

NIGERIAN FISHERIES DEVELOPMENT
CHALLENGES AND OPPORTUNITIES
OF THE 1980's

by

B.F. Dada¹ and D.A.S. Gnanadoss²

1. Director
Federal Department of Fisheries
Lagos.

2. Project Manager
FAO/UNDP Artisanal and Inshore
Fisheries Development Project
Lagos

ABSTRACT

With the momentum generated in Nigeria under the Green Revolution Programme to make the country self-sufficient in food, the fishing industry is poised for very rapid development. It is however, realised that there is no quick magic formula for this development, which has to be preceded by careful planning, evaluation of resources, development of necessary management and technical personnel, introduction of appropriate technology and identification of priorities and the needs of the industry.

This paper attempts to focus attention on the possibilities and priorities for the development of fisheries in Nigeria during this decade and spells out the role of the agencies in the country connected with fisheries to bring about this development.

INTRODUCTION

Fisheries occupy a unique position in the agricultural sector of the Nigerian economy. With fish contributing about 40% of the animal protein intake of the average Nigerian, Nigeria is the largest consumer of fish and fishery products in Africa. Yet only about 70% of the total demand for fish is met by domestic production.

Nigeria is endowed with a fairly long coastline (about 960 Kms) and although the continental shelf is relatively narrow, yet it provides the bulk of the present marine fish catch. The 200 miles Exclusive Economic Zone (EEZ) has generated interest in the pelagic fisheries for tuna and related species. In addition, Nigeria has an intricate net-work of fresh water river systems and vast expanses of brackish water creeks, lagoons and swamps, rich in fish and shrimps. Associated with the river systems are numbers of reservoirs, lakes and ponds.

FISH PRODUCTION AND SUPPLY

There are two main sources of fish supply in Nigeria - domestic production and fish imports. The domestic fish production is derived from three main sources - artisanal inland waters, artisanal coastal and brackish waters and industrial fishing in inshore and off-shore waters.

Despite increase in domestic fish production in recent years, fish import has continued to rise. It has been estimated that the percentage increase in fish import is much higher than the average growth rate of fish production, which indicates a widening gap between domestic production and demand.

Per caput fish consumption has increased at an average rate of 3.4% per annum from 6.970 kg in 1971 to 9.096 kg in 1979. This trend is bound to increase during the 1980's widening further the gap between production and demand. This situation emphasises the need for increased efforts not only to boost fish production, through increased exploitation of the under exploited and unexploited resources, development of artisanal fisheries and fish culture but also minimise post-harvest losses through proper storage, processing and quick transport and attain self-sufficiency in fish at the quickest possible time. This indeed is the challenge.

Table 1. - Nigeria fish production by sectors 1971 - 1981

Year	Domestic Fish Production	Import	Total Fish Supply
1971	409,537	54,416	463,953
1972	437,971	65,063	503,034
1973	465,075	71,410	536,485
1974	473,220	74,905	548,125
1975	466,236	114,186	580,422
1976	494,766	133,977	628,743
1977	504,014	164,449	666,463
1978	518,667	202,208	720,775
1979	535,435	218,000	753,435
1980	479,596	234,000	713,596
1981	496,221	245,000	741,221

Source: Federal Department of Fisheries

DEVELOPMENT OBJECTIVES

In line with the objectives of the Green Revolution Programmes, the Government aims to give a boost to fish production in the country, with the view to bring about self-sufficiency in fish and fishery products in the shortest possible time, to increase foreign exchange earnings through exports of shrimp and other fishery commodities, to provide employment opportunities to school leavers, to develop fishery based industries, and to ensure optimal utilisation of the country's resources through rational management and conservation. These are to be achieved through development of appropriate fisheries institutions, supply of necessary fishing and allied inputs in adequate quantities, provision of suitable infrastructural facilities, and introduction and enforcement of necessary fishery regulations. These are the opportunities.

THE DEVELOPMENT PLAN

The Fourth National Development Plan (1981 - 1985) envisages a capital outlay of N172.006 million for fisheries development which is about twice that of the Third Plan allocation.

