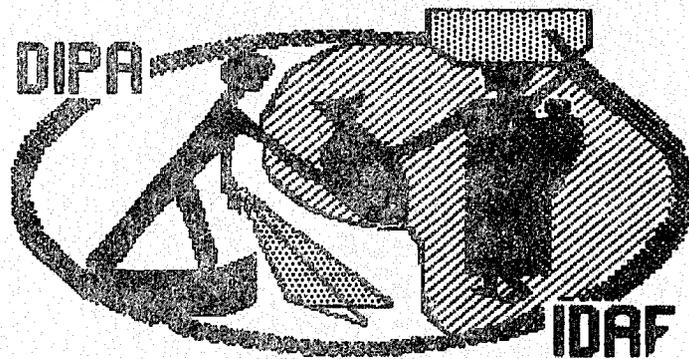


IDAF / WP 8

March 1986

SOCIO - ECONOMIC ASPECTS OF  
INTEGRATED FISHERIES DEVELOPMENT  
IN RURAL FISHING VILLAGES





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SOCIO-ECONOMIC ASPECTS OF  
INTEGRATED FISHERIES DEVELOPMENT  
IN RURAL FISHING VILLAGES

based on the work of

A.J.L. Van der Neeren

Programme for Integrated  
Development of Artisanal  
Fisheries in West Africa  
GCP/RAF/192/DEN - GCP/RAF/198/DEN  
GCP/RAF/197/NOR

With financial assistance from Denmark and Norway, and in collaboration with the Peoples Republic of Benin, the Fisheries Department of FAO is implementing in West Africa a programme of small scale fisheries development, commonly called the IDAF Project. This programme is based upon an integrated approach, involving production, processing and marketing of fish, and related activities; it also involves, in particular, an active and full participation of the target fishing communities.

This report is a working paper and the conclusions and recommendations are those considered appropriate at the time of preparation. The working papers have not necessarily been cleared for publication by the government (s) concerned nor by FAO. They may be modified in the light of further knowledge gained at subsequent stages of the Project and issued later in other series.

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## 1. INTRODUCTION

The main objective of development in general and of the Shenge Project in particular must be techno-economic betterment resulting in an improvement in the quality and standard of life, including social progress. Project SIL/82/015 envisages achieving this objective and results through an integrated participatory approach.

The participatory element assumes the involvement of the target group at all stages of planning and execution while the notion also must cover the aspect of social progress in terms of equity reaching therefore the largest possible number of people profiting from this progress. The vertical aspect of integrated development deals with the production chain from resource management, through capture, processing and marketing. The horizontal aspect covers the mobilization of resources, and the co-ordination of efforts outside the fishing sector, aiming at improving the qualities of life.

The present report proposes to assist the project management team:-

- (i) Through a summary review of the socio-economic situation of the fishing villages, indicating the principle components of the social structure in relation to community development integrated with the technological aspect of the artisanal fish production, processing and marketing chain.
- (ii) By preparing a plan for briefing the local community and authorities on the objectives and strategies of integrated development.
- (iii) By preparing a general work plan for the collection of basic socio-economic data allowing for continuous monitoring of the impact of the project in socio-economic terms by establishing socio-economic indicators.

## 2. CONCLUSIONS AND RECOMMENDATIONS

- a) Fisheries and the total economic situation in the Shenge Peninsular are in serious decline. This situation leads to greater competition for existing resources. At this moment, when new resources of expertise and infrastructure will be made available through the Project, it can be expected that greatest pressure will be exerted by the most powerful in this moderately unstratified society.
- b) From the summary review it may be observed that, within the society, various subcategories of people can be identified, often based on occupation, common interests and common needs. In broad terms these are Temnes and Sherbros, and fish producers, fish processors and fish traders. Within these categories further subdivisions are manifest, such as boat owners, crew, Ghana boat owners, and STD boat owners, professional smokers and home based smokers of fish, first and second wives.
- c) In this situation of serious decline with clearly defined common interest groups, it would seem essential that the economics and dynamics of each such category be defined so that the impact of actions undertaken can be understood beforehand. More efficient smoking techniques may well, for instance, result in betterment for the first wife, but be to the detriment of the second wife. Individuals belonging to such categories of people need to be clearly identified at the village level. Within the context of the strategy of the Project, practical and systematic adherence should be given to the application of what has been described as community development through community organization and participation.
- d) Despite the value of the participatory approach, community organization and community development, the consultant wants to stress that real development can only take place through the most rational and economic viable exploitation of existing fish resources including fish processing and marketing.

