



Enda Diapol
REPAO



Trade Liberalisation and Sustainable Management of Fishery's Sector in West Africa

Case study of Gambia



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enda DIAPOL

This report was prepared for the **Programme of Fisheries, Trade and Environment in West Africa (PCEAO)**, under the direction of Papa Gora Ndiaye & Papa Samba Diouf, by Asberr Natoumbi MENDY, Adiatou N'JIE, Amadou SAINE, Fafading Joseph NDENN, Mararr BAH, with contributions from Moustapha Deme and Djiby Thiam.



Republic of the Gambia

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PREFACE

The development of the fisheries sector is sine qua non for the realization of economic and food security policies of The Gambia. As a coastal state situated in the Eastern Central Atlantic Ocean and within an area known to be one of the most productive ecosystems for marine living animals the country is endowed with abundant fish species and diversity of which the pelagics predominate.

In recent years, artisanal fishing which has for long been carried out on subsistence basis, has taken a commercial trend as the demand for fish increases for local consumption and export. The introduction of trade liberalization schemes accompanied by tariff concessions in order to promote fish exports and increase foreign exchange earnings have also been contributing to greater involvement of the population in fish production. Reciprocal and compensatory fishing agreements signed between The Gambia and other countries allowing assorted categories of fishing vessels to operate in Gambian waters, together with prevailing artisanal activities, have unquestionably increased pressure being exerted on the fisheries resources. Information obtained has indicated that the resources, particularly the demersal stocks, are depleting due to certain harmful fishing practices both in the artisanal and industrial sub-sectors. These practices have also invariably caused a degradation of the habitat in marine and inland waters. The need to execute conservation measures is imperative.

The analysis of fisheries, trade and the environment is therefore pertinent. This elaborated and in-depth study provided in this document is a useful guide for fisheries policy makers, managers, administrators and scientists. It is an invaluable source of reference compiled by authors with diverse backgrounds and fully conversant with issues in their respective disciplines.

I wish you an interesting reading.

Hon. Bai Mass TAAL
Secretary of State for Fisheries and Water Resources

Executive Summary

The Gambia is predominantly an agrarian economy with groundnuts contributing over 65 percent of GDP. With the crippling effect of drought over the last decade, and declining animal husbandry and vegetable production, fish has become all the most important source of protein for both rural and urban dwellers and is believed to have the potential to contribute to achieving the country's greater food security policy objective and to the development of the country's economic base in general. An estimated 200,000 people are directly or indirectly linked to fisheries and its related activities and rely on the sector for their socio-economic needs (Mendy, 2003).

Fisheries has become a market driven, dynamically developing sector for the food industry and coastal states have striven to seize their new opportunities by investing in modern fishing fleets and processing plants in response to the growing demand for fish and fisheries products, Gambia has witnessed an intensive exploitation of its fisheries resources by European Union fleets coming through the EC/Gambian Fishing Agreements (1987 – 1996), the Japanese fleets through bilateral agreements and others through joint ventures with nationals. The country's main trading partners in terms of fish and fisheries products are the EU with over 70% of the total volume of exports destined for the EU.

The small scale fisheries sector intensified its fishing of the demersal fish stocks to service the export markets. This translated into an increase in the fishing pressure on exported species. The large demand for demersal fish by the export trade has made it even more scarce in local markets. Consequently this has had an impact on the price of demersal fish in local markets, which have risen beyond the reach of the average household. Households have shifted to more readily available and cheaper pelagic fish species.

Whereas trade liberalization had previously been seen as a means of acquiring much needed foreign exchange the environmental and natural resource impact of over fishing the source of growing concern, particularly as some of the developmental goals once associated with a expanded

fisheries sector, have not yet been realized in the Gambia. The study analyzes the impact of trade policies on fisheries resource management and the evolution of cost and earnings of small scale and industrial units exploiting the resources. It evaluate the impact of Fisheries Agreements and exports of fish and fisheries products on the management of fisheries resources and the fisheries sector in general and discusses how far environmental policies (national, international, sub-regional) have been effective in regulating the fisheries sector. Through an analysis of fish stocks and biodiversity, it explores how the growth of the fisheries sector, notably the activities of industrial fishing fleets, and the small scale fisheries sector, in a context of trade liberalisation, have affected the fisheries resource base of the country. It concludes by suggesting means of combating fish stock depletion and more effectively managing the fisheries sector, in a manner which contributes to sustainable development and growth. It suggests *the successful management and sustainable exploitation of fish stocks requires sub-regional co-operation amongst states sharing these stocks, yet the lack of commitment to act and the lack of political will amongst Member States have failed to see existing conventions through because fishing agreements, fishing licences and other arrangements bring millions of US dollars to Member States, making co-operation to negotiate as a bloc, disadvantageous.*

The Lomé Agreement greatly contributed to the general expansion of Gambian fisheries exports and created a dependency on the European market. Even since today, as the Cotonou Agreement comes into force, Europe remains by far the main destination of The Gambia's fisheries exports. Whilst non-reciprocal trade preferences granted by EU to ACP countries are maintained, countries such as The Gambia will continue to export fish products to EU countries. But these incentives in stimulating exports to the EU, could have adverse ecological by exerting increased pressure on the exportable fish stocks. Although the total volume of fish exported from the Gambia has increased, this has not been translated into volume of receipts to the Gambia, which have declined since the early 1990s. This is partly because catches of industrial vessels are exported directly from the fishing grounds for landing outside The Gambia. They are not reflected as exports and hence the above export figures.

The Gambian Government provides incentives (for the promotion of certain activities and exports), mainly in the form of exemptions or reductions of customs duties and internal taxes. Whilst this stimulates exports particularly of commercially high value white fleshed fish, there is an urgent need for

tighter and more effective control of the exploitation of demersal resources by the industrial and small scale operators. incentives and concessions accorded to the fisheries operators have both negative and positive impact on the resource base.

Exports of fish and fish products are expected to grow further with the implementation of the Gateway project and with the Gambia's eligibility to export to US markets under the terms of the under the US Africa Growth and Opportunity Act (AGOA). The end result is the further exploitation of the fisheries resources in the face of scarcity.

Protecting the fisheries sub-sector through tariff barriers would surely have a positive impact on the national economy, since the import of similar products would be expensive relative to domestic products.

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List of Abbreviations

ACP	Africa, the Caribbean, and the Pacific
ACS	Atlantic Coast Stratum
ADB	African Development Bank
AGOA	Africa Growth and Opportunity Act
CA	Cotonou Agreement
CCRF	Code of Conduct on Responsible Fishing
CBD	Convention on Biological Diversity
CFC	Community Fisheries Centre
CITES	Convention on International trade in Endangered Species
CPUE	Catch Per Unit Effort
DWFF	Distant Water Fishing Fleet
DOSTIE	Department of State for Trade, Industry and Employment
DOSFEA	Department of State for Finance and Economic Affairs
ECOWAS	Economic Community of West African States
EDF	European Development Fund
EEC	European Economic Community
EEZ	Exclusive Economic Zone
EPA	Economic Partnership Agreement
ERP	Economic Recovery Programme
ETLS	Ecowas Trade Liberalization Scheme
E. U.	European Union
F. O. B.	Freight On Board
FAO	Food and Agriculture Organisation of the United Nations
GATT	General Agreement on Tariffs and Trade
GDP	Gross Domestic Product
G. E. A. P.	The Gambia Environmental Action Plan
GOTG	Government of The Gambia

ICAM	Integrated Coastal Area Management
IDAF	Integrated Development of Small scale Fisheries
LDC	Least Developing Countries
MCS	Monitoring Control & Surveillance
N. E. A.	National Environment Agency
PSD	Programme for Sustainable Development
MCS	Monitoring, Control & Surveillance
NEMA	National Environmental Management Act
NEMC	National Environmental Management Council
NORAD	Norwegian Agency for International Co-operation
PRA	Participatory Rapid Appraisal
RAMSAR	Convention on Wetlands of International Importance Especially as Water Fowl Habitat
SRFC	Sub-Regional Fisheries Commission
TOR	Terms of Reference
TLS	Trade Liberalization Scheme
UNDP	United Nations Development Programme
UNESCO Organisation	United Nations Educational Scientific & Cultural
UNCLOS	United Convention on the Law of the Sea
USD	United States Dollar
WFAWA	Workshop on Fisheries Access in West Africa
WTO	World Trade Organization

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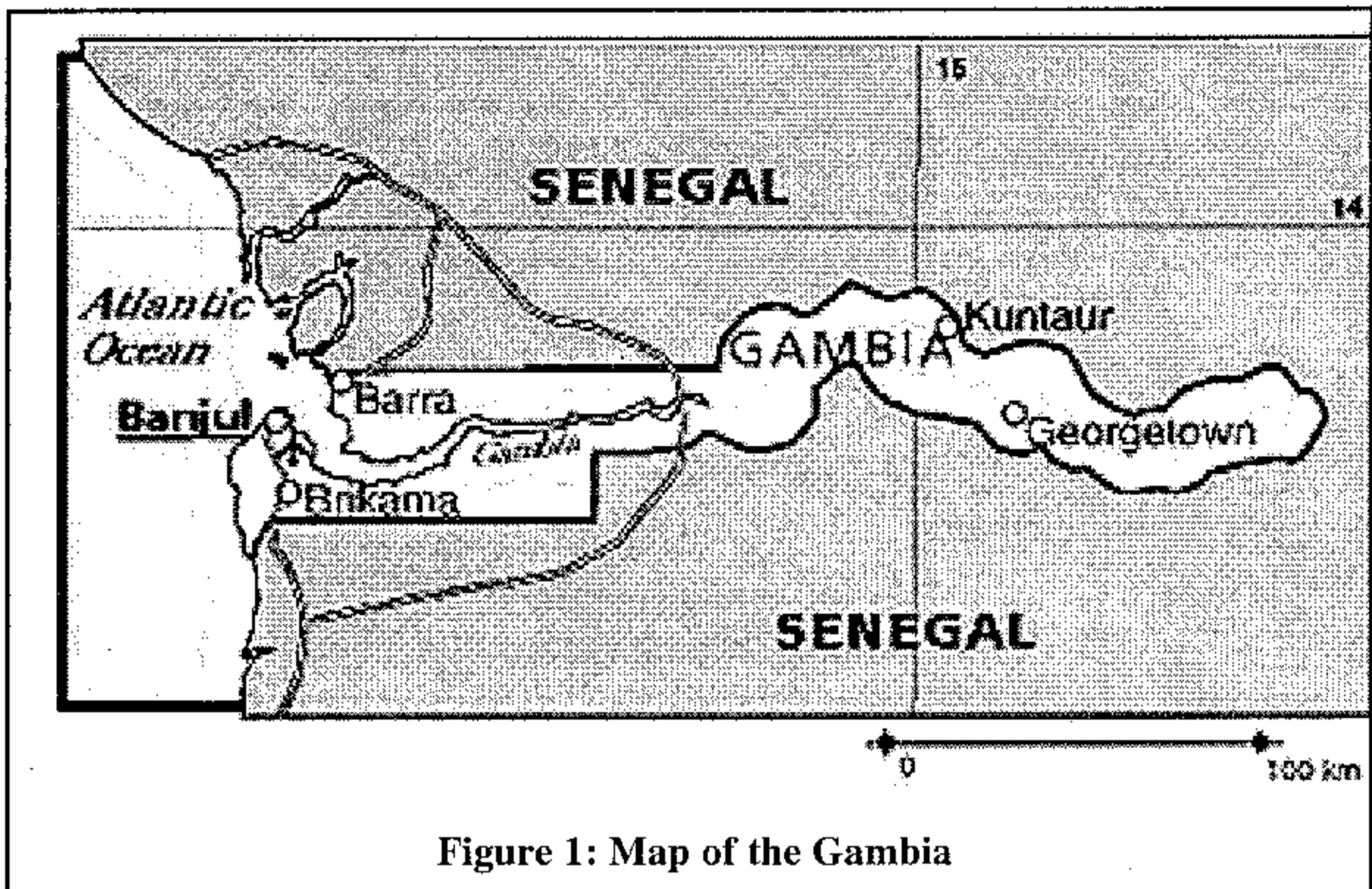
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Chapter 1

Introduction

History of the sector

The territorial sea of the Gambia extends to 12 nautical miles with an Exclusive Economic Zone (EEZ) extending to 200 nautical miles from the geographical baseline. It has a continental shelf area of approximately 4000 square kilometres and nearly 10,500 square kilometres of EEZ. The River Gambia is an estuary with its source in the Fouta Djallon highlands in the Republic of Guinea (Conakry). The total length of the River Gambia and its tributaries is about 2,500km and its length in The Gambia is 480 km, figure 1.



Two types of fisheries operate in the Gambia; small scale and industrial fisheries. Although farming was and still is the dominant occupation of most Gambians, rural communities are involved in fishing on a small-scale basis to provide fish as a source of animal protein for their immediate and extended families and friends. Traditionally, simple fishing methods were used which allowed people to fish near the shore. This practice has changed

since the realization that substantial social and economic benefits can accrue from exploiting the vast marine resources of the Gambia; the establishment of a fisheries management institution plus the provision of credit to fishermen and women to improve their fishing methods. This has triggered an intensification of the exploitation of the country's fisheries resources, with the introduction of new innovations and fishing technologies, notably the use of larger motorized canoes (97% in the ACS in 2000) that can travel further afield, with an attendant increase in fish landings (see figure 2).

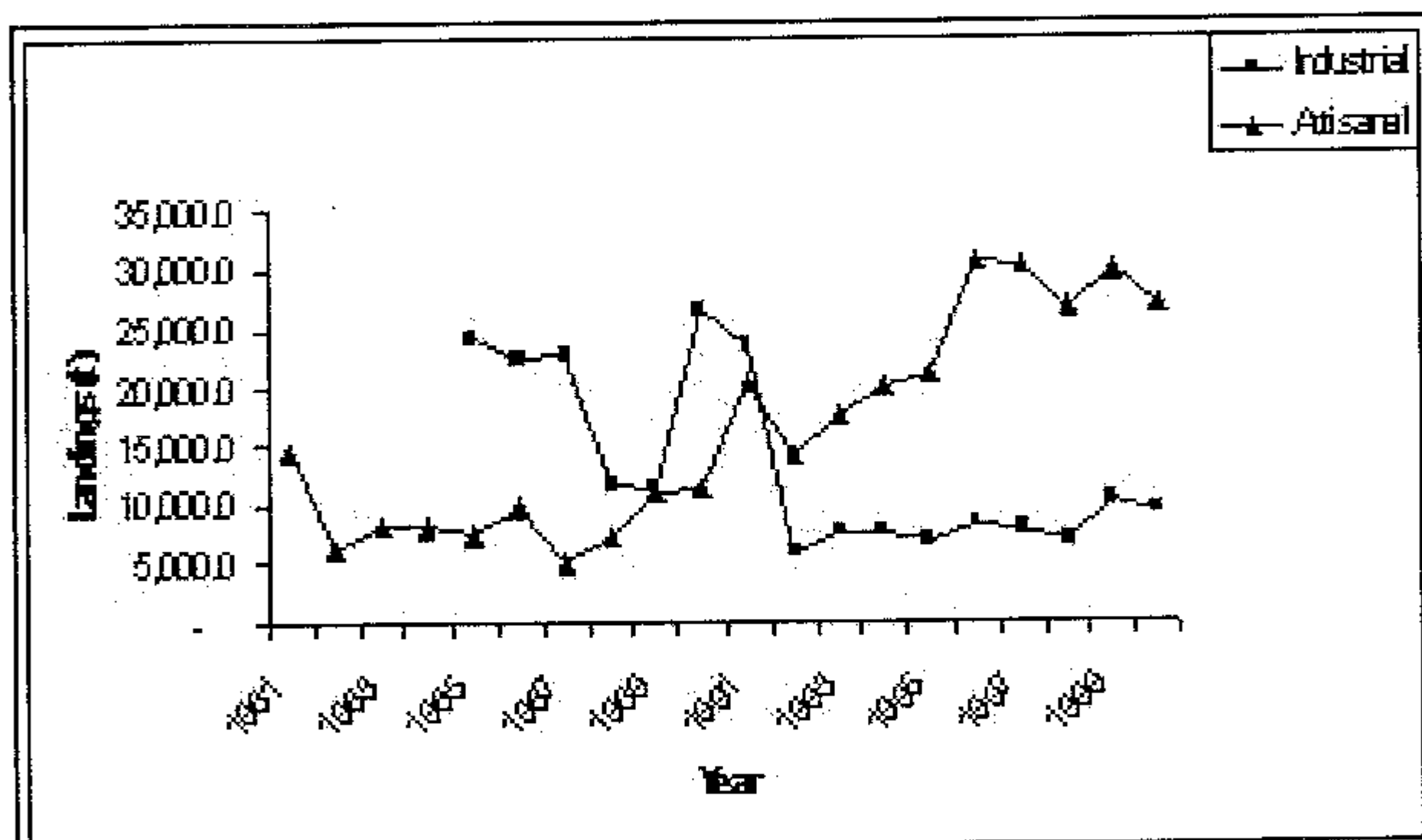


Figure 2: Total estimated landings of fish by the small scale and industrial fisheries sub-sectors

The scramble for fish further increased with the advent of an industrial fisheries sub-sector in 1967 which opened up the country's marine fisheries resources to both national and foreign distant waters fishing fleets of varying sizes and capabilities.

As can be seen from this figure, the nominal output of the industrial fisheries has by and large remained between 5-10,000 metric tonnes while small scale fisheries catches have been on the increase.

The political, socio-economic and environmental context of fishing in the Gambia

Following the first fisheries development policies that led to the creation of the Fisheries Department in the late 1960's, policies intended to facilitate the development of a fisheries sector evolved over the course of two national 5 year development plans (1975 to 1980 and 1980 to 1985) when the Government defined development objectives for the fisheries sector as a guide to public sector interventions. The broad objectives were reviewed as part of the Economic Recovery Programmes (ERP) of (1985-1989) and the successor Programme for Sustained Development (PSD) of the 1990's. The stated policy objectives were as follows:-

- To improve the institutional capacity for the management of the fisheries sector.
- To improve the legal framework governing the fisheries sector.
- To regulate industrial fishing with a view to making output consistent with a rational and sustainable approach to production.
- To develop and expand small scale fishing and increase Gambian, especially female, participation in the sector.
- To develop aquaculture.
- To improve the economic environment surrounding the fisheries sector with a view to enhancing the sector's contribution to the national economy.

These policy objectives were revised in 1994 following the formulation of a Strategic Plan for the Fisheries Sector of The Gambia. The plan was the proposed management system for the planned period 1994/1995 - 2004. The Strategic Plan is based on the knowledge that the fisheries sector has enormous potential and could make a significant contribution to the socio-economic development of The Gambia, as long as there is judicious management, rational and sustainable production methods and efficient utilization of existing, perceived to be abundant, fish stocks.

The revised national policy objectives for the development of the fisheries sector were as follows:

- To promote the rational and long-term utilization of fisheries resources.
- To improve the nutritional standards of the population.

- To increase employment opportunities in the sector;
- To increase the net foreign exchange earnings from fisheries
- To expand Gambian participation in the sector.

The Gambian economy has, until quite recently, been heavily dependent on rain fed agriculture but following the serious drought of the mid 1970's and 1980's and the resulting decline in agricultural production and in animal husbandry, the Government of The Gambia took the decision to seek redress from other economic sectors for a redress. Against the backdrop of low productivity rain fed agriculture and the country's endowment a plentiful and diverse supply of fish species: cephalopods, crustaceans and pelagic fish in the Gambia River and the marine waters, the focus shifted to fisheries, as a sector with great potential to make a substantial contribution to the socio-economic development of the Gambia.

Groundnuts remain however the single most important cash crop, and, aside from the re-export trade, also constitute The Gambia's main export product. Groundnuts account for nearly one third of agriculture's contribution to total GDP and on average nearly 32 per cent of the value of total merchandise exports (including re-exports) between 1995 and 2000. Fish and fish products account for approximately 15 per cent of export earnings (excluding re-exports). The bulk (about 80%) of fish and fish products exports are sent to the markets of the European Union. Despite the Government's efforts to encourage the active participation of Gambians in the industrial fisheries sub-sector, the domestic fisheries sector remain under-developed. Evidence of government incentives would include the Cabinet Conclusions of March 1985; notably the granting of a waiver on imports of fishing and fishing related materials and equipment and which included a tax exemption on income derived from fish and fisheries products exports, where received through bank transactions guaranteed through an irrevocable Letter of Credit.