Table 2 - Fourth National Development Plan 1981 - 1985:
Summary of Government capital allocation to
fisheries (in millions)

All States	Local Government Areas	Federal Government	Total
63.047	21.629	87.330	172.006

The main components of the projects approved for implementation at the Federal level comprise of: -

- Artisanal Fishery Project - N 8,830,000
- Fishery Infrastructure (industrial) - N39,000,000

Aquaculture	- N12,000,000
Fish Storage, Processing	- N 5,000,000
Fishery Inspectorate	- N 2,500,000
	<u>N87,330,000</u>

These Government programmes will have to be supplemented by additional inputs from the River Basin Development Authorities and Research, training and extension support by the National Fisheries Research Institutions and Universities. In addition the active involvement of the private industrial fishery sector is essential to develop both the fishing and allied industries.

FISHERY RESOURCE

For fisheries development plans to be realistic, it is important that they are based on a clear understanding and appraisal of the nature and availability of resources, their potentials, rate at which the resources could be exploited on a sustainable basis, and the appropriate fishing efforts to optimise the inputs.

The Nigerian Institute of Oceanography and Marine Research (NIOMR) has estimated the fishery potential of Nigeria as below:-

Demersal Inshore Industrial Fishery	- 14,000 Tonnes
Demersal Off-shore Industrial Fishery	- 10,000 "
Demersal Artisanal Fishery	- 20,000 "
Pelagic Artisanal Fishery	- 140,000 "
Pelagic Off-shore Artisanal Fishery	- 18,000 "
Shell Fish (Shrimps) Artisanal Fishery (Lagoons and Brackish Waters)	- 48,000 "
Shell Fish (Shrimps) Inshore Industrial Fishery	- 3,500 "
Tuna in Exclusive Economic Zone	- 20,000 "
Kainji Lake	- 11,000 "
Lake Chad	- 30,000 "
Rivers and Reservoirs	- 10,000 Tonnes

The on-going fishery surveys by the NIOMR and the resource appraisal of Artisanal and Inshore Fisheries under the FAO assisted Artisanal and Inshore Fisheries Development Project and the resource studies by Kainji Lake Research Institute and the Lake Chad Research Institute are expected to throw additional light on fishery resource situation in the country.

DEVELOPMENT POSSIBILITIES AND PRIORITIES

Marine Fisheries:

Industrial Sector

As demonstrated by several fishing companies operating successfully in Nigeria, good possibilities exist for profitable commercial fishing operations in Nigeria. It is, however, known that nearly half of the licensed fishing vessels are not operating for several reasons, the major constraints being lack of proper maintenance and repairs, inadequate terminal facilities for berthing, landing, storage, processing and marketing of fish, shortage of trained technical manpower to operate the vessels and professional manpower to manage the industry. These, compounded by inadequate information on fishery resources of the territorial waters

and EEZ and lack of expertise or advice on choice of the right vessel and gear, have all added up to the problems of the Nigerian industrial fishing sector.

For industrial fishing to develop and make its proper contribution to Nigerian fisheries, it is important that the identified constraints are removed. High on the priority is the need for suitable terminal facilities.

Fishing Terminal

At present, the Federal Government is constructing three coastal fishing terminals located at:

- Ebughu, Cross River State
- Borokiri, Rivers State
- Igbokoda, Ondo State

Work on the Lagos Fishing Terminal at Kirikiri is expected to start shortly.

These fishing harbour complexes will enable a proper execution of most of the activities which take place between the capture of the fish and its consumption - like quick unloading of the catch, cleaning, sorting, storage, selective product handling, processing, marketing and distribution. These harbours, besides providing shelter for vessel against the elements, also enable the shore personnel to attend to repairs maintenance, bunkering and supply of other essentials like food, water etc. The harbours will therefore, attract many service industries like boat-building and repair facilities, mechanical/marine workshops, fishing gear manufacturing and repair units, provision of essential supplies and services, packaging, ice and cold storages, ship-chandlery store etc. In essence, these harbours will form the lynch-pins of the activities of the industrial fishing fleet and will constitute much to the efficient operation and management of the fleet and disposal of the fish catches.

Still, considering the long coastline and the numerous river mouths and creeks, it will not be realistic to expect that all the fishing vessels operating in the country would be in a position to make use of these terminals. It will therefore, be necessary to have additional intermediate level terminals at a few other centres, located midway between the large terminals and also have several other fishing jetties particularly for the small and medium sized fishing vessel.

Ideally, it would be desirable to have at least one terminal or landing facility for every 100 kilometer of the coast line.

