however changing (and very fast for that matter) and we would soon face the triple constraints of reduced or depleting fish stocks, degrading environment and increasing population pressure. Like in other sectors, it must be anticipated that just to survive, parts of the population surplus in the fishing communities will enter the artisanal fisheries, which will increase the competition for the resources among the small scale fisherfolk in addition to the prevailing competition between the artisanal and industrial fisheries, with their attendant effect on the environment.

This scenario calls for a continuation of the integrated participatory strategy which remains relevant to the development of artisanal fisheries in West Africa. However, the emphasis needs to be placed on the elements and mechanisms that favour the sustainability of initiatives: responsible fishing, the empowerment processes that ensure the devolution of major resource management and development decisions to the local community, the strengthening of national human and institutional capacities at all levels for a sustainable and equitable fisheries resources management and development, as well as in the follow-up and consolidation of past achievements.

DEVELOPMENT OBJECTIVE

Thus the development objective of the Programme in the present phase III which started on 1 July 1994 is to ensure twenty coastal West African countries a sustainable development and management of their artisanal fisheries for maximum social and economic benefit of their fishing communities in terms of employment, proteins and earnings. This will be done through an integrated and participatory approach in which emphasis will be laid on equity, gender issues, the transfer of technology for development, environment protection, as well as the strengthening of human and institutional capacities.

The immediate objectives are:

1. To identify, assess and disseminate strategies and mechanisms for sustainable management and development of the artisanal fisheries in fishing communities;
2. To improve the competence of national Fisheries Departments staff in development and management planning of artisanal fisheries;
3. To enhance regional technical competence in the fisheries disciplines, particularly in fishing and fish technology;
4. To improve information and experience exchange related to artisanal fisheries within the region;
5. To promote regional and sub-regional collaboration for the development and management of artisanal fisheries

In this context, IDAF will among other things tackle the following major aspects in its work :

- assisting in the elaboration and implementation of a clear and coherent national development policy for the artisanal fishery sector;
- providing advice on management and allocation of resources between artisanal and industrial fishing fleets, both national and foreign;
- involving users in the design and management of on shore infrastructures;
- monitoring the sector's evolution by the setting up of an economic indicator system for the sector adapted to the financial and human availabilities;
- improving fishing technologies in accordance with the available resources;
- increasing the final product's value by improvement in processing and marketing;
- promoting community development in accordance with the lessons learned from Phase I and II and oriented towards the sustainability of actions undertaken;
- reinforce the Programme's information/communication system

It is anticipated that by the end of the third phase of the Project, the region will have a nucleus of field oriented experts capable to respond to the challenges of the artisanal fisheries sector and to spur development in their individual countries in keeping with the aspirations and needs of fisherfolk.

EXECUTIVE SUMMARY

At the tenth Liaison Officers Meeting of the Programme for the Integrated Development of Artisanal Fisheries in West Africa (IDAF) in Lome, gender issues in artisanal fisheries in West Africa were featured, and useful recommendations on follow up activities were made. These activities include the collection of information on women's activities in artisanal fisheries. Although women's participation in fishing and fishing-related activities is widely recognized, women's work is often associated with family support only. Consequently, apart from their contribution in terms of family support, little is known about women's role in the wider economy, and their contribution in accumulating wealth. In order to subscribe to filling this gap in the artisanal fisheries subsector, the Programme for Integrated Development of Artisanal Fisheries in West Africa (IDAF) planned and implemented a study on costs, earnings, and expenditure structures of fisherwomen, fish processors and fish traders. This report gives the results of the study conducted in Ogheye, Delta State, Nigeria.

The objective of the study was two-fold. First, to develop and implement cheap and viable research methods to study costs, earnings, and expenditure structures of women involved in the artisanal fisheries sub-sector. Second, to collect information on the following issues: investment costs, operational costs and sources of funds; women's income; the profitability of women's activities; social obligations and the structure of expenses; marketing channels; and the role and structure of socio-professional organizations.

Ogheye has a population of 4,500, consisting of about 785 adult women. All these women are involved in fishing and fishing-related activities. In fact, it is their major source of income. Apart from fishing, processing and marketing of fish and fish products, women play an important role in buying and selling their husband's catch as well as the catch of other fishermen. Further, women are responsible for household activities, such as the preparation of food, cleaning the house, and child care. They also play an important role in maintaining social networks at family, neighbourhood, and community level.

Three combinations of fishing and fishing-related activities of women can be distinguished; (a) fishing-processing-marketing, (b) processing-marketing and (c) fishing-marketing. Within each of these categories different fishing methods and/or species can be distinguished. Apart from this, most women finance or invest in other people's activities by supplying inputs.

The total investment cost is highest for women involved in fishing, processing and marketing of demersal and pelagic species (₦385,875). Second are women involved in smoking fish and crayfish and thus requiring a smoking unit. Women involved in fishing and marketing of periwinkle and crab bear the least investment cost (₦3,500 and ₦4,000 respectively). Since these are sold fresh, no smoking unit is needed. The low investment cost of periwinkle processing and marketing (₦3,500) can be explained by the fact that this activity does not require smoking. Processing in this respect refers to parboiling and extraction of the muscles from the shell.

Women involved in processing and marketing crayfish bear the highest variable cost (₦230,553). Second is gillnet + hook and line fishing, processing and marketing (₦126,631). In the first case it is mainly the quantity of fish bought for smoking that results in the high figures, while in the case of gillnet + hook and line units the high figure is due to high expenses on fuel.

1 INTRODUCTION

1.1 Background of the Study

At the tenth Liaison Officers Meeting of the Programme for the Integrated Development of Artisanal Fisheries in West Africa (IDAF) in Lome, Togo, gender issues in artisanal fisheries in West Africa were featured, and useful recommendations on follow up activities were made. These activities include the collection of information on women's activities in artisanal fisheries. Although women's participation in fishing and fishing-related activities is widely recognized, women's work is often associated with family support only. Men are still regarded as "breadwinners", while women are their "helpers", or generally referred to as partners of men in supporting families. In this respect, women's contributions in terms of labour or money are easily regarded as non-economic, and thus relegated to the reproductive realm. Consequently, apart from their contribution in terms of family support, little is known about women's role in the wider economy, and their contribution in accumulating wealth.

In order to subscribe to fulfilling this gap in the artisanal fisheries subsector, the Programme for the Integrated Development of Artisanal Fisheries in West Africa (IDAF) planned and implemented a study on costs and earnings, and expenditure structures of fisherwomen, fish processors and fish traders. This report gives the results of the study conducted in Ogheye, Delta State, Nigeria.

1.2 Objective of the Study

The objective of the study was two-fold. First, to develop and implement cheap and viable research methods to study costs, earnings, and expenditure structures of women involved in the artisanal fisheries subsector. Second, to collect information on the following issues:

- investment costs and sources of fund
- operational costs and sources of funds
- income
- profitability of activities
- social obligations and the structure of expenses
- marketing channels
- the role and structure of socio-professional organizations

1.3 Structure of the Report

After this brief introduction and the methodology discussed in Chapter Two, Chapter Three describes living and working conditions of women in Ogheye. Both household characteristics and fishing and fishing-related activities are received. In describing the latter, a distinction is made between three combinations of activities; (a) fishing-processing-marketing, (b) fishing-marketing, and (c) processing-marketing. In each of these combinations different fishing methods and/or species have been taken into account. Chapter Four presents the mainly quantitative results on costs and earnings of the women, including investment costs, variable costs, fish prices, sales, net revenues, and profitability of their activities. After discussing the composition of their income, Chapter Five gives insight in their expenditure pattern and the way

they use the money that is at their disposal. A distinction is made between household expenditure; financing and investing in other people's activities; and savings and contributions. The section on savings and contributions also covers the structure and functions of socio-professional organizations. Finally, Chapter Six presents the conclusions.