Improved economics of the fisheries industry will, by necessity, constitute the engine and provide the power to halt the economic decline of fisheries as well as the general standard of living, and increased landings and income.

The task of the project is firstly to assist in the creation of the conditions in which this improvement is made possible and, secondly to see that the benefits derived from this improved situation reach as many people as possible, although

clearly not everyone nor each identifiable sub-group will benefit equally. Through community organization it must also be made clear to the people concerned that attention to one particular group at a given time does not mean that their turn will not come.

The degree of participatory responses of the community or sub-groups both in vertical and horizontal aspects of integrated development will, given the actual situation and the expectations, depend largely on the skills of those involved in community organization, but also and in an important way on the credibility of the project to improve revenue from fisheries.

For these reasons it is suggested that:-

- A good practical fisheries extension officer be recruited with experience in organising corporate action, ideally with a knowledge of maintaining and repairing outboard or marine diesel engines.
  - a system of credit be made operational given the very poor and weak financial basis of all fishermen. It is difficult to see how considerable impact and equity can be achieved and a rational exploitation of existing resources be realised by the fishing community without access to credit for those who are capable to operate proven economically viable units, which moreover can often be made even more viable e.g. more set-nets.
- e) One of the bottle-necks working against fisheries development is not only the lack of regular supply of fisheries inputs, but also the exorbitant cost which is based on the parallel market value of the dollar (which is 100 per cent greater). The Project foresees a revolving fund to allow regular import of fisheries inputs, and every step should be taken and all possible support sought to retain the purchasing power of this fund in convertible currency at the official value.

f) In order to determine the actual economics of various types of fishing, data should be collected on a systematic basis and the report makes some suggestions in this sense. These data should also permit the monitoring of the impact of the project in this field and would permit the establishment of a comparison of the revenue per unit effort.

g) In order to obtain clearer insight on revenue the economist together with the sociologist should obtain data allowing one to establish inputs and returns on fishing and smoking, the actual cost of loans through traditional channels, and seasonal fluctuations.

Moreover, a marketing study should be undertaken, for which a short outline has been provided in the report, in view of evaluating possibilities and profitability of supplementary and/or alternative marketing channels in a situation which at present has monopolistic overtones.

h) Given the fact that the project addresses itself to women in fisheries the Government should appoint as soon as possible a women extension-home economics officer.

i) For certain categories of women, e.g. the fish processors of Shenge, who since the departure of the Ghana fishermen no longer have access to fish, but who have now banded themselves together into a pre-co-operative, it is difficult to see how they can re-enter the market economy unless they have access firstly to credit to buy fish on a sufficiently important scale and possibly to operate through crews of one or two fish producing units, and secondly, through direct assistance, to help as far as is necessary to construct proper fish smoking centres to be managed in such a way that maintenance and renewal are paid out of profits. Through more effective methods of smoking and co-operation the women concerned could make the time saved economically profitable through secondary activities and become multi-purpose organizations.

j) The Fisheries Department is represented at the village level by enumerators. Effective implementation of data gathering would require up-grading the enumerators through regular training sessions in technical, statistical and community organization matters.

. COMMUNITY DEVELOPMENT

.1 Introduction

The Colonial office definition of 1947 clarified the process describing it as "a movement to promote better living for the whole community with the active participation and, if possible, on the initiative of the community but, if this initiative is not forthcoming spontaneously, by the use of techniques for arousing and stimulating it."

Basically, it was a method to bring about social and economic change in accordance with felt needs for betterment. The United Nations accepted the concepts and the methods. In the publication "Public Administration aspects of community development programmes" the United Nations describes the process as "The term Community Development has come into international usage to note the process by which the efforts of the people themselves are united with those of Government authorities to improve the economic, social and cultural conditions of those communities."

The weakness of this frame of reference is now accepted. It saw "The Community" too much as an unstratified entity and not representative of various and often competing not conflicting sub-groups. Analysis of various community development projects shows that a pre-condition of community development is Community Organization. "Community" as a unit is a mental concept primarily, although not exclusively, based on geographic criteria and it does not constitute a unit of action except very rarely in relation to other geographically located units, e.g. The European Community.