Today, only 7 companies are operating land based processing plants and none of them is currently operating sea worthy industrial fishing vessels. The operations of these few companies have been of such low quality that the viability of most, if not all, is questionable. Concerns have been raised in many quarters over the excessive exploitation of the fisheries resources by industrial fishing operators. Given the low level of activity of the national industrial fisheries sector, this may seem paradoxical. However, as will be shown in this study, of all the industrial operators exploiting the fisheries resources of the country, foreign industrial vessels have been

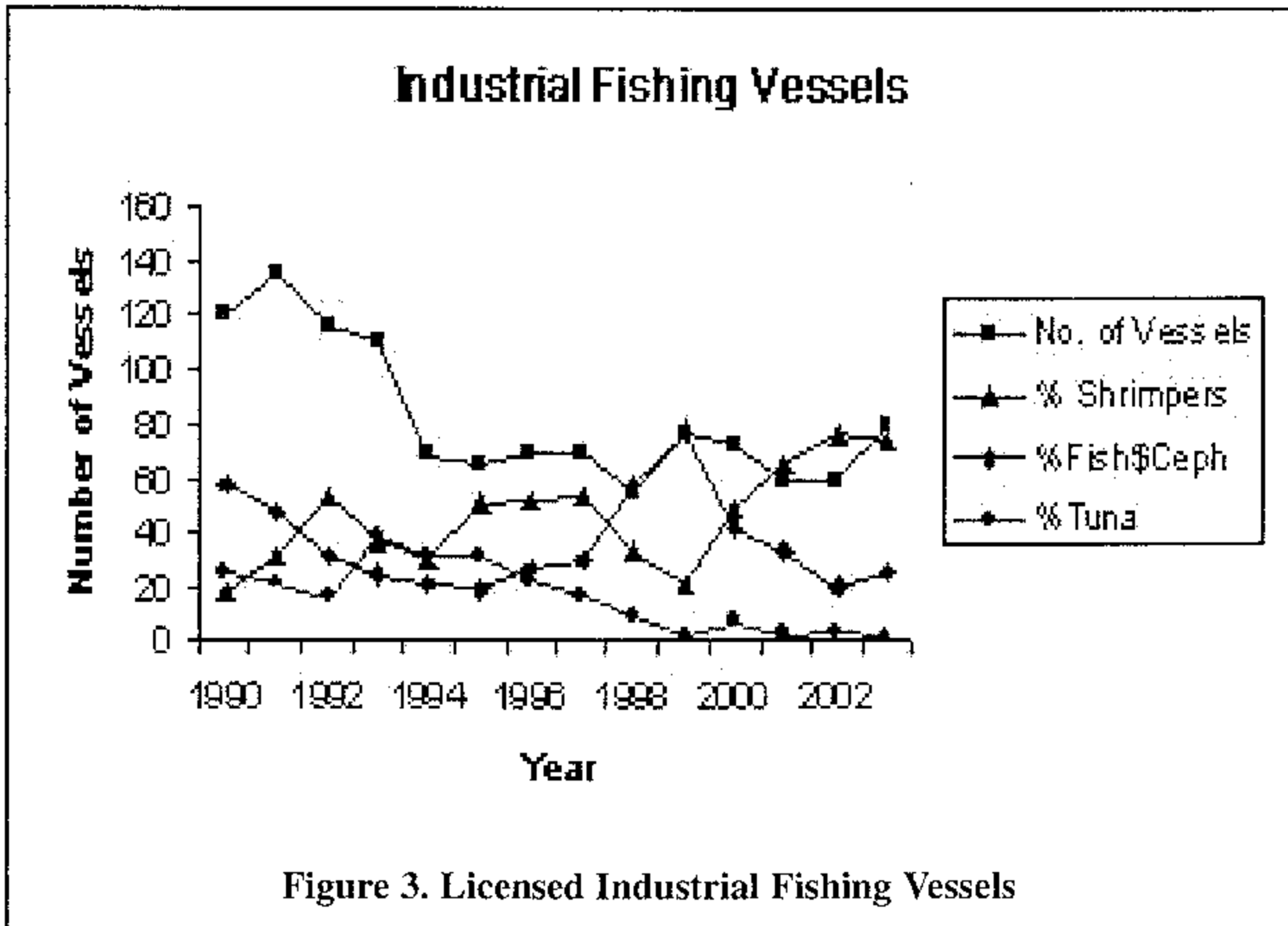
predominantly responsible for the situation referred to above as the excessive exploitation of fisheries resources.

The fisheries sector plays an important role from a nutritional perspective being the main supplier of animal protein in the diets of most Gambians who cannot afford to buy meat. Gross estimated national consumption of fish is about 25 kg per person annually compared to 8.2 kg (Diouf et al.) per average African. However, fish consumption is much higher in the coastal region than in the hinterland parts of the country.

It is estimated that the small scale fisheries sub-sector provides direct and indirect employment to 25-30,000 people and, the industrial fisheries sub-sector provides employment to between 1,500 2,000 people. The livelihoods of an estimated 200,000 people are critically dependent on fisheries and related activities (Mendy, 2003).

Although the fisheries sector is dominated by foreign fishing concerns, its contribution to the GDP is estimated at 2.5 percent (Central Statistics). This figure is popularly believed to be an underestimate because over 90% of fishing vessels licensed to fish in the Gambia land their catches in foreign countries. According to records of licensed vessels, over 90% of industrial fishing vessels legally operating in the marine waters of the Gambia are foreign vessels. These foreign operators usually make contractual arrangements with Gambian companies, in order to satisfy licensing conditions or operate by virtue of fishing access agreements with the Gambia such as the Senegalo-Gambian Reciprocal Fishing Agreement, the expired EU/Gambia Fishing Agreement, etc. The fact that The Gambia does not have a port dedicated to industrial fishing operations, is used to justify the landing and further processing of fish caught in Gambian territorial waters by the foreign industrial vessels in destinations, in countries outside The Gambia. These fish are then subsequently exported not as products of The Gambia but as products of these countries. This deprives the Gambia of the much needed foreign exchange, employment and reduces the availability of fish for local consumption. The major foreign players in the industrial fisheries sub-sector are from Greece, Senegal, Spain, Korea, China and Italy.

Partly due to the policy of systematically reducing fishing pressure on demersal fish resources, the number of licensed industrial fishing vessels has dropped from 120 in 1990 to an average of 70 during the period from 1994 to 2001, figure 3.



The industrial catches remained static at around 8,500 tonnes per year since 1992, following a pronounced decline in catches from a level of 23,000 tonnes, due principally to the cessation of fishing that targeted the small pelagic stocks and to a lesser extent, reduction in the number of licensed fishing vessels. As has been noted above, since the industrial fisheries sector is dominated mainly by foreign industrial vessels, practically all the output from the industrial fisheries sector is landed in ports of foreign countries.

Small scale fisheries revolve around the use of small fishing craft, consisting mainly of a fleet of approximately 2,000 canoes operating in marine and riverine fishing areas (Mendy, forthcoming). The estimated average of small scale catches between 1997 and 2003 is 29,000 tonnes per year. Nearly 70% of small scale landings consist of pelagic fish species. Fish catches are marketed through a distribution chain of landing points and markets, mainly situated along the coast together with those in inland towns and villages. Fish are purchased by small-scale traders who supply fish to village markets in the immediate vicinity of landing sites; by retailers who have access to insulated vans and ice facilities, and who distribute fish to inland or urban markets; and by wholesalers who supply inland and urban retailers, and traders involved in fish processing. Insufficient storage and cooling facilities in the distribution chain result in post-harvest losses which

can be as high as 20% of the catch. The main processing activity is fish smoking, often using basic technology (Njai 2000). Industrial companies with land-based processing and storage facilities for frozen products such as crustaceans, cephalopods, and certain demersals, constitute a lucrative market for small scale fishermen. Significant quantities of small scale smoked fish products of various species are exported to European markets by small-scale operators and business persons who are able to access the services of certified fish processing establishments. The latter also constitute a lucrative market for small scale fishermen for the supply of the raw fish.

Although the small scale sub-sector has been supported through various programmes that have provided credit facilities, training for Gambian youth in fishing operations, subsidized premixed fuel (ceased in June 1994) and by externally funded projects (EU, Japan and Italy), it is still dominated by non nationals, notably the Senegalese. They are the key players in the highly productive coastal fisheries sub-sector and they form the vast majority of small scale shrimp fishermen along the estuary and brackish waters of the River Gambia.

Some of the industrial and small scale fishing methods and practices have a negative impact on fisheries resources and the environment (habitat degradation). The most negative impact is on species varieties and on coastal and marine habitats. For example, increasing use of mangroves for fish smoking and domestic fuel wood has contributed to the depletion of the mangrove vegetation. The loss of mangroves causes disruption of the hydrological cycle, saltwater intrusion, destruction of habitats and nursery grounds for fish and shrimps resulting in reduced fisheries production. As shown in table 1 below, most of the commercially viable species live in delicate habitats and coastal ecosystems. The activities of trawlers and other fishing methods modify and damage these habitats and niches irreparably in some cases. As habitats become modified they become unsuitable for certain species, which become rare, migrate to other more suitable sites or simply perish.

Table 1: Species commonly exploited for commercial purposes

Species*	English or Local Name	Zones of distribution
<i>Cynoglossus spp</i> <i>Epinephelus spp.</i>	Sole Grouper	Shallow coastal waters to depths of about 300m.
<i>Sparus spp.</i>	Sea bream	Coastal demersal, from 10 – 160 m depths, on sandy, muddy and/or rocky bottoms.
<i>Mugil spp</i>	Red Mullet	Coastal waters on sandy & vegetated bottoms up to 150 m depths, occasionally entering estuaries
<i>Palinurus spp</i> <i>Carcharhinidae,</i> <i>Rhinobatidae,</i> <i>etc.</i>	Lobster Sharks	Coastal waters, estuaries, lagoons, less than 20 m (usually near surface)
<i>Lutjanus spp</i>	Snapper	Shallow coastal waters, 5– 40 m depths rocky sandy bottoms Coastal, offshore, continental shelf & slope, oceanic demersal, pelagic species
<i>Elops lacerta</i> <i>Pseudotolithus</i> <i>brachygnatus</i> <i>Pseudotolithus</i> <i>typus</i> <i>Sphyraena spp</i> <i>Pomadasy</i> <i>jubelini</i>	West African Lady fish Law croaker Long neck croaker Barracuda Sompat	Estuaries, lagoons, rocky hard bottoms 60 m, juveniles in lagoons Shallow coastal waters, estuaries throughout the year Coastal, sandy muddy bottoms, shallow waters up 75 m Coastal, sandy muddy bottoms, shallow waters up 75 m Coastal & estuarine waters, up to 100 m depths
<i>Plectorhynchus</i> <i>mediterraneus</i>	Grunt (Banda)	Coastal & estuarine waters, sandy & muddy bottoms between 20-50 m depths
<i>Ethmalosa</i> <i>fimbriata</i> <i>Sepia spp</i>	Bonga Cuttlefish	Coastal, rocky, sandy & sandy muddy bottoms to 60 m depths Coastal marine waters, estuaries, lagoons and even rivers
<i>Octopus vulgaris</i> <i>Thunnus spp</i>	Octopus Tuna	Coastal, demersal, sandy, muddy bottoms, depths 20 m – 450 m Coastal habitats from coastline to 200 m depths
<i>Penaeus notialis</i>	Shrimps	Pelagic, offshore marine, surface waters to below 100 m depths Coastal, marine waters, estuaries & lagoons

* Most, if not all, of these species are part of the shared, migratory stocks to be found in the fishing waters of the sub-region and more so in the Senegal/Gambia zone.

The expansion in the small scale and industrial fisheries sectors of the Gambia at an unprecedented rate have generated much concern about the state of the country's fisheries resources.

Table 2: Number of small scale fishing boats and fishermen in the Gambia

Year	No canoes	No fishermen
1983	1299	1319
1986	1302	1334
1990	1452	1448
1992	1501	1568
1994	1583	1649
1997	1969	1785

Source : Frame survey*, Fisheries Department

* the most recent frame survey was done in 1997

The two decades between 1980 and 2000 have witnessed considerable increases in the numbers of fishermen and boats by no less than 35 % and 50% respectively,

Table 2: The resulting pressure exerted on fisheries resources by these activities has been great. There is a broad consensus of opinion among fishers and other stakeholders of the Gambia fishing industry that the demersal fish stocks have been fully or over-exploited. With the depletion and decline in the quality of demersal resources in particular, the much awaited socio-economic benefits of fisheries (employment, net foreign exchange earning, etc.) have largely not been attained. This is because both the industrial and small scale sub sectors are dominated by foreign operators; over 90 percent of industrial fishing vessels licensed in the Gambia are foreign owned and consequently, do not land their catches in the Gambia. Secondly, the most productive coastal small scale fisheries sub-sectors are dominated by Senegalese nationals (65%).

Major constraints

The fisheries sector is besieged by a host of physical, technical, economic, institutional and social constraints which impede the positive development and growth of the sector.

The physical constraints include the absence of a Fisheries Port and the lack of appropriate industrial ashore facilities (fish factories). There is also the lack of appropriate small scale landing infrastructure; appropriate fish handling and storage facilities (including ice and cold storage); a poor fish distribution and marketing system; an inadequate number of premixed fuel stations within the country.

The technical constraints include the lack of local personnel with managerial and technical competence to operate fish business ventures (management of fish factories; fishing fleet). There is an insufficient number of tradesmen (mechanics) as well as inadequate repair and maintenance facilities. Inadequate knowledge of fish handling and processing has given rise to high levels of post-production and post-harvest losses. The lack of precise data on the biology and population of fish species with particular economic importance, is also a constraint as is the lack of a fisheries laboratory equipped with lab technicians able to conduct tests to determine safety and quality levels of the fish for domestic consumption and export and to conduct experiments on the development and promotion of new products which could bring value added.

The economic constraints include inadequate credit facilities, inadequate development and operational funds and the lack of mobility.

The institutional constraints include an insufficient number of trained high level and middle level manpower in the Fisheries Department. This has led to low levels of research activity, conflicts between small scale and industrial fisheries as well as conflicts among small scale fishermen. There is also a lack of effective and efficient machinery for the coordination of activities of all agencies (Governmental and non-Governmental) involved in the fisheries sector. The lack of adequate monitoring, control and surveillance systems is another institutional constraint.

The social constraints include the marginalization of women small scale fisher folk; the low level of literacy among small scale fisher folk and the view point that fishing is a low social status profession and the fact that fisher folk occupy the lowest social status in their communities.

Chapter 2

Objectives & Methodology

Objectives

General Objectives

The general objectives of the country study were multiple. Through the act of conducting the study and through the results it produced, the research team aimed to raise awareness about the impact of trade on fisheries and the environment among stakeholders in the participating countries and to explore the trade related aspects of fisheries resource management in West Africa. In addition it hopes to facilitate the setting up of a permanent mechanism for consultation between researchers, political decision makers, fisher folk and the civil society organisations in the sub-region and to foster dialogue between private and public stakeholders.

Specific objectives

The specific objectives of the study were as follows:-

- To produce a description of the fisheries sector in each country starting from:
 - Its economic and social importance.
 - The exploitation methods.
 - The state of its resources.
 - The trade of fisheries products.
- The social, economic and political dynamics of actors involved in the sector.
- To produce a description of trade policies that have impact on the management of fisheries resources.
- To determine the impact of fish exports on the evolution of the fisheries sector.
- To identify ways and means of protecting threaten species and promoting the sustainable management of the fisheries sector.

- To identify and evaluate what the consequences of an evolution of multi-lateral trade agreements are likely to be on the exploitation of marine resources (mainly export resources): specifically what the consequences of the WTO, Cotonou and AGOA Agreements are likely to be.
- To evaluate the impact of fishing agreements on fisheries resource management.
- To determine what points of convergence and divergence are necessary for effective regional cooperation on fisheries policy with other West Africa Countries.

Study Methodology

Overview of Study Approach

A multidisciplinary approach was adopted for the country-study. Apart from conducting the study from a conventional research perspective, results from several participatory dialogues and in-depth interviews were also incorporated. The study was divided into four major areas as given below. The Terms of Reference for the study areas, as listed in annex 1, were:

- To study to determine and analyze the impact of trade policies on fisheries resource management and the evolution of cost and earnings of small scale and industrial units exploiting the resources.
- To study and evaluate the impact of Fisheries Agreements and exports of fish and fisheries products on the management of fisheries resources and the fisheries sector in general.
- To determine and analyze environmental Policies (national, international, sub-regional) related to fisheries.
- To conduct a stock and biological assessment.

Due to the multifaceted nature of the study, several methodologies were used to determine and analyze the impact of commercial and environmental policies on bio-diversity, to study the financial and economic viability of units of production and to determine the level of exploitation of fish stocks.

Study Methodology and Data Collection Methods

The hypothesis developed for the study was that trade liberalization had an impact on environmental and socio-economic variables of the Gambian fisheries sector. In search of indicators to support the assumption, the study team reviewed relevant literature and conducted primary research and data

gathering, analysed socio-economic impacts and studied all policy objectives and laws pertaining to the regulation of the fisheries sector.

To determine levels of exploitation of selected fish species, catch per unit effort (CPUE), commercial and fisheries potential surveys were examined and the length/size distribution of some species noted. Several data and information gathering methods were used, as outlined in the TOR, to make it possible to assess the impact of trade and environmental policies on biodiversity and on the financial and economic viability of small scale and industrial fishing units.

Chapter 3

Trade Policies and their Socio-Economic Impacts

Fisheries and Trade

Fisheries has become a market driven, dynamically developing sector for the food industry and coastal states have striven to seize their new opportunities by investing in modern fishing fleets and processing plants in response to the growing demand for fish and fisheries products (Code of Conduct for Responsible Fisheries). The requirement by that UNCLOS for distant water states to be given access to “surplus” resources of coastal states paved the way for the operation of distant waters fishing fleets in coastal fishing grounds such as those of the Gambia. Recognizing the benefits of trade and its potential to contribute to the improvement of living standards of Gambians, the Gambia has been participating in global trading and has thus opened up its fisheries resources to trade. It has since witnessed an intensive exploitation of its fisheries resources by European Union fleets coming through the EC/Gambian Fishing Agreements (1987 – 1996), the Japanese fleets through bilateral agreements and others through joint ventures with nationals. The country’s main trading partners in terms of fish and fisheries products are the EU with over 70% of the total volume of exports destined for the EU. It should be noted that trading in fish like other export merchandise, is liberalized and governed by prevailing market forces. The volume of fish exports has been fluctuating with a declining trend. In 1993, a total of 1,598 metric tons of fish was exported, valued at approximately 25 million Dalasis while exports in 2002 stood at 932 metric tonnes valued at 21 million Dalasis. The basis of evaluating these prices is the FOB price. It should be noted that catches of industrial vessels are exported directly from the fishing grounds and are therefore not reflected as exports and hence the above export figures. This situation is expected to change with the resolution of certain sector specific constraints such as the lack of a fishing port and low capacity for producing value added products. When these are resolved, increased benefits (socio-economic, macroeconomic) will be realized from the catches of the industrial fisheries sub-sector.

National Trade Policies

Policy formulation in specific fields of activities is the responsibility of different Departments of State but the Department of State for Trade, Industry and Employment (DOSTIE) has the overall responsibility for the formulation, coordination, and implementation of trade, investment and industrial relations policy, which are determined in conjunction with the Department of State for Foreign Affairs. Tariffs are set by the Department of State for Finance and Economic Affairs (DOSFEA) and administered directly by the Customs and Excise Department (GOTG, 2004).

The Gambia recognizes the importance of trade and investment liberalization for long-term development prospects; the pace of reform has increased since the late 1990s. In addition to the reduction of tariff barriers, the Government sees the divestiture of state assets, and the implementation of clear regulatory frameworks as essential conditions for the development of the private sector, considered to be the main source of economic growth in the medium and long term. The Government's intention is that policy reforms, together with initiatives such as the development of free zones and the provision of investment incentives, will make The Gambia attractive to local and foreign private investors, and in turn encourage employment creation and the diversification of the relatively narrow productive and export base.