2 METHODOLOGY

2.1 Study Area; Ogheye

This study has been conducted in Ogheye, a fishing village on the right bank of the Benin River (annex I). It is also the last settlement facing both the sea and the estuary in Delta State, which occupies the western part of the Niger Delta. It has a tropical climate characterized by two distinctive seasons; the dry and the rainy season. The dry season is from November to April, and the rainy season starts in May and lasts until October, with a brief stop in August, commonly referred to as the August break. From December to February, the dry Harmattan wind blows over the state. The average annual rainfall is 266.7 centimeters with an average temperature of 30°C (80°F). Ogheye is located on cleared red mangrove (*Rhizophora* sp) area. The salinity in the river channels is as low as 0.5-4 ppt. during the rainy season and 15-33 ppt. during the dry season. The surface water temperature in the mangrove area varies from 26°C to 28°C.

Ogheye has a population of 4,500 people (Nigerian Population Bureau, Census 1991), composed of four different tribes; Isekiri, Ilaje, Ijaw, and Uhorobos. Apart from Nigerians, a significant number of Ghanaians reside in Ogheye. However, an ethnic conflict between the Isekiri and the Ijaw seriously reduced both the population and the number of canoes at the time of the study. Since the beginning of the conflict in April 1997, most Ghanaians, part of the Ilaje, and the Ijaw left the place. The latter are hiding in a nearby river system. During the same period the number of canoes declined from 675 to 402 (350 planked canoes and 52 dugouts).

However, Ogheye was already selected as study site before the escalation of the conflict. The most important reason for selecting Ogheye was because of good research experiences in this village in the past. The people in Ogheye are receptive and accomodating when it comes to data gathering for research purposes, partly because the village has often been a site for pilot projects of both the Nigerian government and international agencies.

2.2 Selection of Respondents

The respondents were selected through a short pilot survey in the village. This survey showed that women are involved in three combinations of activities; (a) fishing-processing-marketing, (b) fishing-marketing, and (c) processing-marketing. Within each of these categories different fishing methods and/or species can be distinguished. Apart from prawn fishing, the sample selected represents all combinations of activities observed at the time of the study. Table 1 gives an overview of the composition of the sample.

Table 1 Composition of the sample

	Number of Women in the Sample	In Percentage of Sample Size
Fishing - Processing - Marketing		
gillnet + hook and line	3	10%
crayfish (conical trap)	1	3%
Fishing - Marketing		
periwinkle	1	3%
crab ("bicycle wheel")	5	16%
Processing - Marketing		
fish	12	39%
crayfish	6	19%
periwinkle	3	10%
TOTAL	31	100%

Although most women in Ogheye are involved in fishing, processing and marketing, a relatively small number of them is represented in the sample. This is explained by the relatively low level of fishing activities due to the ethnic conflict. For the same reason, prawn fishing is not represented in the sample.

2.3 Methods of Data Collection

Data have been collected from 3 June to 4 July 1997. Research methods have been mostly participatory, meaning that women actively participated in the process of data collection. Apart from a literature review, research methods consisted of questionnaires with structured and open questions for both fisherwomen (annex II) and fish processors (annex III), daily report sheets (annex IV and V), group discussions, and the observation of women's activities. Women of the Eghoroke Better Life Society participated in several group discussions and they served as intermediaries between the researchers and women in Ogheye.

The questionnaires have been used to collect data on household characteristics, fishing and fishing-related activities, marketing channels, financial arrangements between women and fishermen, and the operations and role of socio-professional organizations. The daily report sheets aimed to collect daily information on costs and earnings of women's fishing and fishing-related activities and on their use of income. Observations and measurements were made to cross-check data obtained through the questionnaires, daily report sheets and group discussions.

2.4 Extrapolation of the Results

As already mentioned, this study is based on data collected for a month period in the low season. Most women's activities were on a relatively low level, except crayfish fishing. Another

factor that affected the volume of catch landed and hence the processing and marketing output during this month is the ethnic conflict between the Ijaws and the Isekiri, afflicting the area since April 1997. Women are afraid to spend long hours on the water either to fish or to travel to sell their product elsewhere. Besides, since the Ijaw, the Ghanaians and part of the Ilaje have moved from Ogheye, they could not be included in the study.

It must be realized that this low level of activity has clearly influenced the results of the study. Apart from exceptionally low monthly sales, net revenues and profitability rates of women's activities presented in Chapter 4, the low level of activity is expected also to be reflected in women's household expenses, savings and contributions, and finance and investment strategies presented in Chapter 5. Therefore, extrapolation of data has been avoided as much as possible.

3 WOMEN IN OGHEYE

The population of Ogheye consists of about 785 adult women (Nigerian Population Bureau, 1991). All of them are involved in fishing and fishing-related activities. In fact, it is their major source of income. Apart from fishing, processing and marketing of fish and fish products, women play an important role in buying and selling their husband's catch, as well as the catch of other fishermen. Furthermore, women are responsible for household activities, such as the preparation of food, cleaning of the house and child care. They also play an important role in maintaining social networks at family, neighbourhood and community level.

3.1 Household Characteristics

The household size of the women interviewed ranges from 6 to 34, including their husband, their children, co-wives, relatives, and other children. These figures apply to women of different marital status. Sixty-five (65) percent are married, 10% are divorced, 10% are widowed and 15% are single. Among the women that are married, 68% have one or more co-wife(s). Forty-five (45) percent of the women are their husband's first wife, 45% are their husband's second wife, while 10% of them take the position of third or fourth wife. On average, women have 6 children of their own.

Apart from their involvement in fishing and fishing-related activities, women are responsible for household activities and satisfying household needs. Men are expected to contribute in cash or in kind, to providing initial capital for women to start their own economic activities, and/or to sell their catch to their wives. In fact, only 32% of the women in the sample receive household contributions from their husbands, in 25% of the cases the husband actually provided the starting capital for the women's businesses, and more than 50% of the women buy fish from their husband on credit and/or against a favourable price. In most of the other cases, at least one of the fishermen women buy from is a relative.

In practice, many households are male headed but female dominated. Most household decisions are taken by the first wife. She controls the distribution of her husband's catch to his wives and she allocates shares of his contributions in cash and in kind to her co-wives, according to their position and the number of children. All women in the household are responsible for feeding and clothing their own children. In case women are single, divorced or widowed, and in

case husbands do not make household contributions (68%), women bear all financial responsibilities towards their household.

3.2 Fishing and Fishing-Related Activities

Three combinations of fishing and fishing-related activities of women can be distinguished; (a) fishing-processing-marketing, (b) processing-marketing and (c) fishing-marketing. Apart from this, most women finance or invest in other people's activities by supplying inputs. This section describes women's activities in each of these combinations.

3.2.1 Fishing - Processing - Marketing

Most of the women in Ogheye are involved in fishing, smoking as well as marketing activities. These women fish, smoke their own catch and sell it. Apart from processing their own catch, most of them buy fish in addition. In fishing, women target fish (species), prawns and crayfish, using gillnets, hook and line, shelters, screens and different types of traps. All fishing methods, except that of prawns, are covered in the sample.

Gillnet

Gillnet fishing requires a 9 or 12-planked canoe (canoe consisting of 9 or 12 planks), a 25Hp engine, fishing gear and a crew of 2-3 people. Women use gillnets with varying mesh sizes (6, 9 or 12 inches). They go out fishing twice a day, in the morning (4h-11h) and in the afternoon (15h-19h). Species targeted depend on the season; demersal species during the rainy season and pelagics during the dry season. In the rainy season women fish close to the shore while in the dry season they go much further out to sea. On these long trips, most women do not take an active part as crew members, since they are too busy smoking fish onshore.