If community development wants to deal with the whole community, it must harness the effective co-operation of all the constituent elements of the community relative to their felt needs. Co-operation needs Community Organization and community organization requires representation in the participation processes, of the various common interest elements. Any responsible attempt to stimulate community development through organization, must therefore have as a precondition a profound understanding of various sub-categories of which "the community" is composed, and the inter-relationship between these categories. These categories such as full time fishermen, part-time fishermen, fishermen's wives, traders, are concepts established by applying certain criteria to a number of individuals with a number of common characteristics and with therefore the same kind of needs and aspirations. Community organization aims at stimulating these common interest categories to act as a group: a football team is a group, a co-operative is a group, the crew of a Ghana boat is a group, but Ghana boat owners, fish processors, are categories, which through community organization can be made to act as a group for the benefit of those described as such. Community development requires the organization of all categories with a common interest within a given locality or localities to act as constitutional groups representing all the interests of the totality of the community and of the individuals of such sub-groups.

In order to promote betterment, one needs to define it and then achieve it. Different people and different categories of people within a community may well have different ideas about their betterment. Community development and community organizations must ensure that improvement of living standards and social progress reaches the whole community partly through those activities which result in improved conditions for all, such as better roads, better water provision, etc., and partly through those activities which cater for the specific needs of the various common interest groups. In the process of clearly defining the area for betterment, and realising it, two different methods can be used, namely the directive approach and the non-directive approach. Some insight is required in these two approaches as they require different phases and different attitudes and roles by the community development officer, and by extension, by his or her field workers.

### 3.2 Direct and non-direct approaches

The direct approach implies that the agency or project decides what the people need and attempts to convince them to decide according to what is thought good for them. The fact that they conform however, does not necessarily mean that they have accepted it as their priority. This will necessarily reflect on their inputs in realising the accepted activities for betterment, and thus has a bearing on the effectiveness of the exercise.

This approach also clearly defines the relationship which the community extension worker establishes with the people and the role he or she plays. In the direct approach the worker's initial aim is to get himself accepted as a friendly, trustworthy and competent person. When, and only when, he has achieved this will he be able to guide the thinking of the people and achieve a degree of participation. This direct approach has so far been the most widely used approach. Here the community development worker is a leader. Specifically in development conditions people themselves expect and are used to the directive approach, partly because of colonial directive attitudes and the fact that most people, such as in Shenge, live in chiefly and chiefdom directive societies. But this does not mean that this approach, although the norm, will be fully accepted or is the most useful tool for development and betterment as many agricultural or fisheries extension workers, despite all their dedication and expertise, will have experienced.

The theory underlining the non direct approach is that people are more likely to act on what they themselves have freely decided upon than on what somebody else, whatever his or her experience, has convinced them to do.

The word non-directive is not appealing and conveys too negative an attitude. The community development officer and his field workers want to do more than non-direct. The non-directive approach does not attempt to lead or persuade them to accept recommendations for betterment. The person or project which applies this approach tries to get the people to decide for themselves what their needs are, decide for themselves on priorities, and decide for themselves what, if anything, they are willing to do about it.

With regard to how to get the other resources needed, how to plan, organize and act, the role of the community development officer is not one of being a leader, as in the direct approach, but an enabler. He aims at stimulating a process of self direction and values it because of the learning experiences which this type of participation entails, and as a means for full participation at all levels of the development process, giving a greater chance of successful development because the action undertaken is willed by them, not simply accepted.

### 3.3 The role of the Community Development Officer

What is attempted to describe here is in broad terms not only the role of the community development officer, but also the role of those field workers who assist him or her in the implementation of the overall strategies. In a directive approach, the community development officer is a leader accepted by the people listened to, who uses his authority to convince people to agree to particular actions for betterment. In a non directive approach, as community work was initially conceived, the community development officer is an enabler and stimulator for action by common interest groups either at the village level or at the various constituents sub-group level. At the same time he is a resource person as well as a guide to ensure that various actions undertaken by various sub-groups do not upset social cohesion and equilibrium and prevent conflict arising out of changed conditions. The conditions under which this approach can operate are that the Community Development Officer must have clear understanding of (i) various common interest groups and how these elements inter-relate and/or are inter-dependent. The worker at village level must know not only that these categories exist, but also who they are, and (ii) various channels of communications and persuasion that exist and how these operate at village level. He must also understand if a number of people are dis-satisfied with things as they are and are agreed on what they want; that the people concerned have a clear idea about what can be done about it, and (i) if they decide to organize what ever help they themselves can give, and if (ii) they have access to sufficient resources to achieve what they want.

The role of the community development worker is to help create sufficiently favourable conditions for actions. That is to say, act as a catalyst. In the very poor situation such as Shenge, this would by necessity mean that he has access to material resources required to get things done over and above what the people can do themselves.