In recent years, the Gambia Government has implemented structural adjustment programmes as explained in the preceding paragraphs (see table 3 below), to stabilize and reorient the economy in order to face the challenges of development. These included in the first instance the restructuring of the economy to increase foreign exchange earnings through enhanced trade and trade liberalization as embodied in the set of WTO agreements to which the Gambia is a signatory. A brief account of relevant agreements is provided below.

Table 3: The Gambia: Summary and Timetable of Macroeconomic and Structural Adjustment Policies, 1998-2000

Objectives and Policies	Strategies and Measures	Implementation Period	Technical Assistance
Stimulate private investment and increase export activities in fishing sector	Develop a fisheries resource management program, including small scale sub-sector.	1998	
Reduce distortions and promote private sector activity	Maintain liberalized trade and pricing systems.	1998-2000	World Bank/ UNCTAD
	Develop new investment incentive system, integrated in the tax code.	1998-99	
Stimulate private investment and increase export activities in fishing sector	Simplify procedures for creating new enterprises and conducting business in The Gambia	1998-99	World Bank
	Develop a fisheries resource management program, including small scale sub-sector.	1998	
	Update feasibility study of establishing a fisheries port.	September 1998	

Multilateral Trade Agreements

The Gambia is a signatory to multilateral, regional and bilateral trade agreements. It has maintained a liberal trade regime since the introduction of the Economic Recovery Programme (ERP) in 1985/86 and more so since the country became a member of the World Trade Organization (WTO) in October 1996. This measure has led to the gradual but progressive reduction in tariffs and the complete elimination of export licences and quotas. Through its liberal trade regime, The Gambia has over the years established and consolidated its trading links with the EU (the main trading partner), USA, Asia countries and the ECOWAS sub-region.

The Lome Convention and Trade Liberalisation

The increasing externalisation of the fisheries sector is also largely linked to the trade mechanisms aimed at boosting exports in an adjustment context. Such is the case, for example, of the Lome Convention linking Europe and ACP (Africa, Caribbean and Pacific) countries. This Convention concluded in 1982 instituted a customs duties exemption regime applicable to most products originating from ACP countries. Being covered by this regime, fisheries products became clearly more competitive. Like other ACP countries, such as the neighbouring Republic of Senegal, The Gambia's fisheries products also benefited from the customs duties exemption regime of the European market. Between 1988 and 1997, exported volumes of fish rose from 1,068 tons to about 2,063 tons (a 100% increase in one decade!).

Thus, while the Lomé Agreement greatly contributed to the general expansion of Gambian fisheries exports, it also created a dependency on the European market. The system of trade preferences reinforced the significance of the European market in the absorption of Gambian fisheries exports. Today, Europe remains by far the main destination of The Gambia's fisheries exports, receiving 1,063 tons out of the 1,330 tons exported in 1999 - that is about 80 per cent of the total. Markets in the sub-region and the rest of Africa received less than 300 tons and the Asian and US markets remain marginal even today. Trade statistical data collected by the Fisheries Department's Statistics Unit for 2003 (five years later) indicates the same trend, for example out of 286.6 tons of fisheries products exported, 245.6 tons (86%) went to European markets. The fisheries products destined for European markets comprise almost exclusively of fresh frozen fish, cephalopods and crustaceans (mainly shrimps) while primarily smoked and dried fish including dried shark meat are sent to African markets.

Now, the new Lomé Convention will erode or eliminate those advantages because it provides for the phasing out of ACP countries' trade advantages. Moreover, the process towards custom tariff reduction initiated under the aegis of the World Trade Organisation (WTO) could speed up the erosion of these advantages. Trade liberalisation could also pose a threat to The Gambia's export of fisheries products considering that these exports are destined almost exclusively to the European market.

The Cotonou Agreement

The Gambia is a party to the Cotonou Agreement (CA), a new partnership agreement between ACP States, the European Community and its member

States whose objectives are to “integrate the economies of ACP countries into the world economy” through what is known as Economic Partnership Agreements (EPAs). In the Agreement, the Parties agree to conclude new World Trade Organisation (WTO) compatible trading arrangements, progressively removing barriers to trade between them and enhancing cooperation in all areas relevant to trade. In order to facilitate the transition to the new trading arrangements, the non-reciprocal trade preferences applied under the Fourth ACP EC Convention shall be maintained during the preparatory period for all ACP countries, under specific conditions defined in the Agreement. At the Doha Ministerial Conference, WTO members were granted a waiver from the obligations under Article I: 1 of GATT 1994 (MFN treatment), requested by the parties to the Agreement, for the period up to 31st December 2007. By then, new WTO-compatible trading arrangements are to be concluded, removing barriers progressively between the parties and enhancing cooperation in all areas relevant to trade, including the formation of free-trade areas within a transitional period. During this period, the EU is to enter into negotiations with ACP countries, aimed at establishing partnership agreements on a bilateral basis, or between the EU and regional groupings (regional economic partnership agreements) commencing by January 2008 at the latest.

Under the existing transitional scenario, in which the non-reciprocal trade preferences granted by EU to ACP countries are maintained, countries such as The Gambia will continue to export fish products to EU countries, with all the implications of incentives that this entails. However, these incentives represent consumption subsidies as they have the tendency to reduce the costs for EU consumers. According to de Moor A.P.G (1997), *“subsidies comprise all measures that keep prices for consumers below the market level or keep prices for producers above the market level or that reduce costs for consumers and producers by giving direct or indirect support”*. Just as the study tries to demonstrate in Section 7.2, that EU fisheries access agreements represent production subsidies, a similar argument is applicable to the non-reciprocal trade preferences. These subsidies have adverse ecological effects and give rise to economic distortions. The negative ecological effects arise from the fact that the incentives encourage consumption which in turn also encourages production, culminating into increased pressure on the exportable fish stocks.

In future when liberalisation of trade between ACP countries and the EU is fully achieved and the reciprocal trade preferences are applied, drastic

changes to this situation are not expected. This is because of the disparities in the purchasing powers of the peoples of ACP and EU countries and in the values of their currencies will for a long time ensure that EU consumers of fish products from ACP countries will continue to enjoy preferential access to these products which they can more easily afford.

The African Growth Opportunity Act

On 1 January 2003, the Gambia became eligible to benefit from the U.S.A. African Growth and Opportunities Act (AGOA). While The Gambia is fully committed to exploring these benefits, for the time being, the priority is to target fisheries and horticultural products for export to the US market in the short to medium term. In the meantime, efforts are concentrated on ensuring that that products emanating from the sectors meet the standards and quality control requirements of the US market.

However, the prospect of Gambian fish products being able to penetrate the US market remain slim, chiefly due to the competitive advantage they enjoy in EU markets and the less favourable competitive disadvantage from which they suffer in US markets. In the unlikely event that exporting fish to the US becomes a possibility as a result of AGOA, this would be yet another source of increased pressure on the the Gambia's export fish stock base.

ECOWAS

The Gambia has been a member of ECOWAS since its inception on the 28 May 1975. It was initially envisaged that free trade between ECOWAS countries would be achieved by 1996 through the Trade Liberalisation Scheme (TLS) adopted in 1990. However, revisions to the ECOWAS founding treaty, introduced in 1993, postponed the creation of a free-trade area to 2000, and the establishment of economic and monetary union by 2005. The Gambia is committed to implementing ECOWAS protocols, particularly on the free movement of persons and goods. It has ratified almost all the ECOWAS protocols except the one on extradition and value-added. However, like many other ECOWAS Member States, The Gambia's level of implementation of the ECOWAS Trade Liberalization Scheme (ETLS) is slow and limited. This has significantly affected the volume of intra-ECOWAS trade.

Although this has restrained the freedom of movement of goods between the countries of the region, the slow and limited extent of the implementation of the ECOWAS Trade Liberalization Scheme has enabled countries like The Gambia to regulate the flow of raw unprocessed fish out of the country.

The overall effect of this may be a tendency to reduce the exploitation of export fish species, albeit limited.

Bilateral agreements:

The Gambia has signed almost 12 bilateral agreements on trade and investment with different countries, notably with Tunisia, Mauritania, Guinea Bissau, Cuba and Senegal. Investment agreements were signed with State of Qatar, United Kingdom and Northern Ireland, the Netherlands, Guinea-Conakry, Mauritania and Ukraine.

Evolution of operating accounts of fishing units

Energy costs

October 2002 saw an increase in domestic pump prices of petrol from D9.75 to D22.00 per litre, diesel from D6.75 to D15.00 per litre, and Kerosene from D5.25 to D9.00 per litre. This increased the overall cost of fishing. Consequently the costs of transportation and electricity have increased as have marketing related activities.

Costs and Earnings of the Main Fishing Gears

Limited data on the costs and earnings of small scale fishing units was available to the study whilst virtually no data was accessible on the industrial units as most if not all industrial vessels are operated by foreigners who are not based in the Gambia. This accounts for the difficulty in establishing trends relating to costs and earnings of fishing units operating in Gambian waters.

Nevertheless, with the examination of certain key indicators of operating costs, it is still possible to discern broad trends in the fish processing industry destined for European export markets. In the last 5-10 years, the market for fish (raw material) for processing and export to the EU has been unstable. The difficulties faced by the land-based companies are manifold; these include diminishing working capital which make it difficult for them to procure fish from fishermen, decreasing output and unprofitable operations due to the high cost of inputs. These have provided justifications for the export of raw and unprocessed fish species for sale in Senegal at higher prices than local companies have been paying. The few fish processing companies that operate do not seem to be able to afford these price levels. They live with the fear of the constant threat of closure having over them. The higher prices that fishermen can get by selling to Senegalese buyers, encourages them to catch more and more fish. This consequently puts pressure on the existing fisheries resource base.

Due to the lack of data, it has not been possible for the study to present precise information on trends in the operating accounts of the fishing units in The Gambia. However, it is a widely acknowledged fact that the profit margins of most of the small scale fishing units has been diminishing. Circumstantial evidence suggests that the fall in catch per unit of effort of many species, the high (often unaffordable) cost of fishing inputs and the general macro-economic environment have all been quite unfavourable (because of high exchange rates and deteriorating balance of trade resulting in high rates of inflation which the country has experienced in the last decade). The bulk of the fish produced by the small scale fisheries sector is marketed and consumed locally by consumers whose purchasing power has also been eroded by the same macroeconomic phenomena. As fishermen and women have generally not passed on all these cost increases to the local consumers, they (the fisher folk) have as a result been gradually impoverished. The information gathered during interviews with the various stakeholders corroborates these observations.

Impact Analysis

Assessment on Exploitation, Conservation, and Management of Fisheries Resources

The Gambian Government provides incentives (for the promotion of certain activities and exports), mainly in the form of exemptions or reductions of customs duties and internal taxes. An 18% export tax is levied on all items, though exports of fish, fish products and groundnuts, and all exports to the European Union, are exempted. An effect of the incentive on fish exports is to encourage the exploitation of the export species.

While there are prospects for an increase in the exploitation of small pelagic fish and an increase in aquaculture production in the country, there is an urgent need for tighter and more effective control of the exploitation of demersal resources by the industrial and small scale operators. According to available data from scientific analyses and resources surveys conducted in Gambian waters, demersal fish resources, are fully if not overexploited.

The scarcity of the so called white fleshed fish, mainly the demersal species, has prompted both small scale and industrial fishers to poach each other fishing zones in search of fish thus causing conflicts between the two operators. Reports by several small scale fishermen have revealed that industrial fishing fleets have been making incursions into the 7 miles limit mainly reserved for small scale operators. The discussions held with stakeholders in the fisheries sub-sector have revealed that The Gambian

fisheries sector has been enduring heavy fishing pressure from distant water fishing fleets (DWFF), thus making it difficult for the small scale fleet to easily access fisheries resources.

The incentives and concessions accorded to the fisheries operators have both negative and positive impact on the resource base. The subsidies on fuel and duty/tax concessions on the importation of fishing and fishing related equipment/materials as commissioned by Cabinet Conclusions of March 1985 have encouraged the entry of numerous operators into the sector. The small scale fisheries sub-sector has in recent years experienced a heavy influx of fishers, from 1299 canoes and 1319 fishermen in 1983 to 1969 canoes and 1785 fishermen in 1997. For sustainable fish production to take place, the rate of exploitation must be reduced and maintained under the level that corresponds to the MSY in the country.

It may be argued that trade incentives and concessions are good for the nation as it allows for exporters to easily access foreign markets but as the demand for fish increases, the greater is the pressure exerted on fish resources. Exports of fish and fish products are expected to grow further with the implementation of the Gateway project and with the Gambia's eligibility to export to US markets under the terms of the under the US Africa Growth and Opportunity Act (AGOA). The end result is the further exploitation of the fisheries resources in the face of scarcity.

The benefits of most if not all fishing access agreements to the countries of origin of the distant fishing fleets, are greater than the amounts in cash and in kind received by The Gambian Government.

Socio-economic Impact of the various Policies and Agreements on Stakeholders

The Gambia is predominantly an agrarian economy with groundnuts contributing over 65 percent of GDP. With the crippling effect of drought over the last decade, fisheries and tourism have become more important. With the drought, declining animal husbandry and vegetable production, fish has become all the most important source of protein for both rural and urban dwellers and is believed to have the potential to contribute to achieving the country's greater food security policy objective and to the development of the country's economic base in general.

As a multipurpose activity, fishing is an essential component of rural development with strong linkages to The Gambia's economy and society. Fisheries have the potential to contribute to the sustainable growth of the

national economy and to the reduction of the balance of payments deficit and to employment generation. An estimated 200,000 people are directly or indirectly linked to fisheries and its related activities and rely on the sector for their socio-economic needs (Mendy, 2003).

The provisions of the Cotonou Agreement, which offer a non-reciprocal advantages allowing fish and fish products from the Gambia to enter the EU markets duty-free, exert an increased pressure on the fisheries sector.

Impact on Balance of Trade and Foreign Exchange Earnings

Fish exports have enormous potential to contribute substantially to the economy in terms of foreign exchange earnings. In 1986-87, 1,543 metric tons and 1,817 metric tons, valued at US\$ 27 million and US\$ 39 million respectively, were exported to markets in the EU such as Spain, Italy, UK, and France, as well as to Nigeria, Ghana, Canada and Hong Kong (WFAWA, 2001). Fish and fisheries product exports in 2002 were worth about 44.4 million and approximately 0.3 million US\$ was exported to the US market. Since 1984 the quantity of fish products has been fluctuating considerably in following a downward trend, however, the market value of those exports continued to increase to tune of D44.4 million in 1997, as noted above. The value decreased slightly in the following year, but was still about 5 times higher than the value of any other export in 1986. This would earn the country the most needed foreign currencies and reduce the balance of trade deficit, which has been in billions of Dalasis.

Protecting the fisheries sub-sector through tariff barriers would surely have a positive impact on the national economy, since the import of similar products would be expensive relative to domestic products. This would reduce the importation of certain goods and reduce the demand for foreign currencies required to meet the cost of importation. Since there would be less demand on similar products in the country, this would therefore have a positive impact on the balance of trade.

The policy to encourage private sector involvement in the fisheries sub-sector is a good step in the right direction since the private sector is the engine of growth in any economy. Stimulating investment in the private sector would lead to job creation, increase exports and reduce the balance of trade deficit in the country. Reducing distortions in the domestic market would give national as well as international investors greater confidence in the sub-sector and increase the country's credibility in the international trade arena.

The absence of an operational standards bureau for the development and enforcement of national standards may have considerably negative impact on the country's ability to control the quality of imported goods that could easily contribute to a glut in the domestic market at the expense of the local fisher folk and consumers. Certainly the social and economic costs would be much higher than all the financial benefits obtained by the few importers in the country. Non-regulated sectoral growth should not be condoned in the economy. Presently the market is flooded with imported chickens which are used as a substitute for fish and fisheries products. Furthermore, the import of cheap sub-standard food items would put unwarranted pressure on the demand for hard currencies thus making them difficult to get. This would no doubt push up the price of foreign currencies, thereby negatively affecting the exchange rate and exerting inflationary pressure on the economy. This type of Inflation would increase poverty, food insecurity, and contribute to the deterioration of the socio-economic status of most Gambians, and of course would increase the already deteriorating balance of trade deficit.

Chapter 4

Environmental Policies (National, International, Sub-Regional) related to trade on Fisheries Products and their Impacts

Policies/Conventions

There are over 18 International, regional and sub-regional conventions, agreements and arrangements to which The Gambia is party. However, five of them are of particular relevance to fisheries, trade and the conservation and sustainable utilisation of natural resources as well as for bio-diversity.

National environmental legislation and plans

Fisheries Act 1991

In 1977, the Government enacted the Fisheries Act as the legal basis for concerted a public sector involvement in the management of the fisheries sector and the development of a fishing industry on a planned basis. The Act was revised, amended and re-enacted by the Parliament in 1991 giving birth to the Fisheries Act 1991. It must be underscored here that ten years since its last re-enactment, the Act is deficient in many ways with regard to the emerging issues of fisheries and coastal resources management. The Fisheries Act 1991 needs to be reviewed and amended accordingly.

Fisheries Regulations 1995

The Fisheries Act together with the Fisheries Regulations 1995 provides the legal frameworks for harmonising private and public sector roles in the development of the fisheries sector and they also act as a guide to the Department on the technical aspects of implementation of fisheries management plans. The Inspectorate unit of the Fisheries Department, responsible for the licensing of industrial fishing vessels and the monitoring of fish processing establishments, enforces provisions of these legal instruments.

Although the Fisheries Regulations of 1995 prohibits the use of certain fishing methods, it has provisions for the conservation of only a few species such as lobsters. Part V, sections 14 and 15 of the Fisheries Regulations 1995 relates to conservation measures which impose restrictions on fishing

area and the type of fishing gear that can be used by industrial fishing vessels. The regulations need to be revised in order to integrate the emerging conservation needs, considering the deteriorating trends in the state of fisheries resources in The Gambia.

National Environment Management Act (NEMA) 1987

The National Environment Management Act (NEMA), enacted by Government in 1987 whose implementation is being guided by the National Environment Management Council (NEMC) established in 1993 and chaired by the Head of State provides the legal and decision-making framework for environmental planning and management.

The Gambia Environmental Action Plan (GEAP) 1992

In recent decades environmental issues have become increasingly important especially with regard to natural resources exploitation. Environmental degradation has escalated rapidly and it has been recognised that environmental deterioration and depletion of natural resources are causing more poverty with disastrous effects in many parts of The Gambia. The Gambia Government responded to the call for full national commitment to mitigating this trend in environmental degradation by enacting the Gambia Environmental Action Plan (GEAP), which was adopted in 1992 before the Rio Summit on Environment and Sustainable Development. The GEAP became the framework for environmental management guiding the national commitment to the judicious use of the environment and natural resources (including coastal and fisheries resources). Phase I of the GEAP was implemented from 1992 – 2001 and succeeded to a large extent in improving economic performance, the quality of human life and restoring, maintaining and enhancing ecological processes, natural resources and the cultural and natural heritage (State of the Environment Report, 1997). The implementation of Phase II of the GEAP, which began in 2001, continues apace.

The Vision 2020

The national mission statement of the **Gambia Incorporated Vision 2020** (1996-2020) provides a vivid picture of The Gambia's vision for biodiversity conservation, sustainable natural utilisation and environmental management. It envisages "*guaranteeing a well-balanced ecosystem*" and the Bio-diversity Vision of a "*society in harmony with nature*" plus the Overall Bio-diversity Goal which is "*to create a society that sees itself as an integral part of nature, recognises different life forms, sustainably uses*

natural resources, maintains for posterity a nurturing and dynamic world rich in bio-diversity”.

Sub-regional conventions

The following sub-regional and international conventions have been ratified by The Gambia :

The Convention on Co-operation in the Protection and Development of the Marine and Coastal Environment of the West and Central Africa Region (WACAF)

The objective of this Convention is to protect the marine environment, coastal zones and related internal waters falling within the jurisdiction of the West and Central African region. The Gambia adhered to this Convention on 5 February 1985 and actions undertaken within the framework of this convention include the formation of a Coastal and Marine Environment Working Group in 1995. Membership in this Working Group comprises all stakeholders (including the Fisheries Department) in the coastal zone and its mandate is to manage the coastal zone and to advise Government and the National Environment Management Council on issues related to the coastal zone. In 1997, the Working Group developed a Coastal Profile and an Integrated Coastal Area Management Plan and Strategy for The Gambia with funding from the FAO.