Management of Fishing Terminals

Fishing terminals being complex facilities with sophisticated modern machinery and equipment, require highly skilled and trained engineering personnel to operate and maintain the plants and experienced professionals to manage them. Being essentially mini-ports, these present most of the problems associated with commercial harbours. Besides normal management, periodic dredging of the lead channels and jetty water fronts may be necessary. As fisheries organisations in the country do not have the personnel for jobs of this nature, the need arises to set up a separate agency with the necessary expertise. Such an agency designated as Fishing Terminal Management Agency should draw personnel from Ports and Marine mechanical and refrigeration engineering background and experience and preferably have them understudy the team of engineers putting up the facilities at the various terminals. Care should however, be taken not to introduce the rigorous procedures in commercial harbours and run the harbour more as a service facility. To ensure that the terminals are used by the fishing industry, it should be mandatory for all fishing vessels in the area to operate only from the fishing harbour and not from any private jetty.

Fishing Fleet Expansion

Being essentially an industrial activity, the fishing vessels will operate mainly in the private sector, with government providing research and extension support. The decade is already witnessing a spurt in industrial fishing activity with several fishing companies operating successfully. An encouraging trend is

the increased collaboration with developing countries, which has yielded highly satisfactory results. However, one disconcerting factor of the operations of these vessels is that almost all of them operate in the inshore waters at depths ranging from 20 to 30 metres and there is seldom any off-shore fishing activity.

Table 3 - Summary of licensed fishing vessels

Category of Vessel	1981	1982
Inshore Fishing Trawlers	45	52
Inshore Shrimp Trawlers	36	34
Distant Water Trawlers	128	147
Inshore Research Vessels	1	-
total	210	233

The Action Programme under the Green Revolution envisages introduction of fifty (50) inshore fishing vessels and 38 distant water fishing vessels in the coming years both in the public and private sector. It is ironic that while the main fishing effort goes into catching bottom fish like Croakers, (Pseudolithus typhus and P. senegalensis) the type of vessel and the gear used are the typical Mexican out-rigger shrimp trawlers. Perhaps, these vessel types which were originally introduced for shrimping, stayed on to catch fish predominantly. One disturbing aspect of this development in the used of shrimp gear for capturing fish, is the predominance of juvenile fish, particularly croakers in the trawl catches. This trend will need to be discouraged to prevent depletion of stock.

Moreover, as, in any case, the emphasis is on capturing fish, the vessels to be introduced in future should reflect that character. Steps will have to be taken to diversify the fishing methods. With the surveys being conducted into oceanic resources in the country's EEZ, it is hoped that information will very soon be available on the pelagic and other resources and the methodology for their exploitation, which will have great bearing on the expansion of distant water industrial fishing fleet in the country.

Fishing Vessel Development Fund

One of the well known constraints in introducing large industrial fishing fleet is the heavy capital investment involved and the difficulty in raising the capital through normal banking channels because of the risks involved. In most developing countries and in some of the developed countries, the practice is to establish special funds for financing acquisition/construction of fishing vessels - channelled either through banks and government institutions.

In addition to assisting entrepreneurs to acquire fishing vessels, it will also be necessary to establish a revolving fund from which one could draw funds in an emergency.

Trained Manpower

One disconcerting aspect of the operation of the country's industrial fishing fleet is that the majority of the vessels have been manned by expatriate skippers and engineers with until recently Ghanaian crew members occupying most of the lesser positions. This situation needs to be corrected quickly. Advantage should be taken of the recent departure of the illegal aliens to infuse Nigerians into the fishing fleet and train them. It should be made incumbent on licensed operators that within a specified period they will locate and train Nigerian skippers and engineers and replace the expatriate personnel.

The Federal Fisheries Schools should be actively involved in this development.

ARTISANAL FISHERIES

Artisanal fisheries in Nigeria constitute the most significant fishery sector in terms of number of people engaged in or dependent upon it and the very high percentage (66%) this sector contributes to the country's fish production. Yet, paradoxically, this sector is the most impoverished one, with the fishermen generally making a subsistence living. Several reasons have been attributed to this situation. The more important ones being remoteness of the fishing settlements and difficulty of access, use of antiquated fishing craft and gear and labour intensive fishing methods, lack of adequate finance and basic infrastructural facilities like ice and cold storage, fish handling and processing centres, storage, distribution and marketing network and also lack of basic human needs like proper housing, drinking water and sanitation.