In practice this would mean :-

- Stimulating people to think with what they are dissatisfied.
- Stimulating people to think about what specific changes would result if their needs were being met.
- Stimulating people to think and decide in what way they can contribute to realise these changes themselves.
- Stimulating people to think what other resources are needed and determine action.
- Creating the opportunity to create inter-action (thinking, deciding and acting) between members of common interest groups.
- Creating the opportunity of inter-action between various common interest groups.
- Providing the stimulus to get people thinking and deciding.
- Helping with discussions.
- Keeping the discussion on one item at a time
- Ensuring that all the people are really in agreement.
- Ensuring that all possibilities are considered.
- Providing information required.
- Helping in summarizing discussions and agreement or non-agreement.
- Giving administrative support.
- Giving assistance to obtaining those resources required for betterment and which are not available at village level.

Given the extent of the target group (13 villages) and the fact that community development is a continuing process, it would seem that the enumerators now representing the Fisheries Department should be up-graded and trained in obtaining required data, assisting the sociologist, and in applying the various community development techniques.

It may also be noted that given their age and experience, in no way could they be used as leaders if a non-direct approach to community development is used. The consultant considers this fact as a further justification why a more detailed consideration has been given to the non-directive approach.

#### 4. SOCIO-ECONOMIC REVIEW

##### 4.1 Relevant historical data

The Shenge peninsular where the 13 villages are situated, whose people constitute the target group of the project, is part of the Kargboro Chiefdom, inhabited by the Sherbro people, with Shenge as seat of Government whose authority was vested in the Paramount Chief. During the Colonial period, authority of the Chief was further strengthened through the protection the Chief received through the system of indirect rule. After independence, this authority has been greatly reduced and is in the process of being further eroded. Not so too long ago the Sherbro Chief was considered as one of the most powerful in the country and Sherbros played a disproportionately important role in Central Government, as chiefly-connected families made full use of advancement through the educational system. Mostly however, the Sherbros were and still are subsistence farmers who supplement their diets and later some income from fishing. Cultivation is practically limited, on the sandy soil, to cassava, sweet potatoes with groundnuts as a cash crop. It was a largely unstratified, poor subsistence farming community with a strong element of mutual assistance when needed.

Missionary educational activities may have constituted the first major change. A second and important change occurred when towards the end of the war, fishermen from Ghana came with large boats and introduced ringnet fishing, producing large catches. This created opportunities for cash labour, the processing of large quantity of fish and trading.

Shenge especially, and indirectly the whole Sherbro Peninsular, prospered. The prosperity is still reflected on the whole by good housing which dates from this period. This period of relative affluence lasted till the end of the sixties when the Ghana fishermen were forced to leave the country.

Another and major change occurred in that the Temne living towards the northern Guinea border, professional fishermen since centuries, came further down south and have settled during the last 20 to 25 years in the Sherbro Chiefdom, replacing the Ghana fishermen. Today roughly 90 per cent of the catches are landed by the Temnes.

#### 4.2 The economic situation : trends

As for the Sherbros there has been a severe decline since the departure of the Ghana fishermen. Partly because the Temnes recruited mainly all their crews from among the Temnes and not from the Sherbros but more importantly, because the processing and local sale of fish remains in the hands of the Temne women.

As for the Temnes, there are equally clear indications that there is a severe economic decline. As recently as 1981, 72 motorised Ghana type boats operating ringnets were observed. Today, this number has fallen to 37. This has resulted not only in very substantially reduced catches and thus overall income, but also less revenue from processing and marketing.

Two major indicators of this trend can be noted. Firstly the wholesalers with their three lorries came to Shenge twice a week. This has now been reduced to once a week. Secondly, in 1981 the recent construction of proper housing (concrete wall and tin roofs ) could be observed, but over the last few years practically no more housing of this type has been constructed and there is plenty of evidence of the general deterioration of the housing situation, in quality as well as in numbers. It is therefore suggested that housing should be one of the socio-economic indicators to measure possible impact of the project. This in turn will require not only obtaining the statistical data relating to the actual situation, but also establishing what has happened over say the last four years. If the work of the Project would initially result in retaining the statusquo this would indicate progress relative to the previous downward trend.