Hook and line

Hook and line fishing is combined with gillnet fishing. This fishing method is either used at the same time or alternated with gillnet trips. Except for the fishing gear, hook and line fishing requires the same equipment as gillnet fishing. Species landed by gillnet and hook and line units are Croacker (*Pseudotolithus* sp), Snapper (*Lutjanus* sp), Grunt (*Pomadasyd* sp), Shiny nose (*Polydactylus quadrifilis*), Catfish (*Arius* sp), Grouper (*Epinephelus* sp), and Barracuda (*Sphyraena* sp).

Crayfish

Crayfish (*Nematopalaemon hastatus*) can be found in high salinity river mouths, large creeks and coastal waters of about 15 ppt. They are most abundant during the months of June-November with peaks between July and August. However, crayfish occurs throughout the year in smaller quantities (Marioghae, 1980).

The fishing equipment and materials of women involved in crayfish fishing consists of a dugout canoe and conical traps, locally called "ekobi", which are made of cane using synthetic twine to hold it together. The number of conical traps owned by women varies between 20-60. The traps are set at low tide, near the river bank and retrieved during high tide. They can also be

used in the creeks. It must be noted that the equipment and materials used by men targeting crayfish are different. Most of them use active stow nets, requiring a 9-planked canoe and a 25Hp engine.

Prawns

In Ogheye, prawns (Macrobrachium vollenhovenii, Macrobrachium macrobrachion and Desmocarid sp) can be found in the brackish water creeks with a peak season between November and March. Smaller quantities occur throughout the year. In the main channel, prawns can only be found in the period from April to June (Powell, 1982).

—Prawn fishing requires either fence traps or shelters, baskets, and a dugout canoe. Fences are erected along the banks of the river, the traps are placed at intervals. The traps are inspected and emptied twice a day at low tide. Women in Ogheye widely use so called “basket traps”, requiring a relatively large dugout canoe. Each canoe carries water hyacinth (Eichornia crassipes), stakes, palm fronds or any type of leave, to provide shelter or shade for the prawns to hide. The plants, leaves or fronds are coralled at the river banks. A woman can own up to 20 of these shelters. In order to collect the prawns, the shelters are lifted gently, held over a receiving basket and shaken vigorously to dislodge the catch.

3.2.2 Fishing - Marketing

Women involved in fishing and marketing deal with either periwinkle (Tympanotonus fuscata/radula, Tympanotonus fuscata, and Pachymelania aurita) or crab (Callinectes amnicola, Ocypode africana, Sersama sp, Ocypode africana). Periwinkle picking only requires a dugout canoe and long hours of bending, picking and selecting the shells. Undersized shells reduce the market value. During the rainy season, women pick between 67 and 113 kilos per day. Fresh periwinkles are stored in bags, and covered with fresh leaves that are watered occasionally for moisture retention. They are sold at creek junctions to avoid offloading and loading in the village.

Crab can be found in the mouth of the estuaries and in the main river channel. They occur throughout the year with two peaks; from June to October in the main channel and from April to December in the creeks. Crab is most expensive in December when the females are producing eggs.

Crab fishing requires a dugout canoe and so called “bicycle wheels”. These, a ringed wire or the middle of a two hundred liter drum, are used with discarded fishing net attached to them. Since in Ogheye crab fishing is a popular activity, nets are designed to stretch across the circumference of the wheel or ring. A twine is tied to the circular frame and attached to a float or lead line. The traps are baited with fish, but the most effective bait is a piece of chicken or a dead rat. The number of traps women own ranges between 5 and 20. They drop the trap singly into the water attached to the float, at well spaced intervals. After dropping all the traps, women go back to the first to start lifting and inspecting. This cycle continues until they take a break, and remove the traps from the water. If women leave the traps without watching, the crab will take the bait and swim away with it. The whole operation is carried out by walking in the water near the river banks, or occasionally from a dugout canoe in the middle of the river.

Catch rates vary according to the season. During the high season women catch 120-180 kilogrammes per day, in 4-6 hours fishing. During the low season 60-90 kilogrammes are landed (National Agricultural Research Project, 1996). Crabs are stored in baskets and covered with fresh leaves to reduce the direct effect of the sun and to minimize dehydration. They are sold in Ogheye to buyers from Koko, Sapele, Warri or even Benin City.

3.2.3 Processing - Marketing

The third combination of activities consists of fish processing and marketing. Women involved in these activities buy fresh fish to process and sell afterwards. In Ogheye, fish processing mainly refers to the smoking of fish. The fish smoked consists of species from gillnet and hook and line units (during the rainy-season these are mainly demersals), trawler by-catch, and crayfish.

Before smoking, demersal species are cut into equal pieces and placed on a drying rack. Several layers of fish can be placed on one oven. During smoking, the fish is covered on the top and the four sides with straightened drums. The fire place, which is open, is covered with four pieces of zinc roofing sheet. On average, women own four ovens which have to be watched by one or two persons, depending on the quantity and type of fish being smoked. The fish has to be turned over at intervals to avoid charring of the product. Smoking large species takes 4-6 hours.

Crayfish smoking requires more preparations than the smoking of demersals. They have to be washed first to remove sand and other debris. After washing, women spread out the crayfish on a raised mat for excess water to drain out and sun drying. During smoking, the fire is not continuous. They only build it with intervals. The crayfish and the fire place are covered with zinc to retain the heat. Once the heat becomes too intense the sides are uncovered to release excess heat and to avoid burning. Smoking crayfish takes 2-4 hours of expert tending of the fire. Smoked crayfish is stored in bags and kept on a rack in the smoking unit, with occasional fires to avoid deterioration. Most of the product is sold in Ogheye, or customers collect their product in Koko, Sapele or Warri. In this case, customers bear the cost of transportation and handling charges.

Unlike the processing of demersals and crayfish, periwinkle processing does not require a smoking unit. Periwinkles are parboiled to loosen the muscles from the shell and to allow for easy extraction with a needle. Processed periwinkle is sold in cups.

4 COSTS AND EARNINGS

4.1 Investment Costs

To estimate the investment costs of women's activities, current market prices of the different items were used as reference. Table 2 and 3 show the investment costs of fishing units and smoking units respectively.

Table 2 Investment costs of the different fishing units (in ₺*)

	Investment Costs				
	planked canoe	dugout canoe	fishing gear	engine (25 hp)	TOTAL
gillnet	21 000	-	14 500	130 000	165 500
hook and line	21 000	-	4 000	130 000	155 000
crayfish (conical trap)	-	3 500	1 500	-	5 000
periwinkle	-	3 500	-	-	3 500
crab ("bicycle wheels")	-	3 500	500	-	4 000

* 1 US\$ = ₺ 85

The investment cost of fishing units varies from ₺3,500 to ₺165,500, depending on the type of gear used. Investment costs are highest for gillnet (₺165,000) and hook and line units (₺155,000). This can be easily explained by the fact that these are the only fishing units operated by women, equipped with a planked canoe and an engine. Besides, the gillnet is a relatively expensive gear. All other fishing activities of women are characterized by much lower investment costs, requiring only a dugout canoe and relatively cheap fishing gear. Investment costs are lowest for periwinkle picking (₺3,500) which does not require any fishing gear at all, meaning that women only need a dugout canoe for their operations.

Apart from demersal and pelagic species targeted by gillnet and hook and line units, crayfish is also targeted by both women and men. However, women exclusively engage themselves in the low cost alternative, using conical traps that only require a dugout canoe, while men use active stow nets requiring a planked canoe and an engine. In case women own stow net units, they prefer to hire them out to men.