Considering that about 450,000 fishermen, operating about 134,000 fishing canoes are dependent on this sector, with their families, the magnitude of the task to improve the lot of these fishermen is indeed phenomenal and challenging.

Approach to Assistance

It has been identified that the artisanal coastal and brackish water sector offered good scope for increased production. Furthermore, being the poorest in the social and economic scale and the most populous, there is special need to support this sector. From a sociologist view, the assistance is also meant to arrest the drift of young school leavers from the fishing settlements to cities and provide them with more attractive fishing occupation.

The assistance that has been provided as a package of fishing inputs to cooperative units of fishermen in selected fishing settlements under the National Accelerated Fish Production Project (NAFPP), supplemented by other infrastructural facilities has been well received and has helped the beneficiaries to increase their earnings and improve their lot. However, this assistance can serve more as a catalyst and an eye-opener for the rural fishing community exposing them to the benefits of modern technology and cooperative endeavour.

Scope of Assistance

Having identified the needs of the artisanal fishermen, a multi-pronged drive is under way to modernise this sector all the way from the primary activity of fish capture to the delivery of the product to the consumer. This programme is being supported with technical assistance from the Food and Agricultural Organisation (FAO/UNDP) under the Artisanal and Inshore Fisheries Development Project.

Improvement of Fishing Craft :

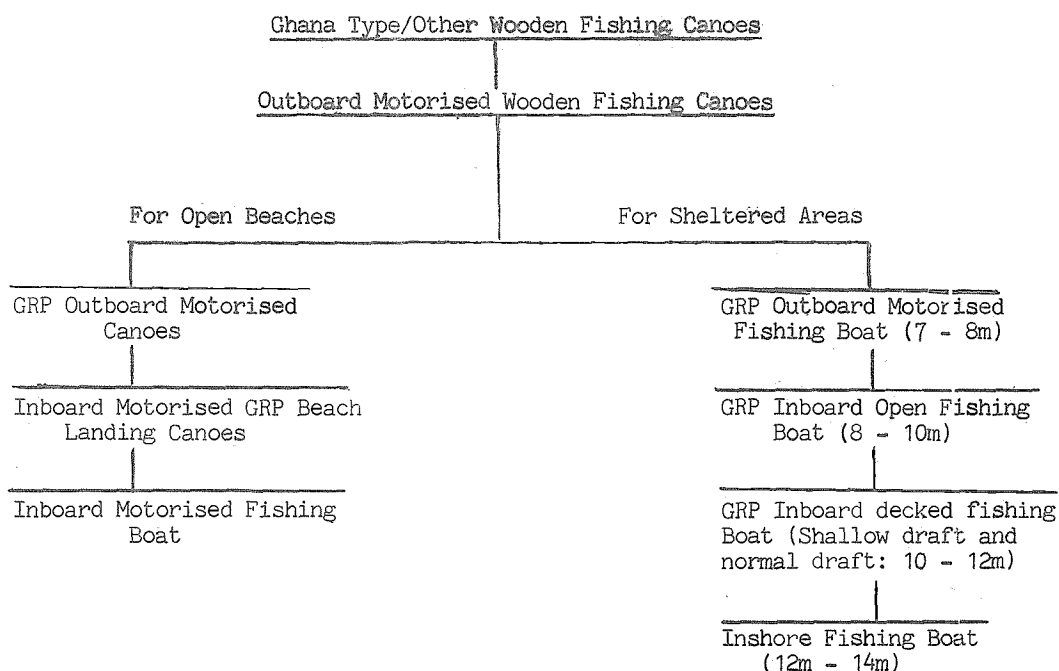
Fishing Craft

The sequence being followed for development of fishing craft varies from inland to marine and in the marine sector itself from State to State because of the topographical conditions.