Convention establishing the Sub-Regional Fisheries Commission

The Sub-Regional Fisheries Commission (SRFC), an inter-governmental organisation for co-operation in coastal and fisheries resources management and development was created on 29th march 1985 through a convention. The founding states were: Cape Verde, The Gambia, Guinea, Guinea Bissau, Mauritania and Senegal. Sierra Leone whose application for membership of the Commission was accepted by all member states officially became a member at the 15th Ordinary Session of the Conference of Ministers held in Dakar, Senegal, from the 20th – 24th February 2004. The motivation behind the establishment of the Commission was the fact that several fisheries' stocks are either shared by one or two states or are highly migratory or both. Furthermore, the fisheries sector is an important source of revenue for the national economies and for the national treasuries of the states of the sub-region. The successful management and sustainable exploitation of fish stocks requires sub-regional co-operation amongst states sharing these stocks. The objectives are to strengthen co-operation and co-ordination between Member States by:

- Harmonising of policies on preservation, conservation and exploitation of marine resources in the sub-region;
- Adopting a common position at international fora
- Encouraging the establishment of joint bodies and the signing of fishing agreements between states in the sub-region
- Developing sub-regional co-operation in the area of surveillance;
- Developing the capacity of states to conduct research at the sub-regional level.

In the 18 years since the Commission was set up, it has fashioned and adopted several instruments for harmonising aspects of the fisheries policies of Member States. The Gambia has been an active Member of the Commission and occupied the rotating chairmanship of the Conference of Ministers between 1996 and 1998. The Commission's Members have enacted a number of important conventions related to fisheries and coastal resource management, notably:-

The convention regulating the conditions of access and exploitation of marine resources along the coast of SRFC Member States which was signed on 14 July 1993 in Cape Verde.

The convention on sub-regional cooperation in the exercise of the right of maritime hot pursuit at sea was adopted on 1 September 1993 in Conakry.

A Protocol was adopted on 1st September 1993, which defines the practical modalities for co-ordinating fisheries surveillance operations between Member States within the framework of the Convention on Maritime Hot Pursuit.

The Commission has developed and implemented a number of fisheries resources management and development projects related to sub-regional research and training. A project for the establishment a sub-regional register of industrial fishing vessels is in its final stages.

The most potentially significant single initiative of the Commission, has been establishment of a mechanism to enable Member States to conduct joint negotiations of fishing agreement with third parties seeking access to

fisheries resources of member states. However little progress has been made with his initiative because of the lack of commitment to act and the lack of political will amongst Member States who have failed to see it through. This is because fishing agreements, fishing licences and other arrangements bring millions of US dollars to Member States. For example, financial compensation granted by the EU within the framework of bilateral Fishing Agreements, brought in 50 million USD between 1992 and 1995 alone.

International Conventions

Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)

The Gambia signed up to this convention on 26 August 1977 and The Gambia's commitment to its implementation is evidenced by the passage of the Wildlife Act 1977. This Act is now being amended to incorporate requirements of the Convention on Biological Diversity and the CITES Convention to regulate trade and to prevent depletion of wildlife resources. In 1996 The Gambia sent a report covering three years of implementation of the programme under the Convention to the Convention Secretariat. Actions including monitoring and protection are strictly implemented in close collaboration with concerned institutions such as Customs and Excise, Border Patrol and the Police.

It is useful to point out here that Member States of the Sub-Regional Fisheries Commission are in the process of preparing a draft proposal, to be submitted to the next CITES Meeting of Parties, for the listing of sawfish, a group of highly threatened shark species. The sawfish which used to be abundant about four decades ago and once considered to have significant cultural significance are now extremely rare as a result of over-fishing for their fins. One indication of the significance of sawfish is the fact that they are used a symbol on the currency of Francophone States of West Africa (the CFA franc).

United Nations Convention on the Law of the Sea (UNCLOS)

The Gambia adhered to this Convention on 22 May 1984 and among the actions taken in implementation of the Convention include the declaration of a 200 mile Exclusive Economic Zone and the amendment of relevant parts of the Fisheries Act 1977 and Regulations and the eventual enactment of the 1991 Fisheries Act and promulgation of the Fisheries regulations 1995. Under provisions of this convention, signatory states are required to allow the exploitation of their fisheries resources by other outside parties if

sufficient stocks are available and only when they have met their own national needs and exhausted their fishing capacity. This aspect of the convention is apparently not being respected due either to the lack of capacity for exploiting the resources or the need for financial resources to fuel national socio-economic development. This situation has often resulted in over-fishing and the over-exploitation of fish resources.

Convention on Biological Diversity (CBD)

The Gambia ratified the Convention on 3 May 1994. Annual reports of a three year period were sent to the Secretariat in early 1997. In compliance with article 6 of the Convention, The Gambia prepared a National Biological Diversity Country Study. An Action Plan outlining sustainable programmes, strategies and activities which would contribute to conservation and to the sustainable use of biological diversity were also identified and submitted to the Conference of Parties in 1998. This convention naturally requires that fisheries resources be exploited in a durable manner to ensure equity and meet the needs of future generations.

Convention on Wetlands of International Importance Especially as Water Fowl Habitats (RAMSAR)

The Gambia signed the Convention in March 1996 and actions taken as part of the national programme for implementation of the convention include studies on three Gambian wetlands and their designation as RAMSAR sites namely: the Nuimi National Park, Bao Bolong and Tan Bi complex. These wetlands serve as breeding, nursery and growth areas for several fish and shrimp species and are consequently also important fishing areas.

FAO Code of Conduct for Responsible Fishing (CCRF)

The Gambia applies the precautionary principle approach to fisheries resource exploitation, utilisation and management, In accordance with the provisions of this Code. This is due to the fact that there is a lack of reliable and accurate up-to-date knowledge of the various fisheries stocks. The present M. S. Y. is based on data obtained during the course of sub-regional surveys conducted in the early eighties and those being undertaken annually by the FAO/NORAD missions using the research vessel, the R/V DR. FRIDTJOF NANSEN.

Those involved in the small scale fisheries operators are not acquainted however with principles of responsible fishing contained in the F.A.O. Code of Conduct. Since conservation measures such as closed seasons and catch quotas are not applied in The Gambia, fishermen fish throughout the year

without taking into account the size, the development stage of the fish or breeding season of the exploited species. Consequently documented accounts of the application of the principle of responsible fishing, are unavailable. However, in the inland fisheries sub-sector, communities in some cases impose closed seasons for the fishing of some species such as the freshwater catfish, *Clarias sp.* A programme to sensitise both small scale and industrial fisheries operators on the principles of the Code, is needed.

Impact Analysis of Environmental Policies/Conventions

The fisheries sector which is of particular economic interest, includes ‘the noble fish’ group, notably the cephalopods, shrimps, sharks and lobster fisheries. Targeting other valuable fish stocks, such as the sole fish, has not resulted in the emergence of a distinctive fisheries sub-sector. For example, in the small scale sector, canoe fleets lands sole amongst a number of other marine species.

The environmental impact of the exploitation of the Gambia’s fisheries resources for commercial purposes can best be determined by an analysis of the effect of fishing on species abundance and the relative average length size frequencies of exploited individual species. The different types of gears and fishing methods used by the small scale and industrial sub-sectors have an impact on the status of the target species on their habitats and on the marine and coastal ecosystems.

Evolution of catches

This section deals with the evolution of catches instead of the evolution of indices of abundance because relevant time series data from fisheries resources surveys was not available to enable analysis of length frequency and species abundance. This is due to the fact the Gambia’s capacity to carry out its own research surveys is very limited. However, use was made of data from industrial fisheries to calculate CPUEs discussed in relevant sections below.

The approach was to analyse the status of species resulting from almost two decades of exploitation. The species examined are listed in table 4 below. Out of a total of fifty-one (51) odd species contained in the fisheries statistical database, twenty-five (25) species have been and are still being targeted by the industrial and small scale sub-sectors for commercial purposes.

Table 4: Commercially important species

Scientific Name	English Name	Industrial	Small scale
<i>Pseudotolithus typus</i>	Long neck croaker	+	+
<i>Pseudotolithus brachygnathus</i>	Law croaker	+	+
<i>Pseudotolithus senegalensis</i>	Cassava croaker	+	+
<i>Pseudotolithus elongatus</i>	Bobo Croaker	+	+
<i>Plectoryhncus mediterraneus</i>	Rubberlip Grunt	+	+
<i>Pomadasys jubelini</i>	Sompat Grunt	+	+
<i>Lutjanus goreensis</i>	Gorean Snapper	+	+
<i>Lutjanus agennes</i>	African Red Snapper	+	+
<i>Epinephelus aeneus</i>	White Grouper	+	+
<i>Epinephelus guaza</i>	Dusky Grouper	+	-
<i>Argyrosomus regius</i>	Meagre	+	+
<i>Pentanemus quinquarius</i>	Royal Threadfin	+	+
<i>Polydactylus quadrifilis</i>	Giant African Threadfin	+	+
<i>Galeoides decadactylus</i>	Lesser African Threadfin	+	+
<i>Bothus podas</i>	Wide-eyed Flounder	+	+
<i>Sphyreana spp.</i>	Barracudas	+	+
<i>Dentex spp.</i>	Dentex	+	+
<i>Cynoglossus senegalensis</i>	Solefish	+	-
<i>Pagellus spp.</i>	Seabreams	+	+
<i>Penaeus notailis</i>	Pink shrimp	+	+
<i>Palinurus spp.</i>	Lobsters	+	+
<i>Sepia spp.</i>	Cuttlefishes	+	+
<i>Octopus vulgaris</i>	Common octopus	+	-
<i>Elops lacerta</i>	West African Ladyfish	+	+
<i>Mugil spp</i>	Mulets	+	+

The available fisheries statistical data (Statistics Unit, Fisheries Department) covers the periods 1981 – 2001 and 1985 – 2001 for small scale and industrial fisheries respectively.

Analysis of the specific catch data for the period 1985-2001 for the small scale sector and for the industrial sector reveal a significant decline in

catches for practically all the species concerned. Certain species appear to be particularly affected, especially those classified among the demersal species. The graphs show clearly this trend in the reduction of some seventeen species or groups of species. Species concerned include all those belonging to the *Pseudotolithus* spp, *Cynoglossus senegalensis*, the cephalopods (*Sepia* spp, *Octopus vulgaris*), the barracudas, the shrimps, *Penaeus notialis*, lobsters, *Palinurus* spp, and the ladyfish, *Elops lacerta*.

An interesting phenomenon that emerges is that as industrial catches of some species declined, the opposing trend, that is increasing levels of catches of the same species were landed by the small scale sector. The octopus fishery illustrates this trend very well. The species targeted by this fishery are octopus, cuttlefish and squids. Both the industrial and the small scale fishing fleets target cuttlefishes, although a steady decline in industrial production has been observed in the last six years. However, small scale production seems to be making up the difference (see table 5). Industrial fleets land almost exclusively all the octopus since small scale fishermen in The Gambia do not normally target octopus. This may perhaps explain the absence of octopus catch data for the small scale sector in earlier years. Recently, however, small scale operators seem to have discovered the market value of the octopus.

Table 5: Cephalopods – annual production (metric tons) 1994 –1999

Year	<i>Sepia</i> spp (industrial)	<i>Sepia</i> spp. (small scale)	Total	<i>Octopus vulgaris</i> (industrial)	<i>Octopus vulgaris</i> (small scale)	Total
1994	1,336.20	9.47	1,345.67	449.10	No data	449.10
1995	1,202.50	324.69	1,527.19	404.20	"	404.20
1996	1,443.10	184.35	1,027.45	485.10	"	485.10
1997	760.00	137.28	897.28	287.70	"	287.70
1998	775.20	97.83	873.03	132.30	"	132.30
1999	680.60	380.20	1,060.80	2,758.20	68.00	2,826.20
Total	6,197.6	14,724.54	20,922.14	8,882.50	68.00	8,950.50

This is also true for some eleven (11) species or group of species. The species involved are listed in table 6 below (also see annexed graphs).

Table 6: Species being landed in increasing quantities landed by small scale fishermen

<i>Lutjanus goreensis</i>	<i>Pomadasys jubelini</i>
<i>Argyrosomus guaza</i>	<i>P. notialis</i>
<i>Pseudotolithus typus</i>	<i>Palinurus spp</i>
<i>Pseudotolithus brachygnathus</i>	<i>Cynoglossus sensgalensis</i>
<i>Pseudotolithus senegalensis</i>	<i>Elops lacerta</i>
<i>Pseudotolithus elongates</i>	

- The annual catch of *Pseudotolithus brachygnathus* declined from 885 tons in 1985 to as low as 67 tons in 1992.
- The catch of *Pseudotolithus elongatus* dropped from 836 tons in 1990 to just 79 tons eleven years later in 2000
- *Pomadasys jubelini* declined from a catch rate of over 2839 tons in 1990 to 451 tons ten years later in 1999
- *Polydactylus quadrifilis* dropped from 630 tons in 1990 to 67.7 tons in 2000
- The barracuda group, *Sphyraena spp*, declined from over 1110 tons in 1985 to just over 70 tons in 2000.
- Catches of the lobster group, *Palinurus spp*, declined from over 900 tons in 1994 to less than 66 tons in 2000

Lobster, *Palinurus spp*, is targeted by both the industrial and small scale sectors, with the industrial sector dominating. But production has been rather unsteady, with declining industrial and rising small scale catches in recent years (figures 4a & 4b). Live lobster is preferred and the bulk of the catches are destined for big hotels and restaurants serving tourists and visitors to the country and the export market.

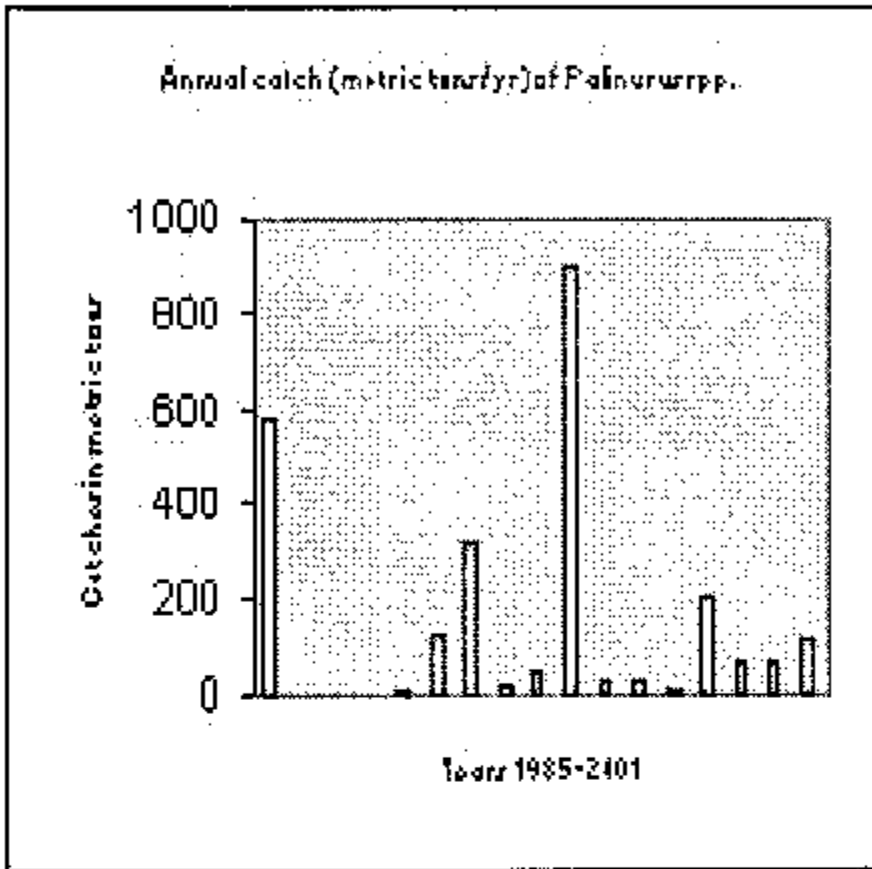


Figure 4a. Annual Catch *Palinurus*

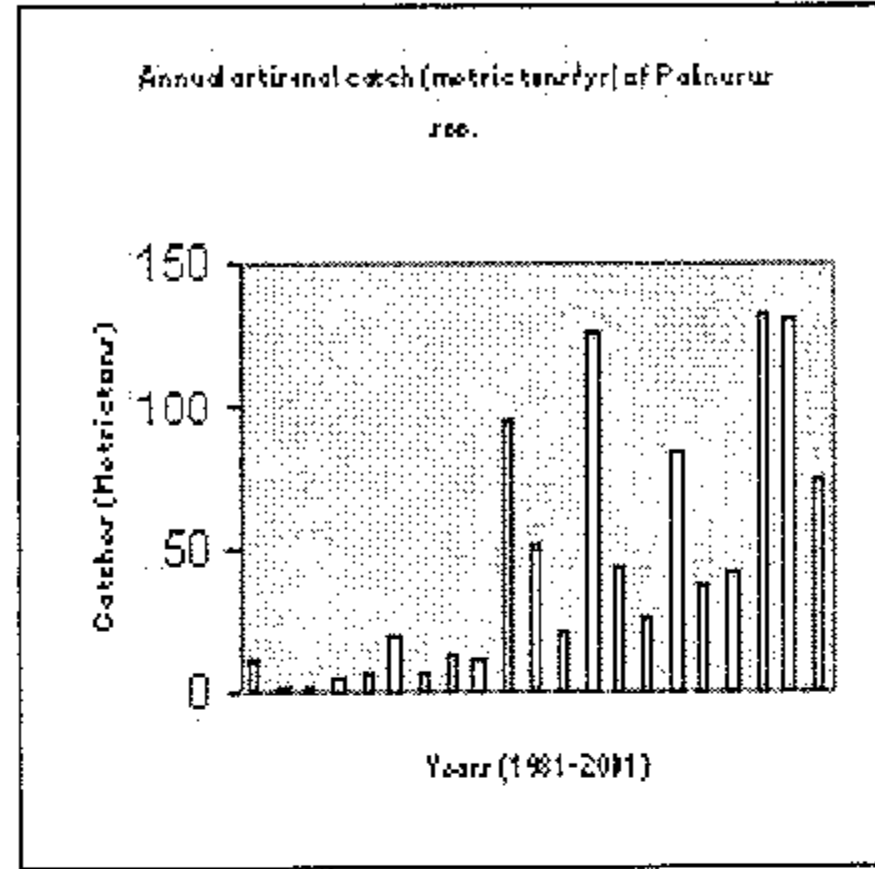


Figure 4b Small scale Catch *Palinurus*

Both the small scale and industrial sectors are involved in sole fishing, as sole is a highly valued fish species in the international market. There was exceptionally high production between 1995 and 1997 by both sectors and in recent years declining industrial landings have been compensated by rising small scale catches (figures 5a & 5b).