A gillnet and hook and line fishing unit consists of at least one 9-planked canoe, at least one engine, one or more gillnets and about 200 hooks with a life span of 7, 5, 4 and 2½ years respectively. The life span of the smaller gears used varies from 4 months for conical traps, 2 years for the traps attached to fences, to 3 years for "bicycle wheels". A dugout canoe generally lasts for about 7 years.

The investment cost for fish processing is constituted by the cost of a smoking unit on average containing four ovens and the cost of a dugout canoe to transport fish to and from the market. Table 3 shows the investment cost of fish processing and marketing.

Table 3 Investment cost of fish processing and marketing (in ₦*)

	Investment Cost (IC)	Life Span		
		In Years	In Months	IC/Month
wooden structure	400	8	96	4
zinc for the roof (½ bundle)	2 500	2	24	104
wire (½ bundle = 12)	2 000	2	24	83
math	600	½	6	100
drums (16)	11 200	2	24	466
zinc to cover the sides (16)	3 200	2	24	134
sticks	1 000	1	12	83
costs of labour	1 000	-	-	-
dugout canoe	3 500	7	84	42
baskets (4)	600	¼	4	150
TOTAL	26 000	-	-	1166

* 1 US\$ = ₦ 85

Since most women are involved in several activities at the same time, three combinations of activities have been distinguished: fishing-processing-marketing; fishing-marketing; and processing-marketing. Table 4 gives an overview of the total investment cost of different combinations of fishing and fishing-related activities. If the cost of a dugout canoe is already included in the smoking unit, it is left out in calculating the investment cost of the fishing unit (like in the case of the fishing, processing and marketing of crayfish).

elsewhere, it is often their customers who bear the cost of transportation. This explains the low cost of marketing.

The total variable cost is highest for processing and marketing crayfish (₦230,553). Second are gillnet and hook + line units (₦126,631). In the first case it is mainly the quantity of fish bought for smoking that results in the high figures, while in fishing the high figure is due to high expenses on fuel. In the case of processing and marketing only, it must be noted that most women are involved in different arrangements that entitle them to buy fish on credit (see section 5.4). The variable cost is lowest for fishing and marketing; ₦40 for crab, while periwinkle fishing and marketing has no variable cost at all.

4.3 Sales

The monthly sales in women's activities depend on the total catch, quantity of fish bought, and the prevailing price of fish. The total monthly sales for each combination of activities are given in Table 6.

Table 6 Monthly catch, quantity bought, prices per kilo and monthly sales for the different combinations of women's activities

	Monthly Catch (kg)	Quantity Bought (kg)	Buying Price Per Kilo (in ₦*)	Selling Price Per Kilo (in ₦*)	Monthly Sales (in ₦*)
Fishing - Processing - Marketing					
fish	3 267	392	57.7	75.61	276 657
crayfish	339	-	-	45.52	15 430
Fishing - Marketing					
periwinkle	5 710	-	-	2.13	12 200
crab	956	-	-	16.17	15 460
Processing - Marketing					
fish	-	3 230	17.37	22.83	73 754
crayfish	-	4 333	49.8	60	260 000
periwinkle	-	1 707	3.75	6.25	10 667

* 1 US\$ = ₦ 85

The monthly sales are highest for women involved in fishing, processing and marketing of fish (₦276,657) and the processing and marketing of crayfish (₦260,000). Both cases are mainly due to the high quantities processed and the relatively high selling price. It must be noted that compared to these two activities the monthly sales in fish processing and marketing are relatively low. This is mainly due to the low selling price. The difference in selling price between fish sold by women involved in fishing themselves and women who are not can be explained by the species processed. In the first case, women mainly process their own catch (gillnet + hook and

line). In the rainy season (May-October) their catch consists of demersal species, such as croacker, snapper, shynose, catfish, grunt and grouper. In the dry season (November-April) gillnet fishing units mainly target pelagic species, such as sardinella and bonga. Most women involved in processing and marketing during the rainy season mainly rely on trawler by-catch, consisting of juveniles of species mentioned above and many others. These are generally small fishes not exceeding 35 centimeters. Monthly sales are lowest for women dealing with periwinkle, either processing and marketing (₦10,667) or fishing and marketing (₦12,000). This is mainly due to the very low selling price per kilo.

Finally, it must be noted that selling prices refer to wholesale prices. When women would take their products elsewhere, prices are higher. At the time of the study crab, for example, gained about ₦850 per bag (35 kilo) in Koko, Sapele or Warri, which is equivalent to more than ₦24 per kilo. Comparing this price to the ₦16.17 in the table above, selling outside Ogheye is rather profitable, but due to the ethnic conflict, women are not eager to travel.

4.4 Returns on Labour and Capital

The total monthly revenue of women is equivalent to the value of the catch and/or processed fish sold. The net revenue of women is the total revenue minus the variable and monthly depreciation costs. The monthly profit from or profitability of women's economic activities can be defined by their monthly net revenue divided by the investment cost. The investment cost refer to the replacement costs of fishing equipment and material (see Table 2,3 and 4). Table 7 shows the monthly net revenue of women and consequently, the average profitability of their economic activities.

Table 7 Average net revenue of women (in ₦*) and profitability rates of their activities

	Women's Average Monthly Net Revenues	Women's Yearly Net Revenues (extrapolation)	Monthly Depreciation	Profitability (%)
Fishing - Processing - Marketing				
gillnet + hook and line	143 995	1 727 940	6 031	4.5
crayfish	12 039	144 468	1 541	5.2
Fishing - Marketing				
periwinkle	12 158	145 896	42	41.7
crab	15 364	184 368	56	46.1
Processing -Marketing				
fish	12 217	146 604	1 166	5.6
crayfish	28 281	339 372	1 166	13
periwinkle	4 225	50 700	42	14.5

* 1 US\$ = ₦ 85

Profitability rates range from 4.5% for women involved in gillnet fishing, processing and marketing to 46.1% for women fishing and marketing crab. The relatively high rates in fishing and marketing periwinkle and crab must mainly be attributed to low investment costs and thus low monthly depreciation costs. Looking at the other figures suggests that the higher the investment cost of the activity, the lower the profitability rate. During the rainy season investment costs become relatively high in relation to production levels. This explains the relatively low profitability rate for gillnet and hook and line operations. However, cash flow analysis suggests that these can be easily compensated during the high season. Gillnet and hook and line units have an average monthly cash flow of ₦150,026 which is about fifteen times more than the monthly cash flow in the other combinations of activities.

— The profitability rates in the table are based on an extrapolation to one year from figures collected during one month in the low season (June 1997). This surely does not give a representative picture of the level of women's activities throughout the year. In gillnet fishing, for example, the inland water pushes marine species far away to sea during the rainy season. Instead of taking the risk of wasting a lot of fuel, women prefer to stay close to the shore and target demersal species. Due to the low level of gillnet production, fish processors and fish traders rely on trawler by-catch, resulting in relatively low selling prices. Periwinkle picking becomes difficult during the rainy season due to the high water level. Women can either not reach the periwinkle or they can hardly see them, which makes selection difficult.

Apart from the rainy season, the ethnic conflict between the Ijaw and the Isekiri also contributes to the relatively low level of activity. Women are afraid to go out on the water, either to fish or to sell their product. This affects both production levels and selling prices. This is clearly shown in the production of crayfish. Despite its abundance during the months of June-November, women in the sample set out, on average, only 5 conical traps. However, an earlier study shows that they own between 20 and 60 traps. Women argued that they are afraid to set out more and spend the whole day on the water setting and inspecting their traps.