Inland Waters

- Sailing Dug Canoes
- O.B. Motorised Canoe
- O.B. Motorised GRP Fishing Boat
- Inboard Mechanised Fishing Boat (7m to 10m)

Marine Waters



While considering fishing craft improvement/mechanisation, the logical approach is to make a critical study of the existing indigenous craft and examine how best these could be improved and mechanised as the fishermen are more used to these crafts and would readily accept the improvement. However, in Nigeria, the only craft which lends itself to that type of adaptation is the Ghanaian Canoe which also can be improved only to the extent of reproducing it in glass reinforced plastic for use with outboard motor. Hence, it has become necessary to introduce a new generation of fishing boats, after testing their suitability to Nigerian conditions. For some historical reasons, in the Nigerian marine fishing industry, there has existed a vast technological gap between the beach canoes and the industrial fishing fleet. It is now proposed to fill this gap with a new generation of suitable small coastal fishing boats which could operate from the river mouths, creeks and sheltered bays. While GRP outboard motorised beach canoes are being produced and made available to the fishermen for operation from open beaches, the inboard GRP beach canoes are being tried out.

For sheltered areas, GRP outboard motor boat (8m) popularly called 'Utility' fishing boat are being introduced on a large scale, while efforts are on the way to produce/introduce the inboard open fishing boat. Simultaneously, experiments have been undertaken jointly by the FAO and NIOMR into the possibilities of introducing suitable fishing boats with shallow draught, to operate in areas with shallow sand bars. Based on the success of these experiments, a new generation of fishing boats may be introduced in the next few years.

Inshore Fishing Vessels

To quicken the pace of upgrading the artisanal fishermen and make it possible for the better educated, trained and organised among them to operate larger, modern fishing vessels, the Inshore Fishing Project has been conceived, under which, forty-five (45) steel trawlers of 13.2 m class have been introduced. These vessels are meant to be operated through fishermen co-operatives in the six Marine States and a substantial number of them are already in operation. Through demonstration programmes, operators of the boat have been trained. Experience of private entrepreneurs in Nigeria who are operating fishing vessels of about same class, has also established the profitability of the operations. However, being a cooperative venture, the operation of these vessels have to be viewed against the different situations under which they function, the technical, social and economic background of the operators and the need to have to constantly guide and assist the operators at least in the initial phase. This, is being done

both at the Federal and State level and this programme is also receiving technical support from the FAO and bilateral assistance from Poland under the Nigeria - Poland Economic Cooperation Agreement.

The experience gained in implementing this project, will help greatly in formulating future plans for further development of inshore fishing in Nigeria, through governmental assistance.

Fishing Gear

For introduction of improved and modern fishing craft to be meaningful, it is necessary to supply the requisite fishing gear. Steps have therefore, been taken to standardise fishing gear requirements of various areas depending on the fishery and various types of crafts and make available the suitable fishing gear to the fishermen.

Modern fishing gear supplied to the fishermen comprised of Nylon gill net both multi and mono-filament, polyethylene gill nets, fishing floats, marker buoys, sinker leads, for canoe fishermen and fish trawl net and shrimp trawl nets, with alter doors and other accessories.

Through practical demonstration and on the job orientation, the fishermen have been familiarised with the use of modern fishing gear like trawl nets. At the extension units, the fishermen have been taught the advantages of drying synthetic nets in shade and not exposing them to damages through exposure to the sun.

Great scope exists to diversify fishing gear and methods particularly for exploiting the pelagic resources. With the introduction of mechanised fishing boats, more effective fishing gear like, encircling gill nets, mid-water trawl, small purse-seines and long lines and pole and lines will be introduced. Nigerian fishing technicians have already received training in the operation of these modern fishing gears.

FISH STORAGE, PROCESSING AND MARKETING

Fish Storage

In a tropical country like Nigeria, while attempting to boost fish production, one has also to ensure that the benefit of the increased catches of this highly perishable commodity are not lost to the fishermen through depressed prices or post-harvest loss. In fact, in some of the inland lakes, losses due to spoilage accounts at times for more than 50% of the landings. The logical answer to this problem is proper packing of fish in ice on capture and storage in cold storages on shore prior to marketing.

Ice plants and cold storages have been set up in key fishing centres and cold storages in marketing centres. Insulated fish boxes have been developed to be carried in fishing boats with ice. However, for the full utilisation of these facilities much extension work is still required particularly to induce a change from the traditional practice of smoking all the fish.

With greater awareness of the benefit of cold storage of fish and with more quantities of fish diverted from smoking for cold storage, the need will arise for establishing more and large cold-storages in the fishing centres.

However, the key to the success of these installations will lie besides their optimal usage by the fishermen, in the proper maintenance and operation of the machinery and equipment. Located as they are in remote fishing settlements, with only generators to provide electricity and bore-holes to supply water, it would really require competent and well motivated hands to keep the facilities working.