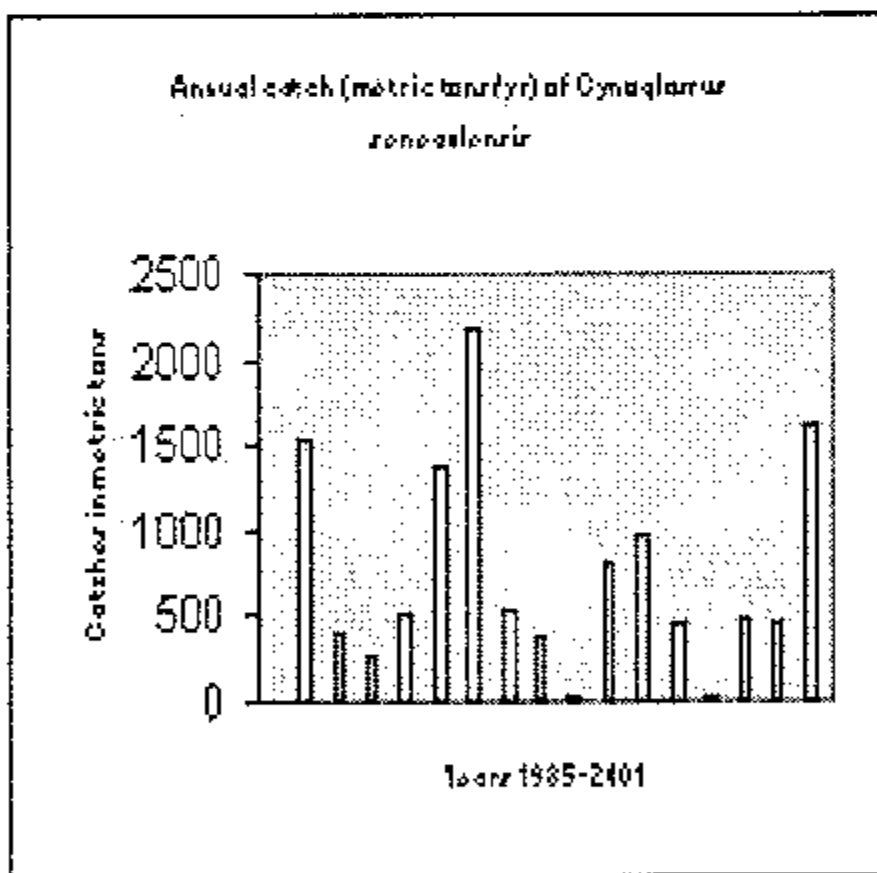


Figure 5a : Annual catch – *C. senegalensis*

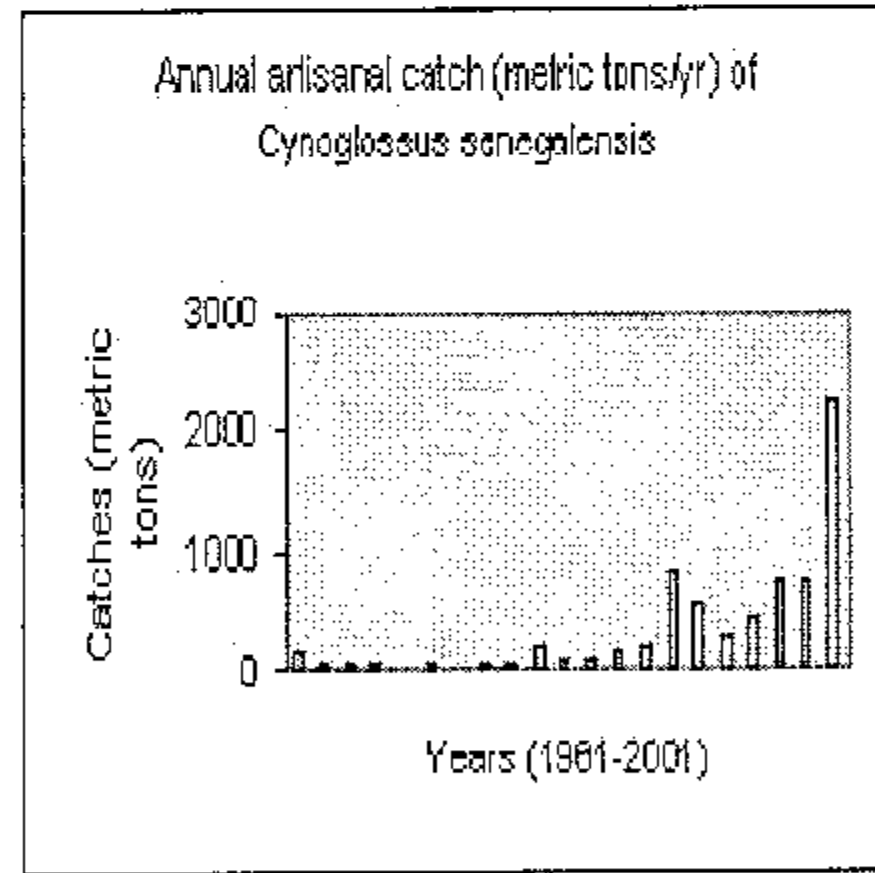


Figure 5b small scale catch *C. senegalensis*

The market value of shark, particularly of their fins, is high in The Gambia. Gambian and foreign entrepreneurs export shark fins to South East Asia. They collaborate with Ghanaian fishermen involved in the commercial shark fishing. The dried shark meat is sold in Ghana for 2US\$ or more.

Shark fin exporters offer local middlemen and fishermen up to 50US\$ per kilo of high quality dry fins while the exporters are paid hundreds of US dollars per kilo in South East Asian markets. In a bid to land more shark fins, small scale fishermen and industrial operators cut off the fins of the live shark which are then thrown back into the water. This practice is carried out to reduce the load on the canoe so as to be able to carry more shark fins and other high value fish. It is a highly unsustainable and cruel way to fish! Ghanaian small scale fishermen point out that there has been a decline in production and overall landings during the past decade, despite a progressive increase in fishing. Analyses of the current situation in shark fishing itself, seems to confirm this conclusion.

On the other hand, the industrial vessels seem to be landing increasing quantities of other species, notably *Lutjanus agennes*, *Plectorhynchus mediterraneus*, *Pagellus spp*, *Mugil spp.*, *Galeoides decadactylus* and *Elops lacerta*.

Evolution of average length frequency of landed species

Length frequency

The national fisheries statistical database does not contain length frequency measurement for either industrial catches or for small scale catches. Length frequency analysis was conducted on data obtained for a limited number of species exploited for commercial purposes. Some limited length frequency data was collected during cruise surveys conducted in Gambian waters between 1986 and 1994 by the Senegalese oceanographic research vessel, the RV Louis Sauger. This data related to six (6) species, of which there was sufficient data for length frequency analysis on only three species, namely: *Pagellus bellottii*, *Pseudupeneus prayensis* and *Pagrus caeruleostictus*.

The results of the analysis for the three species point to a significant decline in the average size of individual fish caught during the eight year period covered by the surveys. Individual *Pagellus bellottii* and *Pseudupeneus prayensis*, which ranged from 17cm to above 23cm in 1986/87, declined significantly to between 14 and 15 cm (Figures 6 and 7). This trend is more vividly illustrated by the results for *Pagrus caeruleostictus*. In the case of the latter, we observe a shift towards the landing of fish of smaller sizes as early as 1987 when there was a concentration of medium sized fish (figures 8a & 8b) and by 1993, mostly small sized fish (figure 8c). It should be noted that the Louis Sauger data

was collected during the period when fishing effort and capacity were increasing almost exponentially.

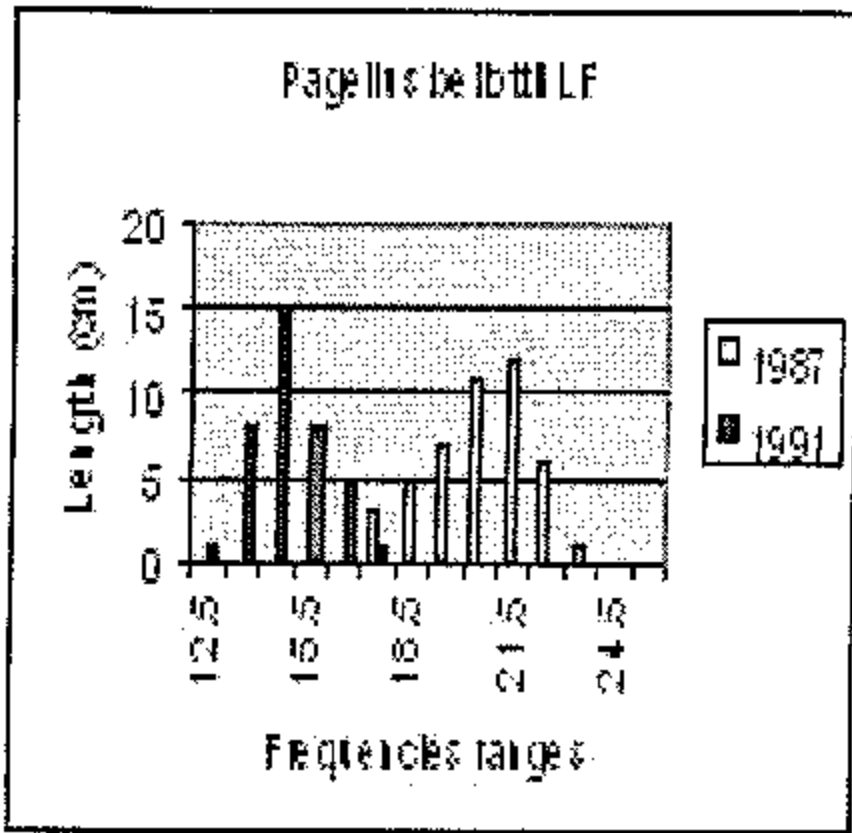


Figure 6

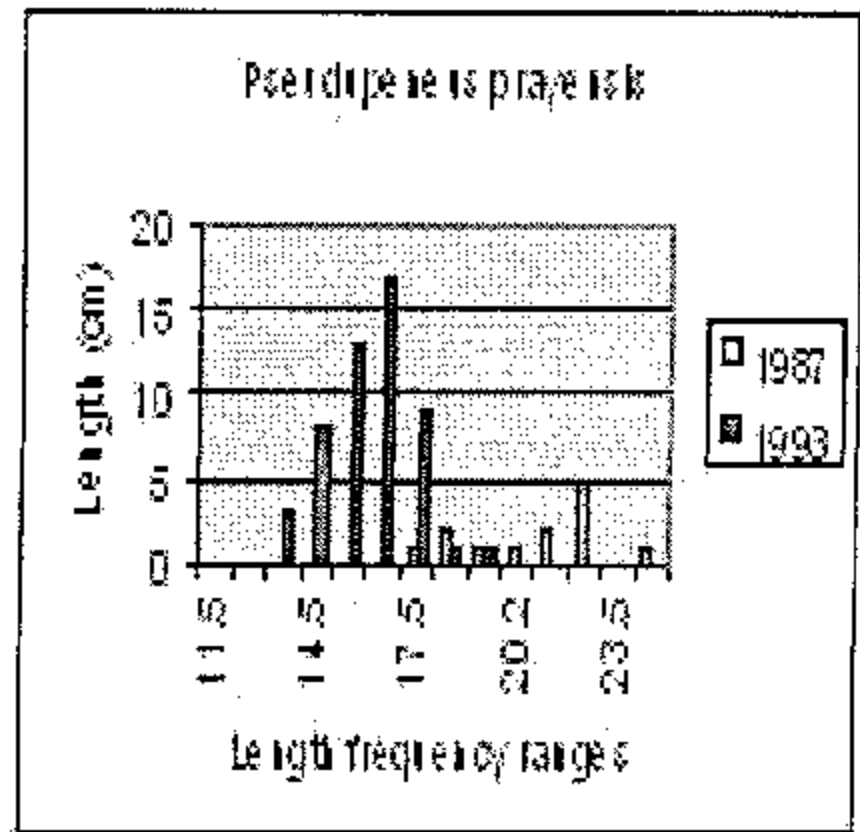


Figure 7

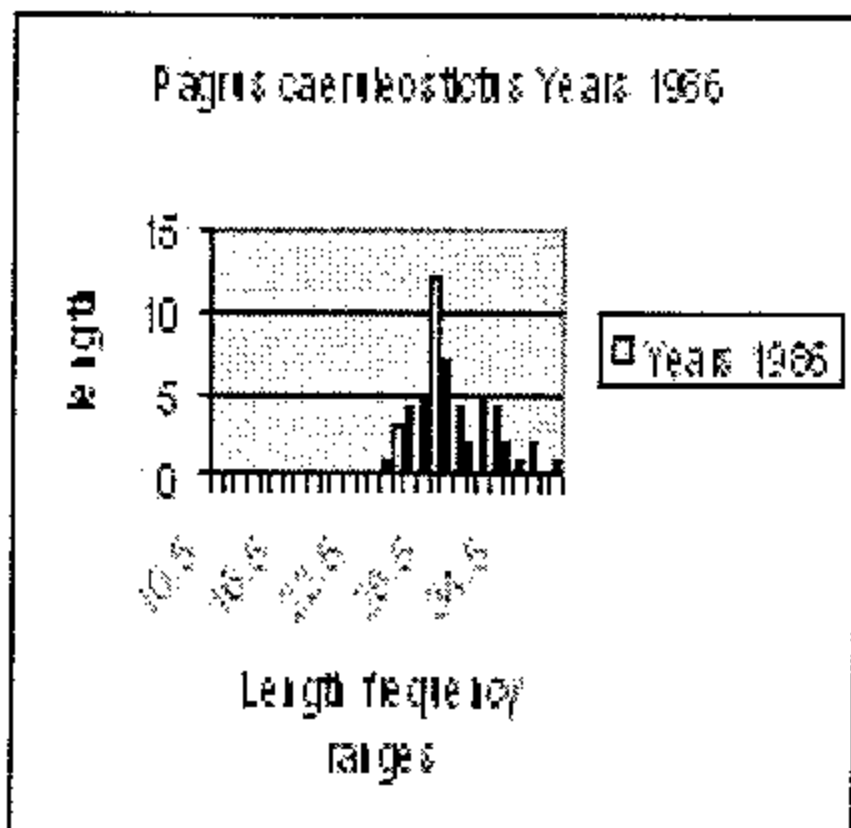


Figure 8a

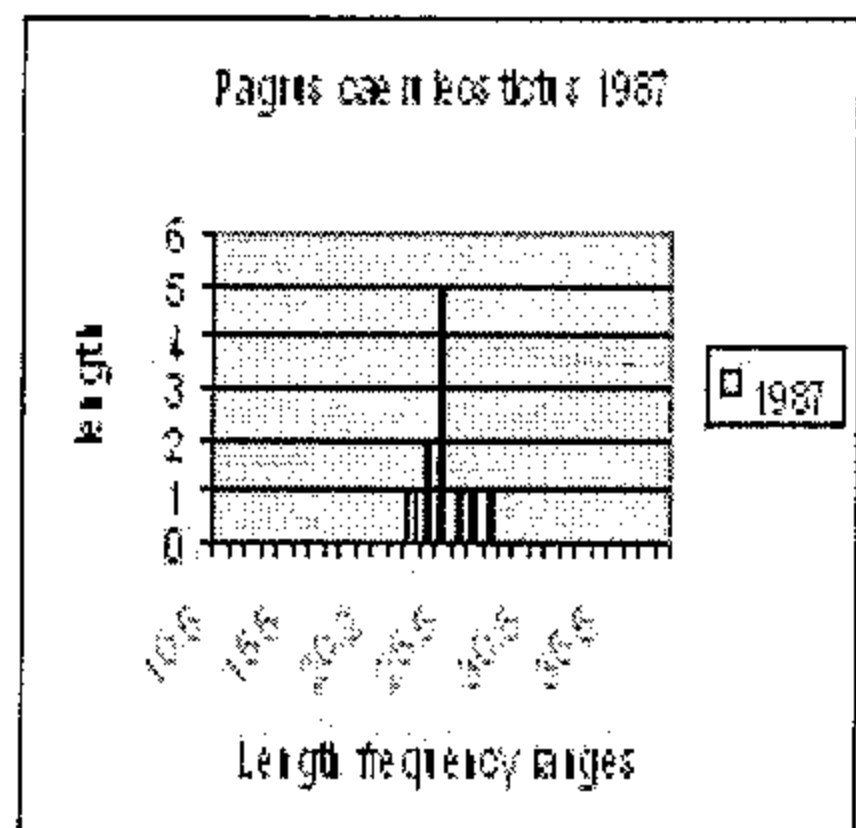


Figure 8b

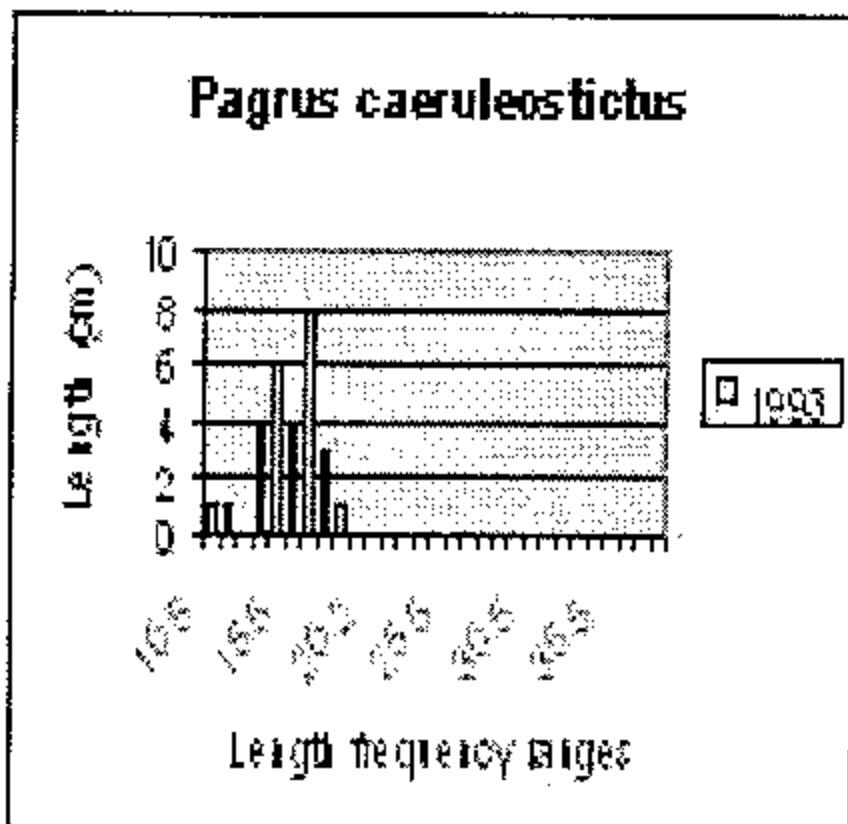


Figure 8c

In order to have a close up account of the present situation with respect to the average sizes of individual fish caught for certain species, length measurements were taken for the catches of small scale fishermen at two fish landing sites along the The Gambia's Atlantic coastline; in Banjul and Tanji, for a one week period in February 2004. Table 7 shows the maximum attainable size for each species, the average sizes of individual fish sampled and the size at first sexual maturity. The size at first sexual maturity are derived from the FAO species identification sheets and scientific publications (ENDA-TM/ Crodt, 2001). However, information could not be obtained for all relevant species. The results presented in table 7 seem to confirm the conclusions derived from the analysis of the RV Louis Sauger survey data. All the species sampled consisted of individual fishes of much smaller size than the potential maximum attainable size and more seriously, individual fishes were of smaller size than at first sexual maturity. If fishing regulation in The Gambia contained provisions about the authorised minimum size of individual fishes to be landed, it would have been useful to compare our data with them. This situation where small immature individual fish are being caught is undermining the possibility of stock renewal and the development of a sustainable fisheries sector. If this situation is allowed to continue unregulated there is a risk of that many of these species will disappear and be replaced by less commercially viable species. This will result in the species replacement phenomenon mentioned elsewhere in this report. The results presented in table 7 and illustrated in figures 6, 7 and 8 show that all these species are threatened and that there is need for corrective conservation measures. These conclusions are supported by those reached by the FAO Working Group on demersal fish held in Guinea in September 2003. After analysing the quality and trends in the basic data (landings, catch, effort and length distribution) collected by each country, the Working Group concluded that most of the demersal stocks are over exploited and for some of them there was need to drastically reduce fishing mortality (FAO/CECAF, 2003). For example, in 1986 the total biomass estimates, by Spanish scientists, of demersal fish for the Gambia was 43,600t, while the estimates for 1992 and 1995 by the Norwegian Research vessel, the R/V Dr. Fridtjof Nansen stood at 30,000 and 22,000 respectively. Our conclusion, based on the results of two simulation models (Mendy, 2003) on the Gambian continental shelf system, that a precautionary principle approach fisheries management approach be encouraged, is supported by the Working Group's assertion.

Overall, the results of the analysis of available data seem to indicate that for most of the seventeen to twenty year period during which statistics were being collected, the resources were already under heavy fishing pressure,

and perhaps under conditions of deteriorating habitat and deteriorating environmental conditions for these species.