5 USE OF INCOME

5.1 Composition of Women's Income

Apart from women's revenues out of fishing and fishing-related activities, the money they have at their disposal to continue economic activities and to fulfil household responsibilities, constitutes the following elements: revenues from additional sources of income; credit; contributions from their husband (in cash and in kind); and revenues from financing and investment in other people's fishing activities (in kind). Table 8 gives an overview.

Table 8 *Composition of women's income*

	Average Monthly Revenues of Women (in ₦*)
Average monthly revenues from additional sources	529
Credit	613
Husband's contribution to the household budget	1 191
Returns from financing and investment in fisheries	fish
TOTAL	2333 + fish

* 1 US\$ = ₦ 85

Eleven (11) women in the sample have revenues from additional sources. More than 50% of them are involved in petty trading, one is selling wrappers, one runs a filmhouse and provides lodging facilities, and another is a teacher. Their revenues vary from ₦200 to ₦7,000 monthly with an average of ₦2,733, resulting in a sample average of ₦529. Only four (4) of the 31 women interviewed had borrowed money recently, varying from ₦2,000 to ₦10,000 with an average of ₦4,750. This results in a sample average of ₦613.

Credit refers to personal loans women took. This applies to only 4 women in the sample (13%). Three of them borrowed money from the thrift collector they regularly save with, and one woman took a loan from her society (see section 5.5). The amounts borrowed vary from ₦2,000 to ₦10,000. All but one loan have to repaid within six months, and interest rates vary from 1 to 20% per month. It must be noted that buying fish on credit is not included in the figure.

Husband contribution is reported by only 32% of the women. This contribution can be in cash, in kind or both. Contributions in kind are fish, known as the family ration that fishermen often put aside. The figure in the table includes quantities of fish contributed (converted to money). Contributions vary from ₦1,000 to ₦10,000 with a sample average of ₦1,190.

Returns from financing and investment in other people's activities are in kind. In fact, this is the main reason for women to involve themselves in these type of arrangements; to guarantee fish supply on credit. These arrangements are described in detail in section 5.4.

5.2 Household Expenses

Apart from their economic activities, women are responsible for household chores and household expenditure. As shown in the section above they use their own money, eventually complemented by contributions of their husbands. Table 9 shows the average monthly household expenses of the women.

Table 9 : Average monthly household expenditure (in ₦*)

	Monthly Expenditure		
	Number of Women	Average Spending per Woman	Sample Average
Food	31	4 176	4 176
Education	13	434	181
Pocket money	21	608	412
Clothing	31	342	342
Rent	4	500	64
Drinks	31	334	334
Relations	6	3 892	753
Repayment of loan	4	264	34
TOTAL	-	-	6 296

* 1 US\$ = ₦ 85

Expenditures on food are the highest, ranging from ₦1,320 to ₦11,200 per month. Second is expenditure on relations, in most cases mothers. Nineteen (19) percent of the women interviewed spend money on relations. The amounts spent vary from ₦500 to ₦6,600 with an average of ₦3,892, resulting in a sample average of ₦753.

Forty-two (42) percent of the women interviewed bear the cost of education of their children, consisting of school fees and books. In the other cases, women do not have school-going children or it is their husbands who pay school fees and books. The amount spent varies from ₦250 to ₦1,120. Pocket money, which is given to school-going children to spend by themselves, is mostly on women's account and is provided for by 68% of the women interviewed. This amount ranges from ₦80 to ₦1,600 per month, with an average of ₦608, resulting in a sample average of ₦412.

All women spend money on drinks. Apart from soft drinks, a considerable amount of money is spent on alcoholic drinks, such as beer and illicit gin (locally called "ogogoro", "akpeteshe" or "kiki"). The amount spent ranges from ₦120 to ₦660, with an average of ₦334.

5.3 Working Capital

Women have to finance the variable cost of their activities or reserve money as working capital. The amount of working capital needed varies per combination of activities. The average monthly working capital needed for women's activities is given in Table 5. To show the importance of this part of women's expenses, especially in fishing and/or processing and marketing, and thus its impact on managing daily money affairs, the variable cost of each combination of women's activities are expressed as a percentage of the total sales (see Table 10).

Table 10 Average monthly variable costs of women's activities in percentages of total sales

	Average Monthly Variable Costs (in ₣*)	Average Monthly Variable Costs/ Total Sales (%)
Fishing - Processing - Marketing		
gillnet + hook and line	126 631	46
conical trap (crayfish)	1 850	12
Fishing - Marketing		
periwinkle picking	0	0
"bicycle wheels" (crab)	40	0.3
Processing - Marketing		
fish	60 371	89
crayfish	230 553	89
periwinkle	6 400	60

* 1 US\$ = ₣ 85

5.4 Financing and Investment in Fisheries Activities

Apart from household expenses and working capital, women have several strategies to finance or invest in other people's fishing activities. The main objective of these arrangements is to guarantee the supply of fish under favourable conditions. Therefore, the return is always in kind. Their most important strategies are (a) the supply of fishing equipment and materials, (b) family arrangements, (c) money lending, and (d) the provision of fuel.

Supply of fishing equipment and materials

In Ogheye, many fishing units operated by men rely on the supply of fishing equipment and materials by women. Depending on the needs of the fisherman that operates the unit, women supply either a whole fishing unit (a canoe, fishing gear, and an engine) or they supply only the gear or the engine. It must be noted that the equipment and materials remain hers. Everytime the fisherman lands his catch, she will be at the landing site to collect her share. Two out of 3 women in the sample owning one or more 9-planked canoes, gillnet(s) and engine(s) have such arrangements with fishermen.

When a woman supplies a whole fishing unit, she gets $\frac{2}{3}$ of the catch. The remaining $\frac{1}{3}$ is allocated to the crew of 2-3 people. Apart from her own share she has priority to buy the share allocated to the crew. When she supplies only the gear or the engine, she receives $\frac{1}{3}$ of the catch while $\frac{1}{3}$ is allocated to the owner of the canoe and $\frac{1}{3}$ to the crew. She also has priority to buy the remaining shares.

Family arrangements

Family arrangements usually start very simply. A man owns a fishing unit (gillnet or active stow net), goes out fishing, and sells his catch on credit to his wife. Payment takes place as soon as his wife sells the fish, either fresh or dry. Men provide a family ration of fish plus some supplements in cash or in kind, depending on their cultural background. The money women earn by selling the fish is theirs. They usually spend part of it to complement household needs for food.

When fishermen need to replace their equipment or materials, they first turn to their wife. According to the women interviewed, men cannot save money. Most of them are polygamous and they prefer to spend their money on mistresses, drinks, etc. Women will usually agree to bear the cost of replacement of equipment, as long as they are entitled to buy the whole catch. In this case men are not expected to repay. This brings their activities close to a family enterprise which is very common among the Ilaje.

When a fisherman marries a second wife, the first wife refuses to finance her husband's activities. As already described, fish landed is sold to the fisherman's wife. If there is more than one wife, the catch has to be shared, which makes the first wife reluctant to continue investing in her husband's fishing activities. Not only because it makes her investment less profitable but also because a second or even third wife will benefit from her efforts without putting in any themselves. On the other hand, second or third wives will never finance their husband's fishing activities because the larger part of the catch always goes to the first wife. As a result, both the first wife and the second or third wife will prefer to invest their money in other men's fishing activities by supplying them fishing equipment and materials under conditions as described above.

Finally, it must be noted that such a family arrangement does not limit women to the catch of their husbands. They can buy from or invest in other fishermen's operations, unlike the fishermen who are always "obliged" to sell their whole catch to their wives.