Fish Processing

Fish Smoking

The traditional practice of smoking fish needs to be improved - particularly in terms of extending the shelf-life of the smoked fish and preventing infestation. Lack of adequate capacity for smoking, has often led to the spoilage

of the commodity even prior to smoking. Well smoked fish being a wholesome product, with ready consumer acceptance, there is need for considerable extension work to ensure that the fishes are washed and cleaned properly prior to smoking and smoked under hygienic conditions.

Fisherwomen, who mostly handle the fish for smoking, being highly individualistic, still prefer to smoke the fish either inside their house or adjacent to it. Efforts to introduce community smoking kilns have met with only limited success. Several types of smoking kilns are in use from the simple open hearth to the modern NIOMR patented smoking kiln with electrical blowers. They all have their advantages and particularly the indigenous ones, which have been evolved over a period of time by local ingenuity to meet with local needs. Therefore, the idea would be to determine what is best for a certain area and assist in providing it with whatever improvement possible.

Fish Drying/Salting

Although curing of fish by sun-drying and salting are not popular, because of the climatic conditions and the high price of salt in the region, there are yet possibilities of introducing these methods on a trial basis for cray fish and thread fin and similar fishes.

Other Methods

With the likelihood of tuna forming a regular fishery in the years to come, possibility exists for canning of tuna for export and for local consumption.

FISH TRANSPORT AND MARKETING

Transport

Speedy evacuation of fresh fish from the landing centres to the markets or storages is of utmost importance particularly if the fish had not been packed in ice, to fetch better prices and ensure prime quality. However, fishing settlements being so remote and not connected by roads or linking canals, such speedy evacuation of fish has not been generally possible.

A study has been commissioned through the FAO to examine the possibility of forming linking road or canals. The problem is really vast, considering the scattered and remote fishing settlement. However, a solution is necessary at least for the more important fishing centres. In the meanwhile, plans are underway to introduce fish-carrier boats with insulated fish-holds to help to transport fish, wherever canal facilities exist.

Overland transport of fish has not posed much of a problem, with the availability of insulated and refrigerated trucks. However, as fish production increases and as more fish gets evacuated fresh from landing centres, the need will arise to strengthen the fleet of fish transport vehicles.

Fish Marketing

Being a sellers' market and a commodity which is in short supply, marketing of fish in Nigeria has not posed any serious problem. However, the benefit accruing directly to the fishermen in the sale of his catch has unfortunately, not been what it should be, because of the trade practices. With better transport facilities enabling fisherman to bring his catch directly to the consuming centres and through cooperative marketing, it would be possible to bring about a change in the situation.

ESTABLISHMENT OF MECHANISED FISHING, EXTENSION AND TRAINING CENTRES

One of the known constraints in mechanising and modernizing artisanal fishing in the lack of trained operators. The larger vessels operating in the industrial fishing fleet are manned by crew, who are required to possess the necessary certificates of competency, under the country's regulations, institutional and on board facilities have been established in the country for their training. The training requirements

of the mechanised fishing boat operators are quite different. In most cases the same person will have to handle both navigation and the engine. Furthermore, training of such an operator will have to be more vocational, 'on the job' in boat and workshop than in class rooms.

The training will also have to be localised, not necessitating movement of the trainees too far from the operational base. Three such fishermen training centres have been proposed - the first one located at Uta Ewa is expected to commence the programme shortly. With the establishment of similar centres at Koko and Lagos, the long felt need for training of fishermen at grass-root level, which is a prerequisite to the introduction of mechanised fishing, would have been met.

FISHERY SURVEILLANCE AND MANAGEMENT OF ECONOMIC EXCLUSIVE ZONE

Realising that the nations' marine fishery resources are not inexhaustible and need safeguard against indiscriminate and unauthorised exploitation, the Federal Department of Fisheries has introduced measures to license the fishing vessels operating in the country to regulate the size of vessel and nets and carry out surveillance and enforcement of the fisheries regulations.

The Department is actively involved in studies to determine the fishery resources of Exclusive Economic Zone and is following with interest the on-going survey by NIOMR of the Tuna resources of the zone, which seems to indicate good possibilities. The Department is also in the process of formulating plans for the management of the resources.