Table 7: Length frequency data for a sample of some commercial marine fish species¹

Names		Maximum attainable length	Average lengths		Length at 1 st sexual maturity
Scientific	Commercial		Banjul	Tanji	
Pomadasys jubelini	Sompat grunt	80	28	27	40
Arius latiscutatus / gambensis	Sea catfish	120	48	34	40
Galeoides decadactylus	Lesser African threadfin	200	27	25	14
Sphyraena barracuda	Great Barracuda	200	67	89	
Epinephelus aeneus	White Grouper	300	28	40	20
Plectoryhnchus mediterraneus	Rubberlip grunt	60	23	27	
Pseudotolithus senegalensis	Cassava croaker	50	37	47	33
Drepane africana	African sickle fish	35	31	21	
Scomber japonicus	Chub mackerel	300	27	55	
Elops lacerta	West African ladyfish	60	55	67	
Elops senegalensis	Senegalese ladyfish	60	40	-	
Lutjanus agennes	African red snapper	40	20	36	
Polydactylus quadrifilis	Senegalese ladyfish	100	74	58	
Pentanemus quinquarius	African red snapper	100	20	-	
Cynoglossus senegalensis	Giant African threadfin	40	-	32	34
Argyrosomus regius	Royal threadfin	150	-	65	
Balistes punctatus	Senegalese tongue sole	25	-	24	
Trichiurus lepturus	Senegalese tongue sole	100	-	78	
Pagellus bellottii	Meagre	75	-	32	14
Ethmalosa fimbriata	Blues potted triggerfish	40	-	25	
Pseudotolithus elongates	Meagre	30	-	43	
	Blues potted triggerfish				
	Large head hairtail				
	Red pandora				
	Bonga/shad				
	Bobo croaker				

¹ Sources: Schneider, W 1990. FAO Species identification sheets & Enda/Crodt/Unep, 2001

Effect of fishing effort and pressure

This conclusion could also be supported by available data on trends in fishing effort and fishing capacity, demographic growth of fishing communities and the use of destructive or unsustainable fishing methods and practices. All of these elements are driven by the increasing demand for fish and fisheries products in the world fish consumer markets. Tables 8 and 9 show the increase in small scale and industrial fishing effort (canoes and trawlers) during the past ten to twenty years.

Table 8: Small scale coastal canoes - numbers & motorization

Year	Total No. Canoes	% Motorization
1980	290	89
1981	490	66
1983	397	66
1986	346	65
1990	472	60
1992	492	76
1994	503	83
1997	494	87
1999	467	95
2000	580	97

Source: Statistics Unit, Fisheries Department, 2002.

Table 9: Number of licensed industrial vessels 1993 – 2002

Year	1993		1994		1995		1996		1997	
Vessel Type	Jan-Jun	Jul-Dec	Jan-Jun	Jul-Dec	Jan-Jun	Jul-Dec	Jan-Jun	Jul-Dec	Jan-Jun	Jul-Dec
Stern trawlers	14	22	15	13	5	10	15	10	18	16
Shrimp trawlers	25	33	19	12	13	19	13	20	18	18
Tuna Long-Liners	20	0	12	4	5	15	8	0	5	1
Pair trawlers	0	0	0	0	1	1	2	2	0	0
Tuna Purse Seiners	0	24	0	17	0	0	0	0	0	0
Long Liners	2	0	0	0	0	0	0	0	0	0
Gill Netters	0	0	0	0	0	0	0	0	3	3
Multiple Purpose	0	0	0	0	0	0	0	0	0	5
Total	61	79	46	46	24	45	38	32	39	40
Year	1998		1999		2000		2001		2002	
Vessel Type	Jan-Jun	Jul-Dec	Jan-Jun	Jul-Dec	Jan-Jun	Jul-Dec	Jan-Jun	Jul-Dec	Jan-Jun	Jul-Dec
Stern trawlers	15	17	21	42	22	24	14	16	12	
Shrimp trawlers	9	16	7	13	15	31	22	37	19	
Tuna Long-Liners	1	4	3	0	2	1	1	0	2	
Pair trawlers	0	0	0	0	0	0	0	0	0	
Tuna Purse Seiners	0	0	0	0	0	0	0	0	0	
Gill Netters	0	7	0	0	0	0	0	0	0	
Processing Vessels	0	0	0	0	0	0	0	1	0	
Total	25	44	31	55	39	56	37	54	33	

Source: MCS Unit, Fisheries Department, 2002

It can be seen from the above table that for the period 1993 to 2002 shrimp trawlers have been the dominant vessel type amongst licensed industrial vessels. The number of shrimp trawlers licensed annually is unjustifiable given the low C.P.U.E. value of shrimp. Registering as a shrimp trawler serves a pretext for the use of nets with 50mm mesh sizes and “scoop” with a pre-selection of fish according to market demand and the disposal of the ‘by-catch’ that remains. Clearly, this practice has a negative impact on the fisheries resource base of the country.

Review of Catch Per Unit Effort (C.P.U.E.) of Commercial Fisheries (1992 – 2001)

A paucity of data did not enable an in-depth assessment of the indices of abundance of fisheries resources. However efforts were made to analyse trends in the indices of abundance, catch per unit effort (CPUE) of particular species of high commercial value (see table 10 below based on estimated industrial fishing efforts over the years). It should be noted that in the data used in the study, catches were not recorded according to vessel type or fleet, but were lumped together as industrial fisheries catches. The effort measurement used is fishing days. A single effort measurement was used for all species analysed as all vessels except tuna target species in the demersal group. Fluctuations in the CPUE of selected species occurred and the levels of fishing effort placed on the resources have correspondingly shifted during the years, as indicated in table 10 and figure 9 respectively. Indices of abundance were not analysed for small scale fisheries because no relevant effort data was available.

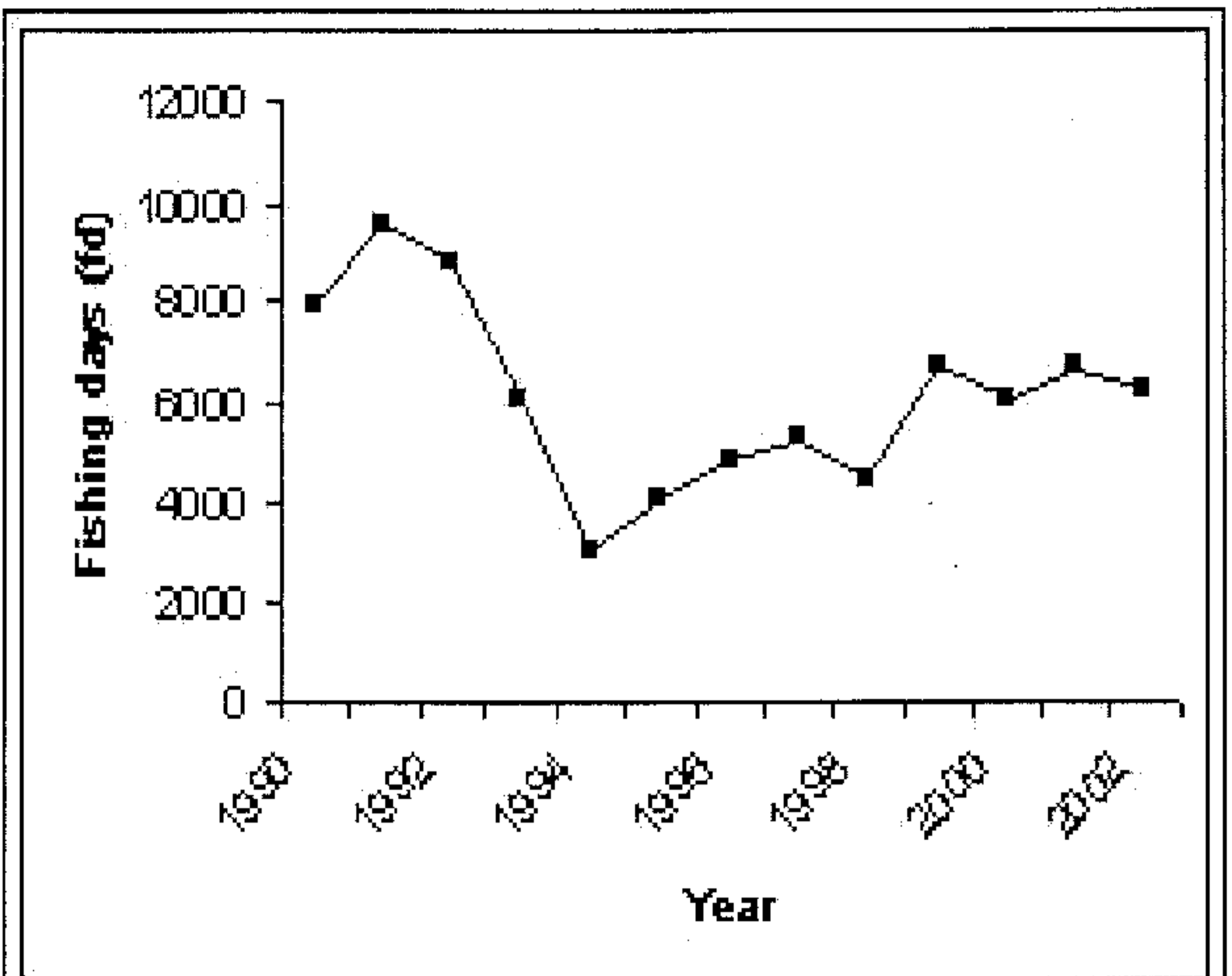


Figure 9. Shows estimated fishing effort in fishing days

Table 10. Shows Estimates of CPUE (Kg/Fishing day) for Selected Demersal Species

	1990	1991	1992	1993	1994	1995	1996
<i>Arius spp.</i>	33	39	14	11	44	30	30
<i>Pseudolithus spp</i>	453	195	27	127	162	110	110
<i>Epinephelus aeneus</i>	40	60	13	35	79	54	54
<i>Pagellus Bellottii</i>	33	20	11	12	9	25	25
<i>Cynoglossus senegalensis</i>	173	224	62	62	10	200	200
<i>Pomadasys jubelini</i>	359	389	87	301	379	248	258
<i>Plectorhinchus mediterraneus</i>	66	14	7	38	72	49	49
<i>Argyrosomus regius</i>	16	7	23	13	18	12	12
<i>Others</i>	295	220	97	60	149	298	288
<i>Sepia spp</i>	335	440	123	214	437	297	297
<i>Octopus vulgaris</i>	170	145	19	27	147	100	100
<i>Peneaus notialis</i>	216	356	582	582	588	556	389
	1997	1998	1999	2000	2001	2002	
<i>Arius spp.</i>	12	5	13	25	57	65	
<i>Pseudolithus spp</i>	89	103	83	57	260	294	
<i>Epinephelus aeneus</i>	57	35	47	32	35	48	
<i>Pagellus Bellottii</i>	64	59	39	82	66	64	
<i>Cynoglossus senegalensis</i>	89	7	73	78	240	216	
<i>Pomadasys jubelini</i>	226	128	67	157	210	229	
<i>Plectorhinchus mediterraneus</i>	84	41	50	61	60	60	
<i>Argyrosomus regius</i>	12	4	11	8	23	44	
<i>Others</i>	339	724	405	580	124	376	
<i>Sepia spp</i>	146	176	101	84	69	139	
<i>Octopus vulgaris</i>	55	30	409	83	19	141	
<i>Peneaus notialis</i>	448	367	187	522	703	760	

Observations of C.P.U.E. of selected species (1992 – 2001)

- Fishing trends for these species indicate higher levels of capture of demersals than cuttlefish, shrimps and octopus but generally low catches per unit effort (C.P.U.E) for all the species under investigation.
- Fishing pressure exerted on demersal stock, according to our analysis of the available data and the conclusions of the FAO/CECAF Working Group on demersal resources held in Guinea-Conakry in September 2003, is exceptionally high. The number of shrimp trawlers and all

trawlers operating in Gambian waters during this period ranged from 60 – 116 each year. The main species targeted by these vessels are shrimps, cuttlefish, octopus and certain demersals of relatively high commercial value, such as, sole, red snapper and grouper.

- The surveys carried out by R/V Dr. Fridtjof Nansen in 1992 and 1995 and the analyses of corresponding fisheries landings and discarded stocks, confirmed a downward trend in fish biomass since the 1986 survey of the demersal fish. In 1986, the total biomass of demersal fish for this area was estimated by Spanish scientists to be at 43 600 t, while the estimates for 1992 and 1995 by the Norwegian Institute of Marine Research stood at 30 000 and 22 000, respectively (Mendy 2003). The Ecopath and Ecosim analyses by functional groups (???) have revealed the same trend for most groups of species. This confirms the fear earlier expressed about the declining health of demersal fish stocks. Figure 10 is reproduced from the Ecopath model constructed by Mendy 2003. It is interesting to note that the biomass of small pelagic fish, especially the sardinellas (?) had gone up over the years, while other small pelagic fish such as the *Trachurus* spp, etc. had gone down in 1995. It could have been the case that these species happened to have moved within the area at the time of the survey, considering the highly migratory nature of the species in question.

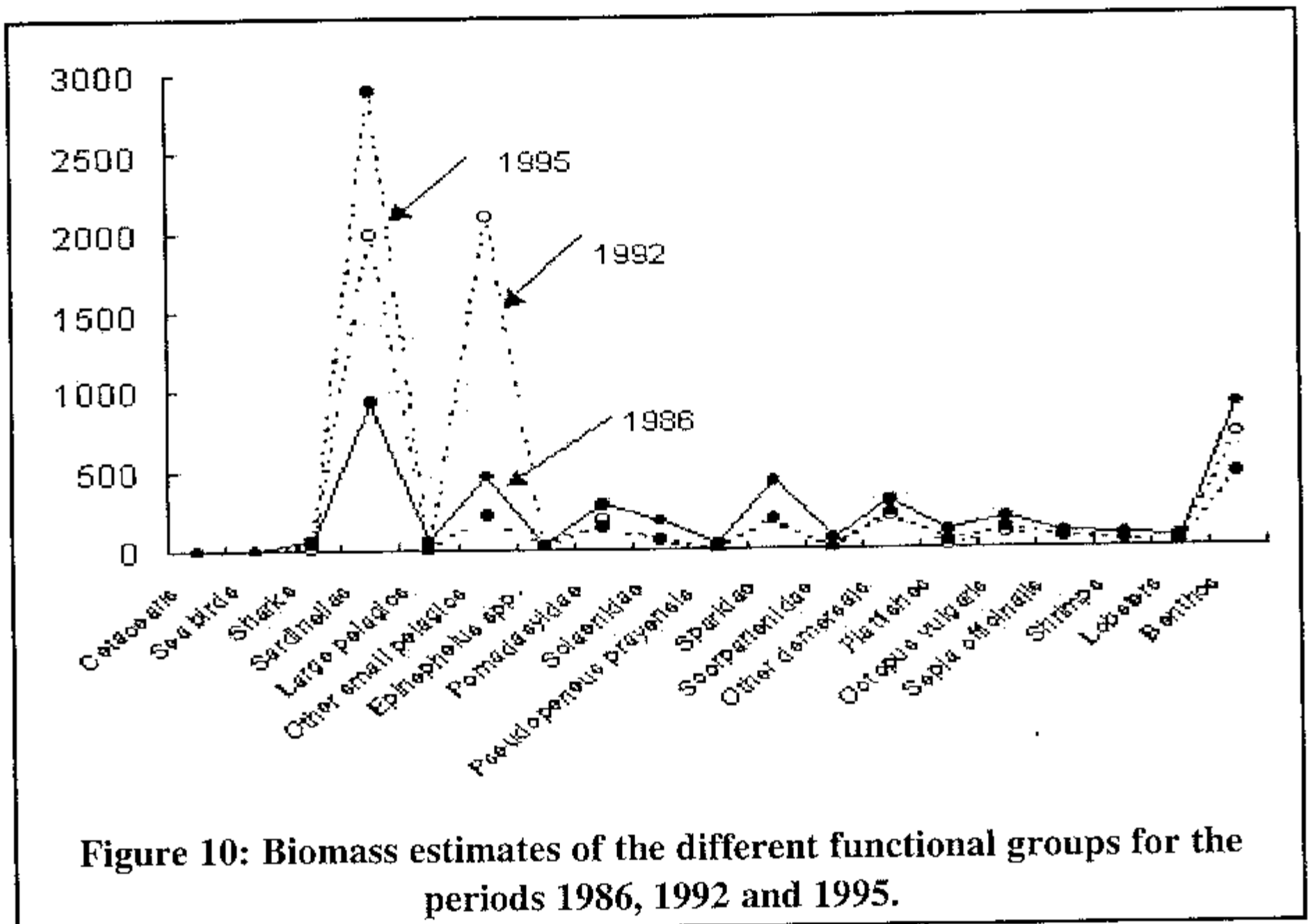


Figure 10: Biomass estimates of the different functional groups for the periods 1986, 1992 and 1995.

The catch per unit effort of cuttlefish and shrimps, which constitute the main species of interest to trawler operators, were higher between 1994 and 1998 than in all the other years, but dwindled to worrying levels by 2001.

Further observation has shown that increases in the effort (measured in fishing days) of trawlers did not necessarily translate into catch increments of the species being harvested. In 2001 when the total number of catches of all species was highest, the catch for cuttlefish was lowest and shrimps were also of poor quantity when compared to catches of previous years. In this particular year, out of the 74 trawlers recorded, 73 were shrimp trawlers but shrimp catches did not increase. Demersals caught however were of relatively high quantities and consisted mainly of grunts, croakers and threadfins.

Catches of Octopus and the results obtained for annual C.P.U.E calculations indicate that this species has consistently been captured during the period although in much lower quantities than cuttlefish or demersals, except in 1994 and 1999.

Over the years, the level of fishing pressure on the resources exerted mainly by shrimp and other trawlers using fishing gear of minimum mesh size, suggests a continued focus on the exploitation of these species because of their high commercial value. In the process, significant quantities of demersals are caught alongside shrimp and large portions discarded to provide adequate space for stowing the high – value species onboard.

Chapter 5

Impact of Different Policies on Biodiversity/Ecosystem

Species replacement Phenomenon

Analysis of trends in the quantities of individual species caught over the past two decades by both industrial and small scale operators highlighted the prevalence of a *species replacement phenomenon*. This suggests over-fishing, use of bad fishing gears and the violation of fishing regulations by industrial and small scale fishermen. As fisheries stocks become scarce, fishing fleets and individual fishermen and women change their gears to maximise their catches and fish in reserved zones. Industrial vessels intrude into zones reserved for small scale fishing, thereby degrading and destroying habitats and causing losses to bio-diversity in coastal zones and ecosystems. We know that certain aquatic species stay in coastal zones from birth to the recruitment stage and uncontrolled exploitation of juvenile and spawning individual fish, compromises stock renewal.

With fishing pressure increasing uncontrollably and ecosystems and habitats being modified and damaged by trawling and other harmful fishing practices, certain stocks namely shrimps and other noble species such as lady-fish, thread-fins and croakers have become scarce whilst other species that were formerly discarded or rejected now being landed. The increased landing of these “new” species in place of other once abundant species is known as the *replacement phenomenon* and is observed in both small scale and industrial landings.

The industrial landings of *Plectorhynchus mediterraneus*, *Pagellus spp*, *Mugil spp*, *Lutjanus spp* and *Elops lacerta*, which were previously caught in small quantities, from the late 1990s onward, started to constitute significant proportion of overall landings. The same phenomenon is observable scale landings of the same species or groups of species. But the stocks that particularly exemplify the replacement phenomenon are the cephalopods. There has been a significant landing of cuttlefish and octopus by the industrial fishing vessels. Although the small scale sub-sector has continued to record increased landings of cuttlefish, it has not truly evolved

into a distinct octopus sector. Sole catches actually began appearing in fisheries statistics between 1990 and 1994, became significant from 1995 and have been increasing since then.

One possible explanation for this is that whilst some species become scarce as a result of habitat and ecosystem changes due to over-fishing and the impact of trawling and other bad fishing methods, other species such as the cephalopods replace these diminishing species.

Degradation of habitats

Unsustainable fishing methods and practices

Some fishing methods or practices employed by operators in both industrial and small scale sub-sectors accentuate the over-use of fisheries resources and the degradation of marine and coastal habitats and ecosystems. The following fishing gears and methods are considered destructive and contribute to over-fishing:

Beach Seining

The beach seine is a destructive fishing gear with mesh sizes smaller than those approved by statutory legislation. They mostly catch young small sized fish as well as breeding or spawning adults found inland or along the coast. The adults and other medium size fish are retained while the small fish are discarded or abandoned on the beaches.