Moneylending

If fishermen are not able to finance their activities and cannot rely on family arrangements, they might decide to borrow money, mostly from women. Thirty (30) percent of the women involved in fish processing and marketing offered this service at the time of the survey, requesting for repayment in fish. From the moment she lends out the money, she sets the price of the fish her debtor lands until the loan is recovered. She will not charge interest, but the price she sets is generally low, enabling her to make large profits.

In addition, by setting a low price she ties up the fisherman who, over a long period of time, is obliged to "sell" his catch to her without collecting any money in return. Although she might let him keep some fish for his family and to pay his crew, a fisherman in this position is

financially vulnerable. During this period, when the fisherman needs financial assistance, she will willingly give another line of credit/loan to continue the supply of fish to her.

Provision of fuel

The provision of fuel mostly concerns the purchase of trawler by-catch. At the time of the survey, almost 50% of the fish processors interviewed relied on trawler by-catch. Since most women generally lack money to pay for the quantity of fish they need in advance, 5 or 6 of them put money together to provide the trader with fuel in addition to an advance. If the trawler is not too far, the fuel will guarantee them the supply of fish for about two weeks. The provision of fuel allows women to buy at least part of the fish on credit. Full payment takes place after the fish has been smoked and sold.

5.5 Savings and Contributions

Finally, women spend a considerable amount of money on savings and contributions of different kinds. Most savings are made with osusu groups or "thrift collectors" and contributions are made to societies, family ceremonies and churches.

Osusu groups are rotating savings and credit associations. Osusu groups joined by women in the sample have 10-22 members. They meet daily, weekly or monthly to contribute a certain amount of money. By turn, each member receives the sum saved for a given period. When the cycle is complete, they start all over again. A "thrift collector" can best be compared to a mobile banker. He (most "thrift collectors" are men) passes daily, weekly or monthly, depending on the arrangement, to collect an agreed amount of savings. Records of the amount deposited are kept. Women can retrieve their money anytime they want. Depending on their mode of savings, women owe their thrift collector a part of the amount of money saved. Women who save daily owe him one day's savings every eighth day, and for weekly savings, women owe 1/7 of their savings per week. Women making monthly deposits have individual arrangements, depending on the term and the amount of money deposited.

The main objective of societies is to provide social, financial and moral support to its members. In Ogheye, three types of societies can be distinguished: age groups; meeting groups; and elitist groups. Age groups consist of women of the same age. These can also be sub-groups of societies. Meeting groups consist of women sharing common goals or characteristics. The Eghoroke Better Life Society (section 2.3) is an example. The "high status women" are members of more elitist groups. In Ogheye, these are the big fish mammals. Their monthly contributions are significantly higher than those of the other societies. Societies are usually well organized. All of them have an elected president, vice president, general secretary and treasurer. An agenda is prepared for every meeting.

Societies meet monthly in the house of one of the members. This is also the day that monthly contributions are collected. During these meetings, food and drinks are served and often there is music or another kind of entertainment. The expenses are paid by the society (out of the monthly contributions of the members), and the role of hostess rotates. One of the most important points of the agenda is to review activities of members, social and professional. For professional matters, the society disburses loans from the society fund. In the case of marriage, birth or death in a family, the society pays a fixed sum, depending on the event. In this respect, a society serves

as an insurance agency. Furthermore, members decide on how to provide moral assistance, which is being present at the event and whenever the need arises. For these occasions, society members often wear specially designed clothes, depending on the society's funding capacity.

All women contribute to family ceremonies. This can be marriage, birth, death, etc. Depending on their position in the family, women are expected to contribute a certain amount of money. Apart from that there might be a special dress that is to be worn during the ceremony, and they have to buy the material and pay for the sewing.

Finally, some women contribute to church. There are several contributions; church societies, offerings, tithing and goodwill. Contrary to the other types of savings and contributions, contribution to churches does not have a clearly defined economic or financial purpose. According to the women interviewed, they contribute to church to fulfil their religious obligations and thus to be righteous and good Christians; to ensure their souls to go to heaven; and to have a good Christian burial when they die.

Table 11 gives an overview of average monthly contributions and savings of the women. Since not all women save or contribute to the institutions described above, a distinction is made between the sample average and the average among women contributing.

Table 11 Average monthly contributions and savings (in ₦*)

	Society	Family Ceremonies	Osusu	Church	TOTAL
Number of women contributing (NWC)	17	31	21	13	-
Total Amount Contributed (TAC)	9 331	17 213	42 500	3 400	66 590
TAC/NWC	549	555	2 024	262	-
Average Contribution per Woman in Sample	301	555	1 371	110	2 290

* 1 US\$ = ₦ 85

The highest amount is reserved for savings. Sixty-eight (68) percent of the women in the sample save with an osusu group or "thrift collector". Amounts saved vary from ₦100 to ₦7,000 per month with an average of ₦2,024. Apart from saving with an osusu group or "thrift collector", capital accumulation takes place by investing in fishing equipment and materials, saving money in the house or by converting money into jewellery (gold), coral beads, wrappers (Dutch wax), and other items that do not lose value. However, these items are hardly converted back into cash money. Women rather use them as gifts or as social payments, for example, as gift to their daughters when they get married.

Second are contributions to societies and family ceremonies, although part of the contributions to societies are indirectly spent on ceremonies. Societies only contribute to ceremonies in which their members are expected to bear a considerable part of the responsibility and costs. All women spend on family ceremonies and more than half of the sample contribute to

societies. Contributions to family ceremonies vary from ₦100 to ₦1,600 per month with an average of ₦555. Contributions to societies range between ₦200 and ₦1,700 per month with an average of ₦549 resulting in a sample average of ₦301.

Contributions to church represent the smallest part of women's contributions; less than half of the women contribute to churches. The average contribution is ₦262 per month, resulting in a sample average of ₦110.

5.6 Remarks

In order to assess the total monthly amount of money that is at the women's disposal (women's cash flow), depreciation costs, average additional income (revenues from additional sources of income, credit, and contributions from their husband) have been added to women's monthly net revenue from fishing and fishing-related activities. The figures are given in Table 12.

Table 12 Women's monthly cash flow (in ₦*)

	Monthly Net Revenue	Monthly Depreciation	Average Additional Income	Cash Flow	Average Monthly Expenses, Contributions and Savings**
Fishing - Processing - Marketing					
gillnet + hook and line	143 995	6 031	2 333	2 359 15	8 586
conical trap (crayfish)	12 039	1 541	2 333	15 913	8 586
Fishing - Marketing					
periwinkle picking	12 158	42	2 333	14 533	8 586
"bicycle wheels" (crab)	15 364	56	2 333	17 753	8 586
Processing - Marketing					
fish	12 217	1 166	2 333	15 716	8 586
crayfish	28 281	1 166	2 333	31 780	8 586
periwinkle	4 225	42	2 333	6 600	8 586

* 1 US\$ = ₦ 85

** Excluding the cost of financing and investment in other people's fishing activities

The monthly cash flow varies from ₦6,600 for women processing and marketing periwinkle to ₦152,359 for women involved in gillnet + hook and line fishing, processing and marketing. Since household expenses and contributions to societies do not differ very much between the categories of women, one average is taken to calculate women's expenses. According to the table presented above, during the month of the study most women have had more money at their disposal than what they have spent, contributed, or saved.

However, no figures are available on the cost of financing and investing in other people's activities. While the benefits of financing and investment are included in the monthly net revenue of women, the cost is not. This explains at least part of the difference between women's net revenues and their expenses and contributions.