INLAND FISHERIES

Aquaculture has been accepted the world over as one of the most potential means for increasing fish production and a tropical country like Nigeria, with her immense water resources offers tremendous possibilities for fish-culture. This activity has however, unfortunately been a late starter in the Nigerian fishery scene, although fish farms have been planned and some have existed for over two decades. With the present drive for increased food/fish production, the potential that aquaculture offers to the country has acquired greater significance.

While it is widely acknowledged and known that fish farming could be successful in Nigeria, the track record of fish farming in Nigeria is not very flattering, in that there are no recorded instances where fish farming has been demonstrated as a complete commercially profitable venture.

Therefore, in establishing the 50 ha pilot fish farms in the States, the Federal Department of Fisheries will lay emphasis on the fact that these farms should prove themselves to be commercially viable propositions, which is the surest way of propagating the message of aquaculture in the country. These efforts are likely to receive technical support from the FAO under UNDP assistance.

The efforts of the State Government and River Basin Development Authorities also must be oriented toward commercial fishfarming.

Training of Personnel

With the African Regional Aquaculture Centre (ARAC) located at Aloo, Port Harcourt, Nigeria is in a very favourable position to benefit both by way of expertise and training of personnel. These supplemented by training of aquaculturists through government's own programmes, should help to produce the fish farmers needed for the country.

ESTABLISHMENT OF FISHERY BASED INDUSTRIES

For a developing country like Nigeria with ambitious plans and ample potential to develop the fishing industry, it is important that the industry becomes self-reliant for most of its development needs. While imported technology and equipment have some relevance in the initial phase of development, it will not help the industry to rely perpetually on them. Therefore, for fisheries development to be meaningful, the 1980s' should set the pace for establishment of the various fishery based industries in the country.

Synthetic Fish Net Twines

It is anomalous that a petroleum country like Nigeria, should rely on import of synthetic fish net twines from countries like Korea and Japan which are half way round the globe. As a long term measure, indigenous production of synthetic fibres should be taken up, through the petro-chemical complexes likely to be established in the country. However, as a short term measure and as a prelude it would be necessary to establish properly planned fish net manufacturing plants - which can meet fully the requirement of fishing net of the country - both Artisanal and Industrial. These plants should also have the yarn twisting machines besides other net-making and stretching machines so that in the initial phase only yarn fibres need to be imported.

Outboard Engines

It is now known that Nigeria is among the largest importers of Yamaha outboard motors in the world. Besides this make, there are several other brands of outboard motors sold in this country. It is also known that Yamaha outboard engines are being manufactured/assembled in other countries. It will be highly essential that steps are taken for indigenous production of outboard motors in the country, which will also ease the situation of spares, and after sales service.

Simultaneously steps will also have to be initiated for production of small inboard marine engines in the country.

Fishing Boat

Although, there are a few small boat yards in the country, their involvement or interest in building small fishing boat is very little. The only private company (M/s Almarine) which produces the Yamaha GRP utility boat-the W-5 version of these boats used in fishing has limited capacity.

With hundreds of these small GRP fishing boats needed for boosting fish production, the logical way to meet the need is to resuscitate the dormant government Boat Yards and encourage smaller yards to take up fabrication of GRP boat. The Department, under the FAO Artisanal Fisheries Project has already re-activated the Epe Boat Yard and GRP fishing canoes are under production there.

WELFARE OF RURAL FISHERMEN

Along with the technical assistance being extended to the fishermen, it is also necessary to help them to develop their environment, provide them with suitable housing, clean drinking water, inculcate necessary hygienic habits, and generally enable them to participate in and integrate with the development process in the country.

Although, such a community welfare activity may not, strictly be a purely fishery development activity and may cut across the activities of several sister agencies in as far as it involves the welfare of the rural fishing community, it will be up-to the fisheries agencies to initiate the process and coordinate the developments.

CONCLUSION

From the foregoing, it will be clear that tremendous opportunities exist for developing fisheries in Nigeria but there are also enormous problems to be solved and challenges to be met. The political will to bring about these developments is very much there, as evidenced by the Federal Government plans under the Green Revolution Programme. The resources are there. The present economic recession will of course call for some belt-tightening. However, with proper planning and concerted efforts of the Federal, States and Local Governments' as well as the private sector the 1980's may well be the pace setter decade for fisheries development in Nigeria.