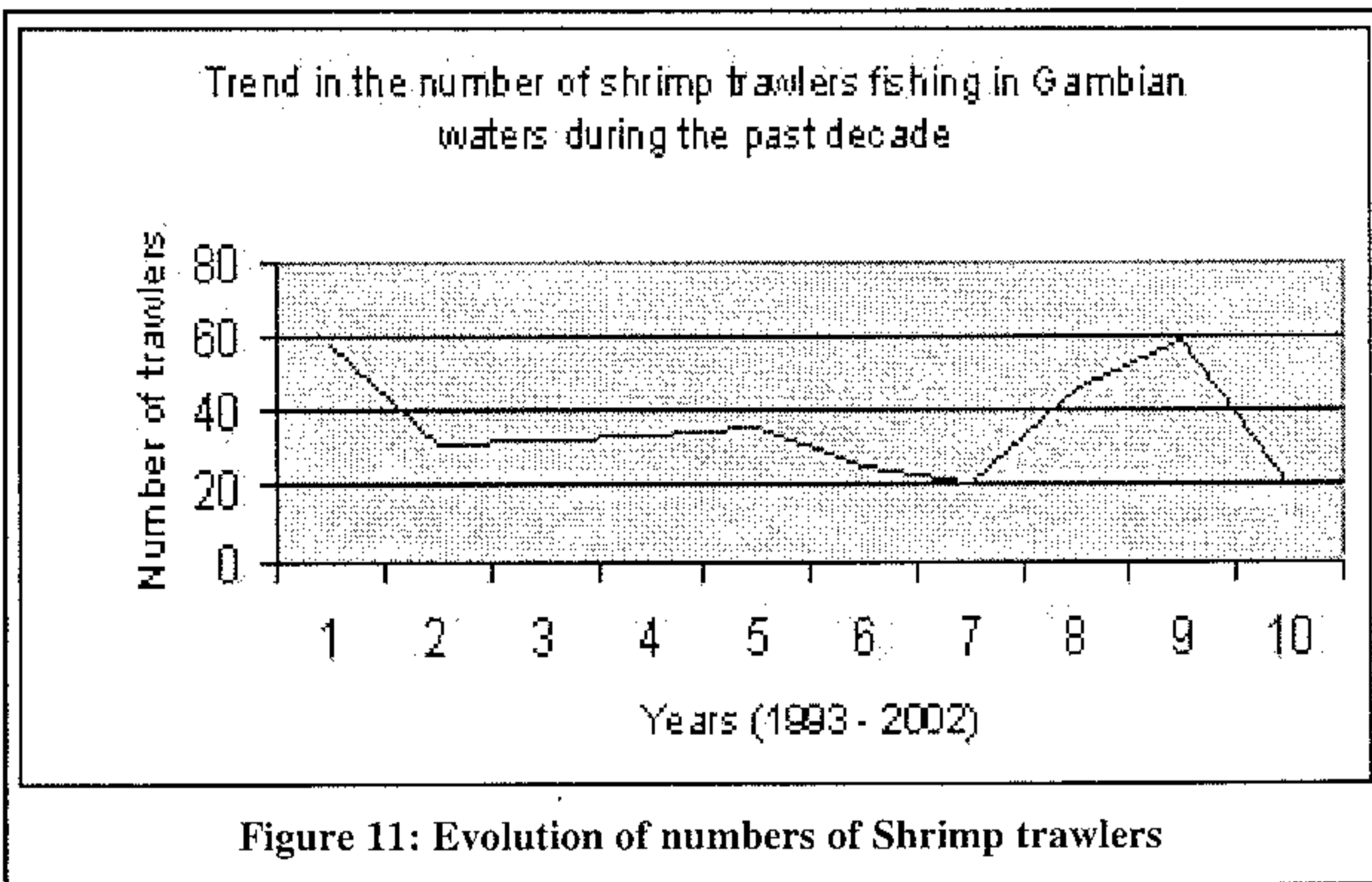
Trawling

Trawling is a destructive fishing method both for fish stocks and the ecosystem. This fishing method destroys the marine habitats of demersal and benthic organisms. With several trawlers fishing in The Gambia's fishing waters annually dragging their trawls on the sea floor, substantial and often irreparable damage is being done to the nursery and feeding grounds, shelter, habitats and the entire ecosystem. The catches of these trawlers invariably include a high amount of by-catches comprising of non-target species, juvenile fish, sharks, green turtles and dolphins. The majority of the licensed industrial fishing vessels are foreign owned and mostly trawlers (52%, 78% and 95% for 1995, 1995, 1997 respectively). There are also a few *purse seiners* and long liners engaged in tuna fishing.

Shrimp fishing

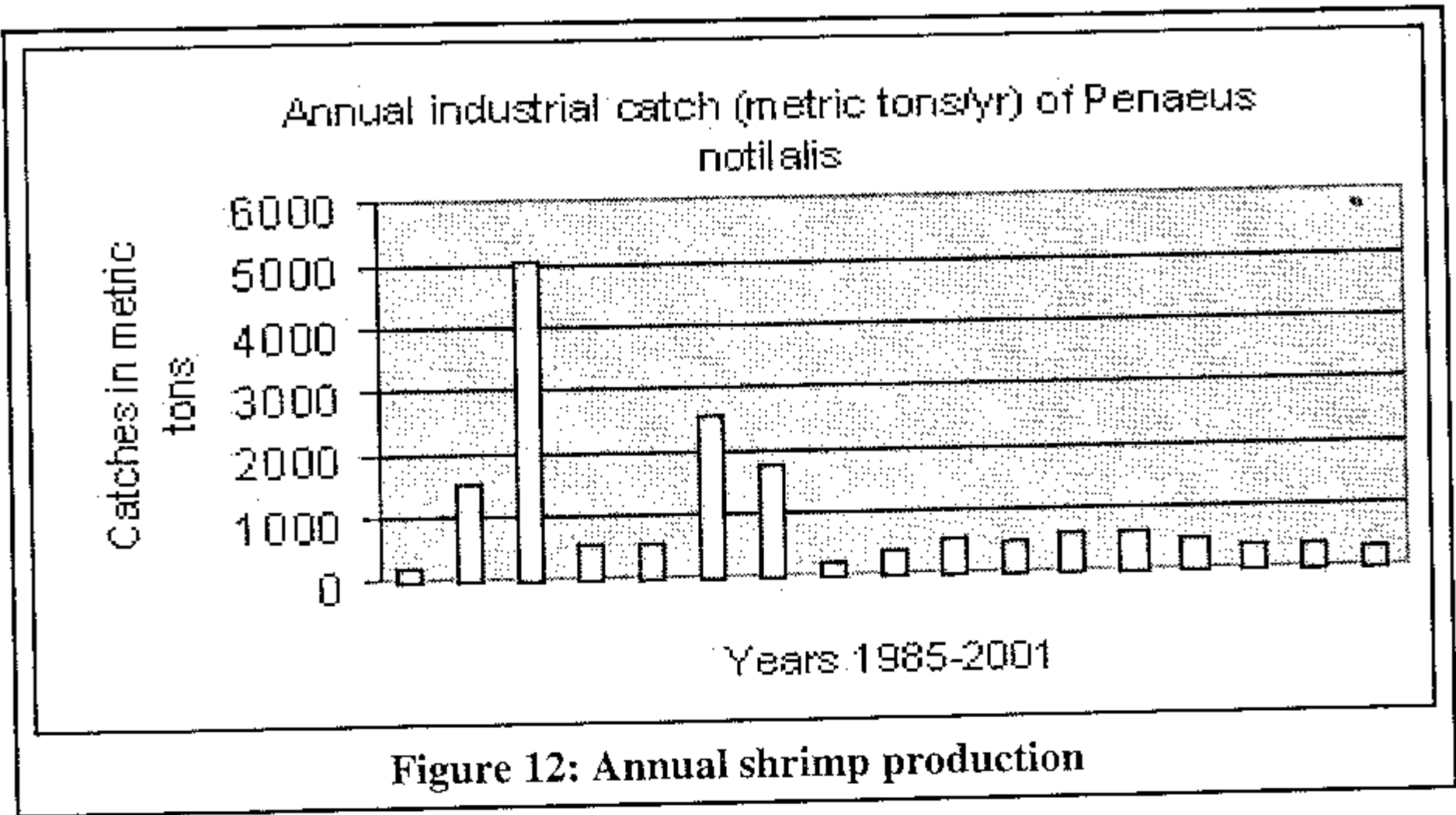
The shrimp fishery is important at both industrial and small scale levels. Declining catch rates have been observed in recent years, and are

attributable to increasing fishing pressure on small scale shrimp fishing and the number of industrial shrimp trawlers. The number of shrimp trawlers has been comparatively high and difficult to monitor and control. This heavy fishing pressure is also blamed for the declining average shrimp size and the deteriorating species composition of each catch. In 1993 the Government started to systematically reduce the number of industrial shrimp vessels granted licences. But as can be seen in figure 11, this policy has not been applied consistently.



From 1994-999 when the Government started to implement its policy of systematically reducing the number of licensed industrial vessels, the number of shrimp trawlers remained low, with below forty (40) licences being granted yearly (figure 11). This was followed by a dramatic and steady increase in 2000 and in recent years.

Analysis of catch data from the industrial fisheries also indicates declining annual shrimp production and exports during past decade (figure 12).



Shark fishing

The shark fishing industry has become a lucrative business because of the attractive prices shark fins can fetch in South East Asia. In a bid to land more shark fins the small scale fishermen cut off the fins of live shark then throw the remains back into the water. This practice reduces the overall 'unnecessary' load carried by the canoe and leaves more space available for shark fins and other high value fish, even though it is a highly unsustainable and cruel way to fish!

Some negative environmental consequences of unsustainable fishing methods and practices

Some industrial and small scale fishing methods and practices have a negative impact on resource availability and the environment (habitat degradation). The most negative impact is on species variety and coastal and marine habitats. For example, the increasing use of mangroves for fish smoking and domestic fuel wood consumption has contributed to high rates of mangrove mortality. The loss of mangrove forests disrupts the hydrological cycle, saltwater intrusion, destroys the natural habitats and nursery grounds of fish and shrimps resulting in reduced fisheries production. As shown in table 11 below, most of the species exploited for commercial purposes, live in delicate habitats and coastal ecosystems. The activity of trawlers and the fishing methods used by some small scale fisherfolk, modify and damage these habitats and niches, sometimes irreparably. As habitats become modified they become unsuitable for certain species, which become endangered, migrate to other more suitable sites or simply perish.

Table 11: Species commonly exploited for commercial purposes

Species*	English or Local Name	Zones of distribution
<i>Cynoglossus spp</i>	Sole	Shallow coastal waters to depths of about 300m.
<i>Epinephelus spp.</i>	Grouper	Coastal demersal, from 10 – 160 m depths, on sandy, muddy and/or rocky bottoms.
<i>Sparus spp.</i>	Sea bream	Coastal waters on sandy & vegetated bottoms up to 150 m depths, occasionally entering estuaries
<i>Mugil spp</i>	Red Mullet	Coastal waters, estuaries, lagoons, less than 20 m (usually near surface)
<i>Palinurus spp</i>	Lobster	Shallow coastal waters, 5– 40 m depths rocky sandy bottoms
<i>Carcharhinidae, Rhinobattidae,</i>	Sharks	Coastal, offshore, continental shelf & slope, oceanic demersal, pelagic species
<i>Lutjanus spp</i>	Snapper	Estuaries, lagoons, rocky hard bottoms 60 m, juveniles in lagoons
<i>Elops lacerta</i>	West African Lady fish	Shallow coastal waters, estuaries throughout the year
<i>Pseudotolithus brachygnatus</i>	Law croaker	Coastal, sandy muddy bottoms, shallow waters up 75 m
<i>Pseudotolithus typus</i>	Long neck croaker	Coastal, sandy muddy bottoms, shallow waters up 75 m
<i>Sphyraena spp</i>	Barracuda	Coastal & estuarine waters, up to 100 m depths
<i>Pomadasys jubelini</i>	Sompat	Coastal & estuarine waters, sandy & muddy bottoms between 20 – 50 m depths
<i>Plectorhynchus mediterraneus</i>	Grunt (Banda) Bonga	Coastal, rocky, sandy & sandy muddy bottoms to 60 m depths
<i>Ethmalosa fimbriata</i>	Cuttlefish	Coastal marine waters, estuaries, lagoons and even rivers
<i>Sepia spp</i>	Octopus	Coastal, demersal, sandy, muddy bottoms, depths 20 m – 450 m
<i>Octopus vulgaris</i>	Tuna	Coastal habitats from coastline to 200 m depths
<i>Thunnus spp</i>	Shrimps	Pelagic, offshore marine, surface waters to below 100 m depths
<i>Penaeus notialis</i>		Coastal, marine waters, estuaries & lagoons

*Most, if not all, of these species are largely part of shared, migratory stocks to be found in fisheries waters of the sub-region and more so in the Senegal/Gambia zone.

Endangered species

Generally, it could be said that most of the species targeted for commercial purposes are under threat from over-fishing. However, some species need special mention: the groupers, the *Epinephelus spp.*, *Elops spp.*, the lady fish, lobster, *Palinurus spp.*, the barracuda the *Sphyraena spp.* coastal shrimp, the *Penaeus notialis*, and a number of shark species; presently at least six species of sharks are considered as being endangered or highly threatened. This conclusion is based on the available literature, observations about the composition of landed catches and the preliminary results of the FIBA/Fisheries Department Study. Increasingly rare species would include sawfish, the *Pristis spp.* *Rhynchobatus lubbertii* *Carcharhinus leucas*, *Leptocharias smithii*, *Galeocerdo cuvieri*, *Sphyrna zygaena*, *Taeniura grabata*, *Mobula coilloti* and *Pteromylaeus bovinus*.

Constraints to conservation

Just three decades ago The Gambia, like her West African neighbours, had abundant fisheries resources; but, it is now generally widely acknowledged that most fisheries stocks have been over-exploited, particularly the demersal stocks. The need to satisfy the requirements of a rapidly growing population and international seafood consumer markets is largely responsible for this over-exploitation and for the deterioration of the marine and coastal environment.

Fisheries resource evaluation and other surveys indicate, as do fisher-folk communities and industrial operators acknowledge, that there is excessive fishing pressure on the stocks. There is increasing conflict between small scale fishermen and industrial vessels as well as among small scale fishermen themselves as a result of the increasing scarcity of fisheries stocks and increasing competition over existing stocks in inshore (inland?) and coastal waters.

It must be admitted that the open access nature of small scale fishing operations and the large number of industrial vessels are responsible for this inflated fishing effort, and increased fishing and processing capacity.

Possible obstacles to the implementation of remedial measures' needed to address the problem of over-exploitation of fisheries resources and its invariably negative impact on bio-diversity, could include:

- The absence of management tools specifically targeting the small scale sub-sector, which lands more than $\frac{3}{4}$ of locally consumed fish and has free and open access to the resources;
- The difficulties inherent in controlling the industrial sub-sector;
- The lack of adequate financial and human resources needed to undertake research and surveillance;
- The lack of adequate levels of understanding of the management issues among the resource users themselves;
- The absence of clear objectives and implementation strategies with respect to resource management;
- The lack of collaboration on fisheries management between stakeholders

The Gambia's Fisheries Management Plan is expiring soon but no steps have so far been taken to develop a new one or revise the existing one.

As mentioned earlier in this report, if implemented, the specific objectives for the fisheries sector could make worse existing problems of over-exploitation. The fact is that national policy goals are sometimes in conflict with sectoral policy goals.

Chapitre 6

Exports in a Context of Resource Scarcity and International Trade Liberalisation

Exports of fish products from The Gambia began in the late sixties with shrimp as the predominant product harvested from the Gambian estuary. Since then, fisheries exports have diversified, and exports include products from the marine fisheries. Exports of either chilled or frozen fish products supply markets in the European Union; notably to Spain, Italy, Belgium and the UK. Cured fish, either smoke-dried or sun-dried are exported to countries of the sub-region, while shark fins are exported to Hong Kong.

A considerable proportion of the fish the country produces is taken abroad and not registered as exports because it does not pass through the normal export channel and formalities. The official data on the volume of trade in fish and fish products from the Gambia only tells part of the story. Virtually all the fish produced by the industrial fisheries sub-sector in addition to fish exports registered by the Ministry of Trade, are taken out of the country. Exports of fish and fish products from The Gambia strictly speaking, should include the 6-10 thousand metric tonnes produced annually by the industrial fisheries sub-sector and landed outside the country.

Annual exports of fish products officially recognized as such have been between 1 and 2 thousand metric tonnes in the last fifteen years (Table 12). The highest exports in terms of tonnage during that period were registered in 1997. The relatively high export figures of 4 and 5 thousand metric tonnes registered prior to 1987 were due to the large quantities of *Sardinella* exported by Seagull Fisheries Cold Stores, but it ceased operations in the late 80's. The *Sardinella* stocks in The Gambia have remained virtually untapped. For some three years now, a handful of coastal fishermen in Bakau and Tanji have been operating purse seines and landing a few tonnes of Herring as a substitute for fresh Bonga when production of the latter has been low.

Table 12: Exports of fish products from the Gambia

Year	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
Qty (1,000 MT)	4,8	4,4	5,6	5,5	1,1	1,1	1,4	1,5	1,1	1,6
Val. (Million GMD)	3,53	5,04	6,70	11,36	16,03	17,15	31,12	32,47	17,60	24,63
Year	1994	1995	1996	1997	1998	1999	2000	2001	2002	
Qty (1,000 MT)	1,9	1,8	1,5	2,1	1,7	1,7	0,9	0,9	0,9	
Val. (Million GMD)	30,62	27,15	27,272	44,427	33,293	36,563	32,779	34,984	21,334	

Source: Fisheries Department 2004

Effects of the Export Trade in Fish and Fisheries Products on the Development of the Fisheries Sector

Exports have been important for the foreign exchange earnings for the country, but export earnings have stagnated at around 30 million Gambian dalasi in the past few years. The export trade in fish and fish products has had a limited positive impact on the development of the fisheries sector. Trends over time in the value of exports relative to quantity have been irregular, indicating instability in the export trade. The quantity of exports has fluctuated between 1 and 2 thousand metric tonnes in the past fifteen years, whilst the value has fluctuated from 16-44 million dalasis. In the past 2-3 years, the value of exports has dropped by about 15%. One of the reasons for this is that many of the land based processing companies in the Gambia have not been operated at full capacity, resulting in substantial quantities of exportable products being sold in Senegal in as fresh products with hardly any value added.

The export trade to European countries, is by far the most significant, in terms of the volume and value of targeted products such as the demersal fish species, which are much by all the categories of industrial fishing operators. These include national fleets, joint venture fleets and the fleets operating under the fishing access agreements.

The bulk of the raw fish that ends up in the small scale fisheries. As the effort of the small scale fisheries has been on the increase in the last few

The small scale fisheries sector has been under pressure to service the export market. The fishing pressure on exported species has also become an important issue in Europe due to expectations of sustainability. This resulted in increased pressure on the sector that caused by the activities of industrial fishing for demersal fish by the export market. Consequently this has led to a decline in local markets, which have been a household. Households have started to consume pelagic fish species. However, as a substitute for demersals, the pressure on local markets, with corresponding range of choice available to local consumers. Due to the scarcity of demersal fish, the pressure has been significantly diminished. The trade has impacted negatively on

However, the price increase has been favourable to small scale fishers. On this basis, the export trade has facilitated it possible for them to earn higher incomes. Furthermore, because of the quality, it is expected that there will be a change in the handling of catch by fishers. This could have had some positive effects on the sector, though the benefit/cost ratio of this is not in precise terms, it is evident that there is a need. Nevertheless, there is room for

The export trade in the Gambia has been dominated by fisheries products with very limited technological capacity in the sector. This is limited. Undoubtedly for Gambia

The bulk of the raw fish that ends up part of the export trade is provided by the small scale fisheries. As noted earlier, both the landings and fishing effort of the small scale fisheries sector, particularly of demersal fish, have been on the increase in the last two decades.

The small scale fisheries sector intensified its fishing of the demersal fish stocks to service the export markets. This translated into an increase in the fishing pressure on exported species. The small scale fisheries sub-sector has also become an important supplier of raw fish for the export trade to Europe due to expectations of higher incomes from exports. Not only has this resulted in increased pressure on demersal fish stocks, over and above that caused by the activities of industrial fishing fleets, but the large demand for demersal fish by the export trade has made it even more scarce in local markets. Consequently this has had an impact on the price of demersal fish in local markets, which have risen beyond the reach of the average household. Households have shifted to more readily available and cheaper pelagic fish species. However, due to the increasing demand for pelagic fish as a substitute for demersals, these too have become increasingly scarce in local markets, with correspondent increases in the price of pelagic fish. The range of choice available to local consumers has also been reduced due to the scarcity of demersal fish the local markets. For species like the Black grouper, the pressure has been so great, that once abundant supplies have been significantly diminished. The above clearly indicates that the export trade has impacted negatively on demersal fish stocks.