6 CONCLUSIONS

In general, the methodology applied in this study has been successful. The questionnaires, daily report sheets, group discussions and observations, generated most of the required data. However, women needed daily assistance to fill the daily report sheets which were meant to be distributed and collected weekly. This was mainly due to the fact that most of the women were not able to read and write. Since women's expenses are usually small and occur throughout the day, assistance was also needed to make sure that daily reports were complete. Furthermore, seasonality made a year's extrapolation on the data collected for one month impossible. Although the calculated profitability rates seem to be promising, figures during the high season are not known. One month study has also been too short to explain issues that came up during the study, for example, the gap between women's net revenue and their expenses.

Another important outcome of the study is the financial attractiveness of women's activities. Depending on the combination of activities, women's net revenues are high and the high profitability rates from low season data indicate huge profits during the high season. Margins are especially high for women who are involved in fishing. Contrary to women who are involved in processing and marketing only, they hardly spend money on buying fish which keeps variable costs relatively low. However, women who are not involved in fishing apply several strategies to guarantee fish supply under conditions that suit them.

Costs, earnings, and expenditure structures show that women's activities and responsibilities go far beyond providing household support or supplementing the household budget. Sixty-eight (68) percent of the women in the sample do not receive any contribution from their husbands. This means that most of them bear full financial responsibility for household needs. More than 50% of the women started fishing and fishing-related activities independent from others, either with personal savings or with a loan. Although most of them started with a small sum of money, their activities have now grown into relatively large, profitable enterprises. Women's involvement in financing and investing in fishing activities shows that they accumulate capital and indicates that they control a significant part of fishing activities in Ogheye.

Furthermore, the study revealed that socio-professional organization, varying from different types of arrangements with fishermen, societies (meeting groups, age groups, elitist groups) to osusu groups and "thrift collectors", plays an important role in women's social and economic activities. In fact, it is through socio-professional organization that women are able to manage their revenues and fulfil their financial obligations. Arrangements with fishermen guarantee fish supply and the continuity of women's activities. They also permit women to buy fish on credit and repay after smoking and selling the product. This means that women do not require huge amounts of cash to buy fish. They only think of payment when the money is there. Their position is even more advantageous when they own whole or part of the equipment and materials used by the fisherman. In that case they receive their share of the catch without any initial payment.

Membership of societies helps women to put aside money for unexpected events or incidental expenses, such as marriage, death, and birth. The savings serve as insurance. In addition, a society provides its members with professional assistance, for example, by issuing them loans. Finally, they have an important social function. Apart from the contribution element, the monthly society meetings are always cheered up with food, drinks and some kind of entertainment. Members take these monthly meetings as an opportunity to catch up on each other's activities, social and professional. Osusu groups or "thrift collectors" enable women to save money either for personal use or to buy fishing equipment or materials for fishermen. Due to household obligations and claims from relatives or friends, "surplus" money is easily spent. Apart from mobilizing savings, both osusu groups and "thrift collectors" offer loans to regular contributors, and that helps the women to replenish their disposable cash account.

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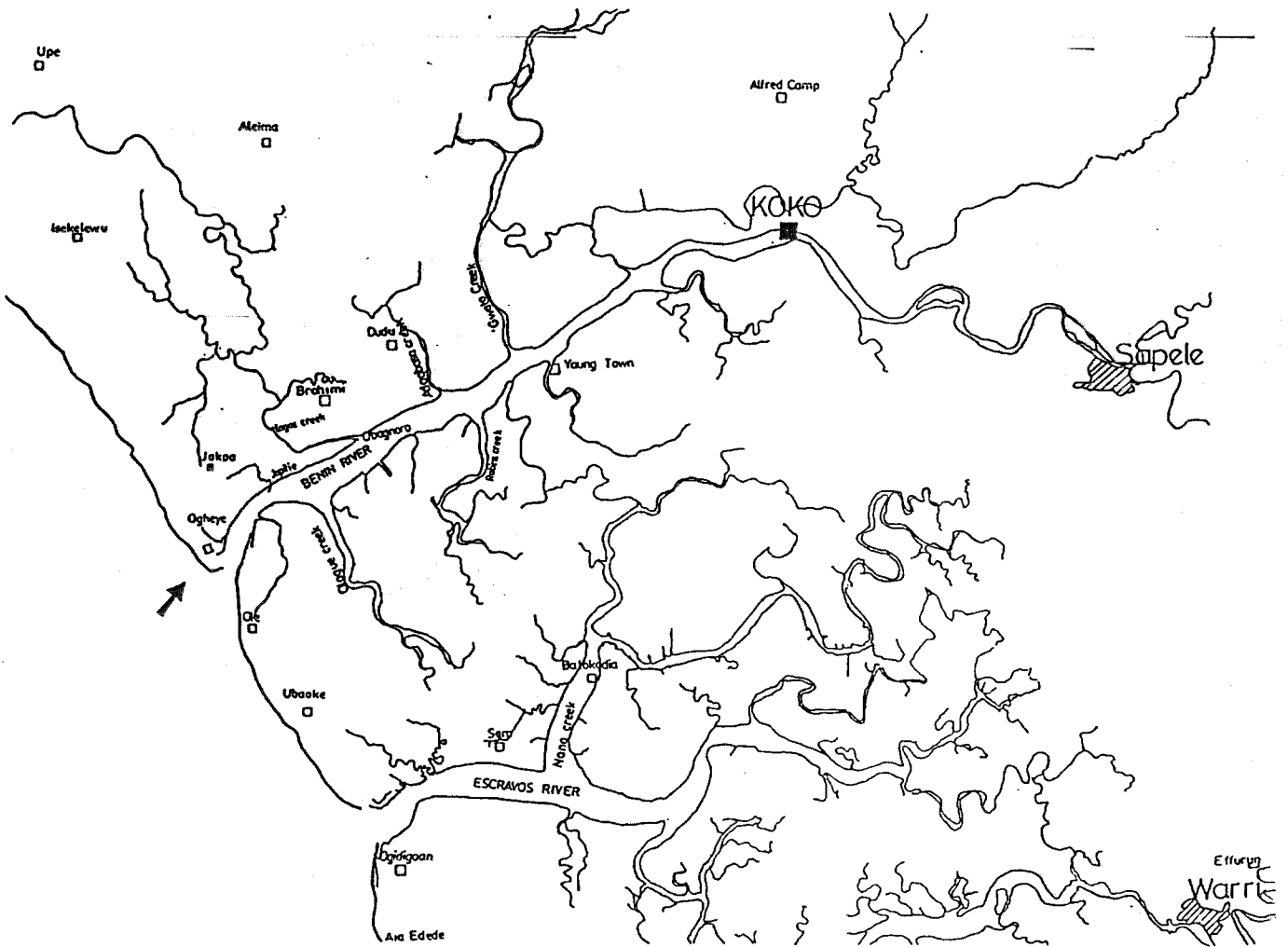
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Annex I Map of Ogheye



Annex II Questionnaire for Women involved in Fishing, Processing, and Marketing

- 1 Date: ...
- 2 Questionnaire No: ...
- 3 Name: ...
- 4 Age: ...
- 5 Where do you live: ...
- 6 Schools attended: None/ Primary/ Secondary
- 7 Marital status: _____ Single/ Married/ Divorced/ Widow
Position in the household: 1st wife/ 2nd wife/ 3th wife/ ...
- 8 a) Number of your children: ... b) Number of relatives in the house: ...
- 9 a) Number of other children: ... b) Number of other wives .
- 10 Number of people helping in fishing: ...
a) Relatives/ Hired Labour
b) Are they paid Cash/Kind
c) If cash, how much: ... If kind, what is the arrangement: ...
- 11 Number of people helping in processing: ...
a) Relatives/Hired Labour
b) Are they paid Cash/Kind
c) If cash, how much: ... If kind, what is the Arrangement: ...
- 12 How long have you been in fishing and marketing: ...
a) Where did you get the money to start: Relations/ Loan/ Personal Savings/ Others: ...
b) How much did you start with: ...
c) If loan, how much you have/had repay: ... For how long: ...
- 13 Do you belong to any cooperative society: Yes/ No
Which one: ...
- 14 Do you belong to any osusu (contribution) group: Yes/ No
a) How many groups: ...
b) Number of members: ...
c) Purpose: ...
d) Amount: ... / ...
- 15 Have you borrowed money recently: Yes/ No
From Money lender/ Society/ Osusu/ Other: ...
a) Purpose: ...
b) Repayment arrangement: ...