#### 4.3 Demographic data

Recent population census data compared with those for 1981 show on the whole a growth rate compatible with or slightly above the national average of 2.6 per cent. The two exceptions are Katta and Plantain Island where there has been an additional influx of Temne more recently, which is explained by the people themselves as being a result of the expectation of Project activities and assistance. The census will continue in more detail in September and it is suggested that the census should register in the fishing villages the overall percentage of men and women, and compare this with the 15 to 25 age group within the families with/view to measuring and monitoring the exodus of young males to the cities, which could constitute a socio-economic indicator.

The overall population trend should be carefully monitored because, as has happened elsewhere, the project may attract a substantial number of people, resulting in over-crowding and a decline in the overall health conditions unless very specific measures are taken.

#### 4.4 Medical facilities

The medical facilities in the Kargboro Chiefdom are comparable with those of Sierra Leone as a whole, except that there are no hospital beds and no medical Doctors. In the Shenge area, the situation is well above average as regards health clinics, as it has one clinic with one Dispenser and two Midwives in a population of around 7,000, whereas for the country as a whole there is one clinic for roughly 15,000. The area also has three traditional midwives, two of them in Shenge and one in Katta. There is however, a continual shortage of medicines. The maternity clinic plays an important and effective role. In 1983, 120 deliveries took place with only one still-birth, while in 1984, 142 children were delivered. During 1984, 268 mothers attended one a week the ante-natal clinic of which 125 were new cases, at the same time 500 mothers and children attended once a week the under fives clinic.

Comparing these figures with those obtained for 1980 there has been a remarkable improvement. Mothers attending the clinic are given, together with some medicines, milk powder provided by C.A.R.E., but the amount given allows distribution to only 500 mothers with children under-five. At the moment more than 50 mothers and children are on the waiting list. Possibly the project could intervene to ensure the augmentation required. Another important improvement since 1981 has been the immunization campaign through which in 1982/3 all children were immunized against measles, cholera, typhoid, tetanus, polio and small-pox. This campaign has had several follow ups and the project could possibly well act as a further stimulator to prevent any slackening, of which there is some indication. Also the expectant mothers are given tetanus injections. Gastro-enteritis and bronco-pneumonia are major causes of mortality and could be reduced through campaigns of health education, which should clearly include wider field of nutrition.

In the same field of preventive health education and action much could be done with the help of community organization, and with further outside help in the field of improving clean water supplies through the construction of wells and the construction of latrines. The number of births, deaths of under-fives which has a national average of 25 per cent, the number of mother of attending ante-natal and under-five clinics, the number of wells and latrines could all constitute social indicators to measure the impact of the project through its secondary activities.

#### 4.5 Education

There are six Primary Schools in the Kargboro Chiefdom. In the Shenge area, there are two Schools, one in Shenge and one in Bompotoke, with total enrolment of about 600, serving not only the fishing villages, but also the Sherbro villages further inland. In Shenge, there is also one secondary school built with 160 pupils. At Plantain Island there is one school built through self-help with an enrolment of 60. Compared with the national average, the Shenge area and the fishing villages are not disadvantaged. The relative isolation and the lack of amenities prevents however, on the whole, qualified teachers being attracted, resulting in the minimal exam results. Only if substantial improvement in the overall standards of living are achieved can any marked improvement be expected, unless through the recruitment of expatriate staff in the secondary school as is envisaged. Better school facilities and the increase in the number of class-rooms may constitute a socio-economic indicator that will have very little value if the increase is not linked with substantially improved performances.

#### 4.6 Distinctions within the Shenge society

A major distinction must be made between the native Sherbros and the more recently arrived Temnes. This distinction is not only expressed through identification in ethnic cultural terms, but also in religious and professional terms, in that the Temnes are exclusively muslims and professional fishermen.

As is normal within muslim communities, religious affiliation gives an added and important dimension to the cohesion of the village through the application of Koranic norms, behaviour patterns, prayer and fasting practices, which pervade every aspect of life. All the same, the villages may be more stratified than would at first sight appear; influence being determined by affluence, in most cases being Ghana-boat owners with large house-holds. The affluence may however be less in reality as most are very heavily in debt, many have not been able to continue to operate large boats and their status is dwindling. No doubt, the Ghana-boat owners play an important part in the fishing community because they have substantial production resources, allow for employment, and provide the greater part of the fish on which the processors, fuel, wood and fish merchants depend.

The Sherbros constitute at the village level a much more egalitarian society in terms of affluence, and recent severe economic recession has further accentuated the situation. However, some families retain higher status through higher educational level and having made fuller use of opportunities offered resulting from education.