16 Do you own a boat: Yes/No

Type of Gear & Number	Cost	Year of purchase	Species Caught	Repairs and Maintenance	Frequency of Maintenance	Life Span
Ekobi						
Bicycle Wheel						
Gillnet						
Hook and Line						
...						
...						
...						

17 Do you go fishing yourself: Yes/ No How many times in a day/ week: ...

18 Species targeted: ...

19 Do you hire people to fish for you: Yes/No How many: ...

20 Do you have any arrangement with the hired fishermen: Yes/No
What is the arrangement/ sharing ratio: ...

21 Do you buy from your own boat: Yes /No

22 Do you sell from your own boat: Yes/No In cash/ credit

23 Do you sell from other boats: Yes/No In cash/ credit

If credit, what are the conditions: ...

24 How many mammies do you sell to: ...

Any special reason(s): ...

25 Is the fisherman your husband/ brother/ uncle/ hired labour?

26 Do sell your product fresh/ smoked?

Do you smoke all/ some/ none of your catch?

27 Do you cut/ buy your firewood

How much do you pay for a bundle: ...

28 How many oven(s) do you have: ... Zinc, ... Mud, ... Drying rack

16 Do you own a boat: Yes/No

Type of Gear and Number	Buying Price (fresh)	Selling Price (fresh)	Species bought/caught	Selling Price (smoked)	Species and Quantities Purchased
Ekobi					
Bicycle wheel					
Gillnet					
Hook and line					
...					
...					
...					

17 Do you smoke your product: Yes/No

18 What species do you smoke: ...

19 Do you hire people to fish for you: Yes/ No

20 Do you buy from your own boat: Yes/ No

21 Do you sell from your boat: Yes/ No Cash/ Credit

If credit, what are the conditions: ...

22 Do you sell from other boats: Yes/ No Cash/ Credit

If credit, what are the conditions: ...

23 How many fishermen do you buy from: ...

24 Do you have arrangements with fishermen: Yes/ No

a) How many: ...

b) what is the sharing arrangement /ratio: ...

25 Is the fisherman your husband/ brother/ uncle/ hired labour/ other: ...

26 Do you sell your product fresh/dry?

27 Do you cut/ buy your firewood

How much do you pay for a bundle: ...

28 How many oven(s) do you have: ... Zinc, ... Mud, ... Drying rack

29 Do you pay an assistant to help in:

a) Cutting firewood: Yes/No

b) Smoking fish: Yes/No

30 How much to dry:

Croaker: ...

Shiny nose: ...

Catfish: ...

Barracuda: ...

1 hand of Bonga: ...

1 Hand of Sawa: ...

1 kerosene tin of crayfish: ...

Other species: ...

- 31 How much do you spend on wood?
 a) Smoking fish: ...
 b) Smoking crayfish: ...
- 32 How much do you spend on
 a) Cloths: ...
 b) School fees: ...
- 33 Do you pay rent: Yes/No How much: ...
 Do you pay royalty? Yes/No How much: ...
- 34 Additional Sources of Income during
 a) Peak season: ...
 b) Slack season: ...
 c) Off season: ...
- 35 Contribution to Church (weekly/ monthly)
 societies: ...
 offerings: ...
 tithing: ...
 goodwill: ...
- 36 Contributions to ceremonies (marriage/ burial/ society)
 What was your contribution: ...

Annex IV Daily Report Sheet for Women involved in Fishing, Processing and Marketing

- 1 Date: Site: Respondent:
- 2 Where do you catch your fish/crab/crayfish/periwinkle?
 a ... b ... c ...
- 3 Earnings Table

Date	Type of Fish Caught	Quantity	Selling Price	Selling Price to Creditors	Number of Trips per Day
3-6-1997					
4-6-1997					
5-6-1997					
6-6-1997					
7-6-1997					
8-6-1997					
9-6-1997					
10-6-1997					
11-6-1997					
12-6-1997					
13-6-1997					
14-6-1997					
15-6-1997					
16-6-1997					
17-6-1997					
18-6-1997					
19-6-1997					
20-6-1997					
21-6-1997					
22-6-1997					
23-6-1997					
24-6-1997					
25-6-1997					

Date	Type of Fish Caught	Quantity	Selling Price	Selling Price to Creditors	Number of Trips per Day
26-6-1997					
27-6-1997					
28-6-1997					
29-6-1997					
30-6-1997					
1-7-1997					
2-7-1997					
3-7-1997					
4-7-1997					

4 Do you sell your product fresh/dry?

Fresh Products	Dried Products
Where do your buyers come from? Villager, Koko, Sapele, Warri, others ...	Where do your buyers come from? Villager, Koko, Sapele, Warri, others ...
Do you travel to sell your product: Yes/No, how many times per week ...	Do you travel to sell your product: Yes/No, how many times per week ...
Cost of transportation to Koko, Warri, Sapele ...	Cost of transportation to Koko, Warri, Sapele ...
Price of loading: ... Offloading: ...	Price of loading: ... Offloading: ...
Price of your product outside the village ...	Price of your product outside the village ...
Tax: ... Market Union: ... Levy: ... Local Govt: ...	Tax: ... Market Union: ... Levy: ... Local Govt: ...

5 Total amount of money made today from fisheries product: ...
From other, non-fisheries trade: ...

6 Contribution(s) by the husband towards daily house keeping:
In cash: ... In kind: ...

Annex V Daily Report Sheet for Women involved in Processing and Marketing

1 Date: Site: Respondent:

2 Earnings Table

Date	Type of Product/ Fish Purchased	Type of Gear	Price (wet)	Weight (wet)	Selling Price (smoked)	Purchased by Villager/ Creditor/ Outsider
3-6-1997						
4-6-1997						
5-6-1997						
6-6-1997						
7-6-1997						
8-6-1997						
9-6-1997						
10-6-1997						
11-6-1997						
12-6-1997						
13-6-1997						
14-6-1997						
15-6-1997						
16-6-1997						
17-6-1997						
18-6-1997						
19-6-1997						
20-6-1997						
21-6-1997						
22-6-1997						
23-6-1997						
24-6-1997						
25-6-1997						
26-6-1997						
27-6-1997						
28-6-1997						

Date	Type of Product/ Fish Purchased	Type of Gear	Price (wet)	Weight (wet)	Selling Price (smoked)	Purchased by Villager/ Creditor/ Outsider
29-6-1997						
30-6-1997						
1-7-1997						
2-7-1997						
3-7-1997						
4-7-1997						

- 3 Do you travel to sell your product: Yes/No, Where:
- 4 Cost of transportation To ... and From ... Koko, Warri, Sapele
- 5 How much do you pay for loading: ... and off loading: ...
- 6 Is it better to sell outside the village: Yes/ No
Price in the village: ...
Price outside the village: ...
By how much: ...
- 7 How much Tax/Levy do you pay to; Market Union: ...
Local Government: ...
- 8 Contribution by the husband towards house keeping:
Cash: ... Kind: ...

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