The Sherbro women, especially in Shenge, have shown in the past during the period of the Ghana fishermen the capacity to exploit economic opportunities, when these present themselves. They would no doubt do so again if these opportunities were created. Among the Sherbros and Temnes various forms of mutual help and co-operation exist; house building, crewing, school-building, outside the more market oriented financial "help" and loan schemes.

#### 4.7 Socio-economic family revenue patterns.

Fish handling and marketing are in Sierra Leone, much the same as elsewhere on the West Africa coast, the domain of the women. Especially within the context of Temne society socio-economic family rules and regulations several considerations must be made not only in relation to the role of women, but also in connection with the family head's real revenue from fishing. Where in many other situations along the African West Coast the women have independent economic authority, among the Temne they do not share this independence. The family head owns all property and has full authority over all family members. His sons working for him are paid in the same way the other hired labour are paid (but he pays for his sons' first wife if he wants to marry).

All female members work for the head of the household under the supervision of the first wife. The profit from the female members activities is used by her for the fulfilling of her obligations towards the family expenses. At regular intervals she must declare her net profit and hand over this profit to the rightful owner, the household leader. To encourage profit making the household head will let her keep the greater part commensurate with the profits made.

Another important factor in the partition of the profit is whether the wife or her daughter have made the profit through an initial investment of the husband, e.g. smoking money to buy fish, goods for petty trading, or from her own investment, additional through slowly accumulated capital. There is an inherent conflict in this situation, in that the husband wants as much profit from his work force and therefore must keep her indebted, whereas the woman seeks greater economic independence through successful trading which the household head must somehow recuperate if he wants to retain her efficiency.

Polygamy has clear economic implications and to establish a family head's income, e.g. a Ghana boat owner, one must look further than to show what he obtains from fish production alone. More women allow also for a certain diversification so that for instance, one wife could be absent for a week or more to do up-country and profitable marketing of fish. Within the Sherbro society, polygamy is far less widespread and the autonomy of women substantially greater. Any income of a woman derived from other sources of investment than her husband's are totally hers. Therefore if credit would be extended to Sherbro women, they would benefit proportionately more than if the same credit was given to Temne women.

## 5. THE DYNAMICS OF THE FISHING INDUSTRY

### 5.1 Various types of fishing

It is only the Sherbros who operate the Kru one man canoes used for subsistence line fishing and mainly Temnes who operate the standard 1-2 or 2-3 man canoes. Mostly the crew is recruited from among family members or friends who also sometimes are share-holders in the boat and/or gear. The partition of catches is made on the basis of labour and capital investment inputs. However, much more detail about the mechanism of remuneration need to be obtained. Mostly Temnes operate motorised Ghana boats with "paid" labour.

## 5.2 The economics of various types of fishing

The Kru type of fishing is not a market oriented type of activity as it is mainly directed towards subsistence fishing with some additional fishing for cash, when needed or desired. A comparison between the number of STD boats in 1981 and the number today shows a modest increase from 295 to 322. No cases were found in the villages visited where owners had to abandon this type of fishing.

Clearly the income derived from this type of fishing will not allow these fishermen to become rich or have a high status, but on the other hand they have a reasonable income and low regular expenses for fish production as they are not motorised. It is very hard work. The value of the profit has been seriously undermined recently by the gigantic inflation of prices of all goods estimated at 600 per cent over the last four years. They are however suffering proportionately less because they have less regular expenses to operate their boats whereas fish prices have increased threefold.

Within the field of profitability in the type of fishing (hook and line and set nets for the 1-3 STD boats and drift nets for the STD 2-5 boats) higher returns on effort could be considered forthcoming from :

- better maintenance of equipment
- better and more suitable vessels allowing for greater mobility and stability while under sail and thus increasing the number of fishing days.
- improving the setting of the nets
- night fishing
- augmenting the number and/or length of nets through access to credit thus increasing the output per unit/-day effort.
- the project could possibly also carry out tests on the cost and returns of very small engines increasing their reach and the number of fishing days.

Improvements in this type of fishing could possibly benefit both ethnic groups, although not in equal manner, if special attention and training were given to this aspect of development. Concomitant with these efforts by the project and in view of monitoring possibly at a certain stage, over-fishing, and the impact of improvements and measuring the profitability of various types of gear, types of boats, number of crew, it is suggested that, on a sampling basis, in each village basic data are collected which would allow the clarification of :

1/ STD = Standard type canoe, dugout and plank, 20-24 feet long, 1-5 crew.

- net revenue per day per type of gear
- rentability of type of fishing
- revenue of crew members and possibility of saving (annex 1.)

The actual use of these sample is however preconditioned by :

- knowing the "cost" of loans
- separate records of why fisherman do not put out to sea (e.g. contrary winds)
- further information being obtained in the mechanism by which crew of STD boats are remunerated
- the samples taken being representative for the situation as a whole
- the samples being similar in quantity and quality of gear, in the age and experience of the fishermen concerned and in family composition relative to their other obligations

It is proposed to take 3 or 4 samples per village per type of boat and gear used and it can only be of value if the people concerned give all the data requested. The most sure way, to attain this is if the people want to give the data because they see it is for their benefit (non-directive approach).

As has been said above, the real revenue from fishing within the family income cannot only be measured in terms of net profit derived from fish production since profits from smoking and/or marketing must be added. In order to establish revenue from fishhandling by wives statistical data could be obtained as proposed in annex 2. The value of these data is however conditioned by establishing on a regular basis the percentage added value derived from smoking the fish, that is to say the price of smoked fish minus cost of fresh fish, depreciation of Banda, cost of fuelwood, cost of splitting wood, and handling charges of the smoked fish.

In the sample should also be established the percentage of profit on fish smoked within the household and sold retail, e.g. in Bo, that is to say price obtained in Bo minus cost of fish, fishhandling and smoking etc. and the cost of transport, being lodged and fed, market and handling charges. Evaluation should also be made of benefits accruing either from the special relationship with the moneylender through access to "cheaper goods" or from goods brought by wives having sold smoked fish in larger population centres such as Bo and bringing back goods for sale or household use.

A comparison between the number of motorised Ghana boats operating today as compared with the 1981 situation shows that 50 per cent are no longer operational. The reason is that boat-owners no longer make sufficient net profits to save money in order to buy essential replacement gear and engines or have

access to additional loans through the traditional credit system, as most of the boatowners are already very heavily indebted to the moneylenders.

The economic viability of this type of fishing has been in doubt for sometime and in the late seventies Linsenmeyer <sup>1/</sup> drew attention to this in his study on profits obtained within the artisanal fishing industry. In 1981 there was ample evidence of the presence of ex-Ghana boat owners. Within the last four years the number has further dwindled by 50 per cent. Another indicator of the financial pressure under which these boat owners operate can be derived from changes in the way the boat owners remunerate their crews. Traditionally and until very recently, the boat owner lodged and fed his crew and allowed them to use his boat, gear and petrol to go fishing for their own benefit during one fixed day per week. Today the crew must pay for the petrol and this constitute a major expense as petrol costs are around US\$ 4-5 a gallon. In cases of very good catches the boat owner will require that some money derived from sales is set aside to help pay for major repairs. Neither the boat owner or the crew have a choice.

It would seem that it is essential for the project to gain a clear insight in the economics of a number of Ghana boats operating from various villages. This type of fishing has been included in collection of data regarding profitability of fish production with the family and therefore includes smoking and trading (annex 2) (also see the remark made under paragraph dealing with STD boats concerning the real "cost" of loans, the necessity of having access to all the data, requiring their full cooperation which in turn demands the right motivation.) In this exercise it is also necessary to obtain the real cost to the boat owner of feeding and lodging his crew. The weak financial position of the Ghana boat owners has, since the devaluation of the local currency and the scarcity of petrol, been further aggravated, although it must be said that the price of fish has also increased. Comparing the 1981 situation with today, it could be observed that the price of inputs and transport had increased six fold while the price of fish had trebled. The price of essential foodstuffs has increased over the last year 200 per cent. The importance of including the profit from smoking, especially within the Temne community, may be derived from the following observation. There is some evidence that the percentage increase of smoked fish as compared to fresh fish is only 25 per cent as compared with 35 per cent in 1981. Moreover, the cost of fuel food has increased many fold. However, because of the higher value of the fish, actual profit expressed in leones may be higher. As regards the acquisition of useful data it is also suggested that <sup>is kept</sup> is kept on the total fish production per type of gear and of total fishing effort at the village level. (annex 3.) At the same time and parallel with these data the enumerators must carefully keep check on a day to day basis, the reason why fishermen do not put out to sea.

<sup>1/</sup> Linsenmeyer, D.A., 1976, Economic analysis of alternative strategies for the development of Sierra Leone marine fisheries. Michigan State University 178p.

These data will allow one to establish total fish production by multiplying total number of vessels and hours of operation by averages established through the samples taken, and gain insights into which fields improvements can be made.

The logging of reasons why fishermen in the various categories of vessels do not go out to sea, will give management the basic data required to consider possible measures to improve the situation and measure impact, given the importance of Ghana boat types fishing to the economy of the peninsula as a whole, and help create conditions to make ringnets fishing economically viable, and must figure among the priorities of the project. The main possible improvement with the maximum impact could come from the change from outboard to diesel inboard engines. Various experiences in Sierra Leone (Tombo and the E.E.C. Project) and FAO documented experience elsewhere could be studied, appropriate choice made and tried out, and results compared with data obtained from similar outboard powered vessels. The main fear among the fishermen is that diesel engines are not fast enough. This has considerable importance not only as regards time actually available for fishing, but also for the speed required to encircle the shoal of fish. In Sierra Leone these are, on the whole, not very dense and therefore require longer than average lengths of ringnets. Moreover, speed is important in that the boat reaching the home base first has the advantage that it determines the price of fish for that day.

Other measures which could have an important accumulative effect are: lower prices for inputs; regular supply of spare parts; better maintenance of material including engine maintenance (which will require a training programme for mechanics and these in charge of engines on board); the use of 2 stroke oil instead of using lubrication oil as is done at present with disastrous results; diminishing costs of processing through cheaper fuel wood obtained through cheaper transport. Possibly this could be achieved through the various fishermen's and fish processor's committees and associations organising, through access to credit, their own transport (boat) for the transport of wood and possibly smoked fish (depending of the results of the marketing studies). As for the evaluation of the advantages of diesel engines, one other observation needs to be made: the actual price of petrol, as paid by the fishermen is now between \$ 4-5 per gallon (or Le 55 to the dollar). The demand for diesel fuel is low and thus supplies more plentiful with an official price of Le 7.00 per gallon and a parallel market price of 10-12 leones per gallon. However, this situation may well change when the major hydro-electric dam at Dodo, Kenema East comes on stream by the end of the year with a subsequent reduction of demand on existing fuel supplies.

### 5.3 Processing

As mentioned, improved smoking techniques may constitute one element, although small, in the reduction of costs. At the same time, greatly improved working conditions and savings in labour time can be achieved using 'Chorkor' ovens and through organizations as for instance by Sherbro women in Shenge.

On the one hand the project could act as an enabler and stimulator to help the women find the ways and means to make the time thus saved economically profitable, not only by trading but preferably through food production, e.g. vegetables, chickens, eggs, etc. The various systems of the division of labour among first and second wives in relation to smoking and income has been described elsewhere in this report, and the 1981 report,<sup>1/</sup> the possible improvements in terms of savings in time spent on smoking and the reduction of manpower requirements, may well result in benefits at various levels (financial and status) of the first wives, but may be to the detriment of the second wives unless specific actions are taken to create opportunities.

#### 5.4 Marketing

The present situation can be summarised as follows; on landing the fish is "sold" to the fishermen's wives or to professional smokers, depending on relationship indebtedness. They process the fish and in turn sell the finished product to wholesale traders from Bo with whom the fishermen have a special "relationship" and to whom in general they are indebted. No other traders can come to the Shenge area and thus there is no competition, although between 30 and 40 traders come down once a week all on the same day in three rented lorries. The 1981 report gives a break down of these traders as to their origin and shows a percentage of Sherbro traders. Not all wholesalers are female.

The wholesale processed fish marketing is within Sierra Leone a well organised system ruled by an informal organization which has its own rules and regulations, methods of recruitment, expulsion and punishment if rules are transgressed. The organization determines who operates in which area of sale and not necessarily the areas where fish is brought. It is therefore operating a closed shop system and can be described as a monopolistic marketing price fixing. On the other hand it must be recognised that the participants are the only people who advance the money required to keep the artisanal fisheries going in a very difficult time, when many of the larger production units have ceased fishing operations and clearly have no further access to extended credit. Also it must be said that they cannot abuse the system to such an extent that the units they help finance will collapse. The fact that many have gone to the well may well reflect on the limited margin of profit the traders make, at the same time the limitations on further credits may be due to a diminished demand for smoked fish owing to the substantial cost of living, or to greater access to deep frozen fish which is cheaper. Equally it may be due to alternative possibilities of investment with better and/or more secure returns (less perishable products)

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<sup>1/</sup> Van der Meeren A.J.L. Report on a mission to Sierra Leone to make a preliminary survey of the sites for community fishery centres in the Shenge area and recommendations on the logistics involved. MS. Fisheries Department, FAO, Rome, December 1981.

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