However, the price increase of demersal fish on the local market is favourable to small scale fishers engaged in the demersal fisheries. On this basis, the export trade has favourably impacted on these fishers, making it possible for them to earn higher incomes, even though this may be short-lived. Furthermore, because of the exigencies of the export market for quality, it is expected that there have been some improvements in the handling of catch by fishers. It is only in this connection that the export trade could have had some positive effects on the development of the sector. Even though the benefit/cost ratio of the impacts of the export trade is not known in precise terms, it is evident that it cannot be on the whole favourable. Nevertheless, there is room for improving the ratio as indicated below.

The export trade in the Gambia centres on the production of bulk frozen fisheries products with very little or no value added to the product. The technological capacity in the country for producing value added products is limited. Undoubtedly for Gambia, which exports fish products of all kinds,

it would be more if exports were more adequately processed. This would enhance the value of goods being exported. For the Gambia to have a share in the international market for value added fish products, substantial capital investments would have to be made in processing plants and considerable effort put in penetrating these markets. Estimates of potential output from value addition to the fish currently produced by fishing fleet under bilateral access agreements, is estimated at around 3 million US dollars, based on the conservative estimate of a 50% increase in the net value and an increase in the yield by two thirds. This could provide 1,000 jobs for post-harvest fish workers in the country. However, for now, it would seem that the stakes appear too high for this to happen. The EU and the Associations of fish processing companies in the member states, would not welcome highly processed and valued added fish products from their distant fleet in countries like the Gambia, because their *raison d'être* is to provide raw materials for fish processing industries in Europe. This is why the EU provides incentives to facilitate the operations of its distant fleet and if necessary employs whatever protection mechanisms are required including non-tariff trade barriers, to ensure that the degree of processing done on fish products destined to EU markets is kept to a minimum, so that they can serve the raw material needs of the processing plants.

Export Tax Concession

The Gambian Government, in a bid to encourage exports backed by letters of credit, provides export tax concessions on fish products. Because this incentive is intended to encourage exports, notably of fish, such as the demersal which is already under great pressure from over fishing, it has a negative impact on the overall fisheries resource base.

Depreciation of The Gambian Currency

The value of the Gambian dalasi has been subject to constant depreciation at an unprecedented rate in the last 2-3 years. Inflation is also high and on the increase. These trends have significant negative effects on the fisheries. Operating costs are high and constantly increasing while revenues and profits are declining as indicated in Sections 3.2.1 and 3.2.2. If these trends continue, the value of Gambian fish exports will decline accordingly, as will the livelihoods and living standards of fisherfolk who are dependent on these export fish species and who will become impoverished. This will likewise push fishermen and women to intensify fishing in order to land more fish to compensate for "losses" suffered as a result of inflationary pressures. This will also increase the pressure on the bottom fish species (demersal fish stocks).

Chapitre 7

Fishing Access Agreements

Fishing access agreements

The widespread declaration of Exclusive Economic Zones (EEZs) by coastal states, in the years leading up to the close of the negotiations of the UNCLOS provided the institutional impetus for fishing access agreements. The Law of the Sea (UNCLOS 1982) conferred rights on coastal states to determine how the marine (and other) resources were to be exploited within their respective EEZ. In effect, the resources in coastal waters out to 200 nautical miles were shifted from falling under an open access regime to a state property regime. Gambia's EEZ extending to 200 nautical miles covers a total area of 10 500 km².

The Gambia has had two types of fishing access agreements. The first, with Senegal, is a reciprocal access agreement that does not envisage payment in return for access for fishing opportunities. The second type of agreement, which covers the bulk of industrial fishing taking place within Gambian waters, is a "compensation for access" agreement with the European Union on the one hand and Japan on the other. The agreement with the European Union differs from that with Japan in the type of access payment. Whereas with the EU, the payment is "State-to-State", the payment with Japan is "Enterprise-to-State".

Enterprise-to-State payments have been generally preferred over State-to-State payments, because the latter payments are regarded as a form of subsidy to distant water fleets. There has been much criticism of the fishing access agreements between the EU and African countries in this regard. Most fisheries subsidies have not produced positive results and are believed to be potentially unsustainable because they encourage over-exploitation of fish resources and dependence on public sector support.

The Gambia-EU Fishing Agreements

The Gambia and the EU signed a compensatory fishing access agreement in 1986 and have renewed it on two consecutive occasions, in July 1990 and

July 1993. The last renewal expired in June 1996 and has since not been renewed. The fleet comprised French, Greek, Italian and Spanish fishing vessels.

The agreements were implemented through three protocols with fishing opportunities and financial compensations as shown below.

Table 13: Gambia – EU Fishing Access Agreement annual fishing rights and financial compensation

Annual Fishing rights	1987/90	1990/93	1993/96
1 (1)TUNA VESSELS			
Freezer seiners	48,500 GRT	40	23
Pole and Line	2,900 GRT	17	7
(2) TRAWLERS			
(a) Fresh fish	7,000 GRT	2,000 GRT	410 GRT
(b) Freezer trawlers:	2,325 GRT	4,400 GRT	2,000 GRT
Shrimp	10,500 GRT	10,300 GRT	750 GRT
(c) Freezer trawlers:	2,900 GRT		
Others	1,200 GRT		
(3) LONG LINERS			
2 FINANCES			
(a) Financial compensation	3.30 million ECU	3.87 million ECU	1.10 million ECU
(b) Scientific programmes	80,000 ECU	80,000 ECU	80,000 ECU
(c) Training Awards	NA	165,000 ECU	220,000 ECU
Total finances	3.38	4.115	1.400

Source : compiled from Fisheries Department's records

Despite the under-utilization of the fishing opportunities made available, the fishing vessels which operated under the Gambia EU agreements constituted a significant proportion of the entire fleet. Throughout the period of the Gambia-EU fishing agreement, EU fleets constituted the majority of all the industrial fishing vessels that operated in Gambian

waters. Their catches accounted for at least 60 % of the industrial fish output of the country.

The Gambia-Senegal Agreement on Maritime Fisheries

The Gambia and Senegal concluded and signed a reciprocal fishing agreement on maritime fisheries in the eighties. This agreement covers both industrial and small scale fishing vessels. The Gambia-Senegal agreement on maritime fisheries dates back to 1982. It has been revised twice, first in 1992, 1994 and recently in 2003. The first and subsequent agreements have been implemented with protocols mutually agreed upon from time to time. The Gambia-Senegal Agreement on Maritime Fisheries is a reciprocal fishing access agreement, but in actual fact there has been very limited reciprocity in the implementation of the agreement. Senegalese small scale fishermen and industrial fisheries vessels undertake fishing in Gambia fully utilizing the fishing opportunities set for Senegal, while the Gambia has hardly utilized its opportunities. The number of Senegalese fishing vessels operating under access agreement has generally remained constant, at around 20. In the small scale sector, the majority of fishermen operating in the coastal waters are Senegalese. In the past two decades, Senegalese fishermen have made up between 55 to 64% of the total number of fishermen exploiting coastal fisheries resources. As mentioned above, marine small scale fisheries production by the small scale fisheries sub-sector has quadrupled in the last two decades from 8 thousand to 32 thousand metric tonnes.

On the positive impact side of this Agreement, it can be seen that it has no doubt contributed to increased fish production. However, if the small scale fisheries sub-sector, said to account for about 45 % of total demersal fish production (Saine, A. 2001) is one of the causes of over-fishing of the demersal fish stocks, then it is logical to conclude that the Senegal-Gambia agreement negatively impacts on the size of demersal fishing stock.

In Senegal, it is common knowledge that Senegalese small scale fishermen operating from the region of Mbour fish in Gambian territorial waters and land their catches in Senegal. The implications of this practice on the fisheries resources of the Gambia are clear. This and the statistics presented above on the small scale fisheries would indicate that the effects of the activities of small scale fishermen in Gambian waters on the fisheries resources must not be underestimated.

Fishing Agreement between The Gambia and Japanese Cooperative and Fishing Associations

The Gambia has fishing access agreements with Fishing Associations and Cooperatives in Japan dating from 1992. These agreements are neither compensatory nor of the reciprocal opportunity type. Japanese long liners and purse seiners targeting tuna, are granted licences to fish in Gambia's EEZ. The proportion of Japanese tuna vessels as a percentage of all the boats licensed to fish in the Gambia, has fallen from 21 % in 1983 to 5 % in 1999. The fishing opportunities provided by the Gambia-Japan agreement are specifically relative to Tuna. These and many Japanese vessels themselves, are targeted by joint venture European vessels.

Impact of fishing access agreements on the sustainable management of fisheries resources

Unlike the Gambia-EU and Gambia-Senegal agreements, the Gambia-Japan agreement exclusively relates to fishing opportunities that are not targeted by the national fishing fleet. The fishing opportunities are limited to Tuna. Fleets under Gambia-Japan agreement as well as joint ventures have been in competition with EU vessels since 1987 and up until to 1993, when The Gambia ceased to have a fishing access agreement with the EU. Thereafter, the Tuna stocks in the Gambia have been targeted by Japanese Tuna and joint venture fleets. For these reasons, the Gambia-Japan fishing access agreement has been the least controversial and least problematic.

Even though the Gambia-Senegal agreement has been the oldest agreement, this has not generated as much interest as the Gambia-EU fishing agreement. In general, the Gambia-Senegal agreement on maritime fisheries has been perceived as acceptable. The agreement being reciprocal and the two countries sharing some fish stocks, in theory, each country is expected to equally benefit from the collaboration. In practice, however the Gambia reaps much less benefit from the agreement. Even though the quota allocated to the industrial fleets of the two countries is utilised by each country annually, reciprocity as far as small scale fishermen are concerned does not in reality take place. Whereas very few small scale fishermen (if any) fish in Senegalese waters, Senegalese small scale fishermen not only operate in Gambian waters but also dominate the small scale fisheries in The Gambia.

In contrast the Gambia-EU access agreement being a compensatory agreement, the expected benefits of the parties are different in nature and

value. It has not been possible to evaluate the actual catches and the corresponding costs of fishing access of the Gambia-EU agreement vessels due to the unavailability of data on their catches, however, it is assumed that for the period 1987/1990, the value of the catches were significantly higher than the costs. This may have influenced the decision to increase fishing opportunities and compensation for the ensuing period. The period 1990 to 1993 may not have been as favourable as the previous period. This may have been why both opportunities and compensation were drastically reduced from during that period. Since the expiry of the agreement for the period 1993/1996, it has not been renewed. From the foregoing, it can further be deduced that the value of catch / cost of fishing access for this period may not have been attractive enough for the EU. Whatever the reason for the non-renewal of the agreement in the past, whether considerations about profitability on the part of the EU or the active decision of the Gambia not to renew the agreement, the fact remains that a renewal of the agreement this time, is clearly not to the advantage of at least one of the parties. Gambia's fishing access agreements on the other hand with both Senegal and Japanese Associations continue to this day.

Even though it has not been quantified, there is no doubt that the level of fish harvesting has affected the fisheries resources of the country and the coastal communities that depend on them. Significant changes have also taken place in the status of the fish stocks with the advent of industrial fishing vessels in the fisheries of the country. Both the industrial and small scale fishing vessels that have been operating under bilateral access agreements have a large share of responsibility for the changes. These agreements have failed to provide conditions conducive to the sustainable management of the fisheries resources. In the Gambia, probably the most negative impact of the activities of the fishing fleets under bilateral access agreements, has been the pressure exerted on the demersal fish stocks. Excessive fishing effort from both the industrial and small scale fisheries has led to a threat of stock depletion and a loss of biodiversity in the demersal fisheries.

It has not been possible to do a cost/value (benefit) analysis of the impact of the level of exploitation of the resources by fishing vessels of bilateral access agreements due to the lack of data on their catches. Also, the fishing opportunities of these agreements could not be evaluated and described by a uniform set of units, for example the number of trawlers because in some cases fishing opportunities for certain resources are set in GRT while in others they are set in number of trawlers. It has thus been impossible to

examine and analyse the costs of fishing access in relation to fishing capacity of the fleets. However, the effects of the fishing access agreements on the conservation, exploitation and sustainable management of the fisheries resources can be summarised as follows:-

Positive impacts

- Increase in national fisheries production
- Increase in public income from fisheries
- Increased number of staff professionally trained in fisheries
- Infrastructure development in small scale fish landing sites

Negative impacts

- Degradation of demersal fisheries biomass;
- Environmentally destructive subsidies on fish harvesting costs;
- Competition in the exploitation of the fisheries resources between fishing access agreement vessels and the national fleet
- Fishing access agreements make no contribution to national market supply of fish

Increase in National Fisheries Production

The overall scale of fisheries production became more intensive with the introduction of industrial fishing trawlers targeting the demersal fish stocks. Relatively high catches (from around 12 to over 20 thousand metric tons per annum) by over 100 industrial fishing vessels were reported from the mid-1980s up to the early 1990s. The closure of Seagull Fisheries Cold Stores which was expected to lead to a drastic reduction in the country's total fish production output coincided with the signing and coming into force of the Gambia-EU fishing agreement in 1986, hence the country's total output did not fall drastically. The production from the EU vessels appeared to have offset the drop expected in the overall fish production in the country after the closure of Seagull Fisheries Cold Stores. Since 1994, fewer industrial vessels, some 60-100, both national and international fleets with fishing access agreements, have been operating yearly in Gambian waters and producing between 6-12 thousand metric tons of fisheries products. From 1987-1996, the fishing fleets under bilateral access agreements constituted 40-60% of the industrial fishing fleet that operated in the Gambia (see table 14).

Table 14: Number of fishing vessels operating under bilateral access agreements in The Gambia

Year	1991	1992	1993	1994	1995	1996
Gam-EU	45	26	32	22	20	3
GamJapan	0	0	21	16	5	14
Gam-Senegal	17	24	19	21	15	20
TOTAL	62	50	72	59	40	37
Year	1997	1998	1999	2000	2001	2002
Gam-EU	0	0	0	0	0	0
GamJapan	6	5	3	3	1	2
Gam-Senegal	18	20	26	25	12	10
TOTAL	24	25	29	28	13	12

From 1996 to date, fishing fleets benefiting from bilateral access agreements have assumed less importance in the sub-sector, making up 10-30% of the entire fleet. Industrial fishing activity in The Gambia was most intensive during the 1987-1991 when the number of industrial fishing vessels operating under fishing access agreement as well as the total output of industrial sub-sector, reached a high point.

Fish production by the small scale sector has been rising steadily in the past three decades. Demersal fish landings within the small scale fisheries sub-sector have significantly increased over the last decade, averaging some 8,000 metric tons annually. This is approximately half of the available demersal fish stocks.

Increases in Public Income from Fisheries and in the Number of Staff Receiving Professional Training in Fisheries

The compensation for access in the form of nominal quota allocations, particularly in relation to the EU agreements contributed significantly to The Gambia's public purse during the period when the agreement was in force (between 1987 to 1996). Apart from the licence fees and compensation as direct payments made to the Gambian Accountant General, scholarships were provided for staff of the Fisheries Department and

support given to the small scale sub-sector. Throughout the entire period of the agreement some 9 million ECUs were paid into the state treasury as financial compensation. This excluded revenues from licence fees.

Part of the financial compensation from the Gambia-EU fishing access agreement was used to finance the professional training of Fisheries Department staff. In all 5 members of staff benefited from training in Fisheries.

Infrastructure Development in Small scale Fish Landing Sites

Fisheries development assistance to the Gambia by the EU and Japan has been mainly focused on small scale fisheries development, notably with respect to:

- improving the working environment and conditions of the small scale fishers and making more fish available locally.
- improvements in the infrastructure of the landing sites to reduce the time between production and consumption (and export).

These initiatives, even though much welcomed by the beneficiaries and even though they have had a positive impact on the lives of fishing communities, have also been viewed by many as closely linked to fishing access agreements. Studies that have looked at development assistance flows to the sector and access compensation flows between the EU and ACP countries have found that large recipients of development assistance tend to sign access agreements with the EU (Nick Johnstone, 1996). These development initiatives are regarded as complementary actions to the interests of these distant fleet countries and therefore as indirect subsidies to the fishing industry of the European Community countries concerned as they reduce the industry's costs substantially. Development assistance aimed at improving the ACP countries' capacity for processing and adding value to their exports, which has been a priority need for developing the fisheries sector, has not received any noteworthy attention as this is not complementary to the European Community's trade policy objective of facilitating the provision of raw materials for the fishing industries of the member countries.

Degradation of the Demersal Fisheries Biomass

Even though the evidence is derived from partial surveys conducted in 1992 and 1996, the available information in Table 6 below indicates a downward trend in the biomass of the demersal stocks. The biomass of the pelagic

stocks indicates that the stocks are in a good state despite the fluctuations in abundance levels, which is not an abnormal feature, given the migratory patterns of these kinds of pelagic stocks.

Table 15: Biomass estimates of demersal and pelagic fish stocks in The Gambia

Year	Biomass MT Demersal	Biomass MT Pelagics
1986	43 645	
1992	30 000	160 000
1995	22 000	156 000
1996	-	122 000
1997	-	113 000
1998	-	173 000
1999		510 000
2000		213 000
2001Jun		217 000
2001Nov		165 000
2002Jun		470 000
2002Nov		242 000
2003Jun		62 000
2003Nov		285 000

Source: Dr. Fridtjof Nansen Cruise Report, 1997

The trend in catch per unit of effort for many of the demersal fish species is on the decline. This indicates a trend towards decreasing levels of abundance of the stock, in line with the observations noted above in table 15.

The available data on catch per unit of effort indicates that the stocks of *Pagellus bellotti* are fully exploited. Stocks of *Croaker (Pseudotolithus spp)* and *Catfish (Arius spp)* are in danger of being over-exploited, while those of the *Black grouper (Epinephelus aeneus)* have been over-exploited and are close to extinction. For *Shrimp (Penaeus notialis)*, the CPUE data indicates that the stocks have been fully exploited and for *Sepia spp*, that they have been over-exploited.

Shrimp and fin fish trawlers have significant quantities of 'by-catches' comprising of large quantities of small size fish which are discarded at sea. This capture and discarding of the small sized fish degrades the stocks of

the species in question. Discard rates of shrimp vessels are known to be quite high. In Senegal, they vary from 1.6 to 3.0 kg (Nick Johnstone 1996). Although little is known of the discard rates of shrimp vessels fishing in the Gambia, similar rates to those found in Senegal are likely.

Lower catch rates and the search for maximum gains from fishing trips has given rise to negative practices, which have contributed to rapid rates of resource depletion. These include the use of illegal fishing practices which enhance the catching capacity of fishing gear in an effort to compensate for lower levels of abundance. As a consequence, capacity some small scale fishers have resorted to the use of smaller mesh-size nets than were used in the past. Considering that the overall level of effort is generally higher than the sustainable exploitation rate, and the determination of industrial fishing vessel operators to have profitable fishing trips by increasing fish catches, they are also obliged to develop compensatory adjustment mechanisms. In the last decade, shrimp trawlers have formed a large percentage of the entire industrial fishing fleet, varying between 14 - 42 and for half that time they were the dominant players. The catch rate for offshore shrimp is quite small yet the operators of shrimp trawlers would seek licences of them to take advantage of their smaller mesh-size (50 mm instead of 70 mm). They mainly catch fin fish and very little quantities of shrimp. Registering as shrimp trawler is merely a pretext to be allowed to use nets with 50mm mesh sizes, and constitutes yet another compensatory adjustment mechanism. This practice results in the capture and landing of young and juvenile fish giving rise to the same consequences as noted above with respect to the reductions in the stocks of the fish species concerned.

The above are consistent with observations made on the status of the fish stocks by several concerned parties, including fishermen, fish traders and scientists of the Fisheries Department in The Gambia that most of the demersal stocks are heavily exploited.

Competition between Fishing Fleet operating under Access Agreements and the National Fleet

The presence of fishing fleet operating under access agreements in Gambian waters has led to rising levels of competition for certain fishery resources between them and the national fleets, in particular of the small scale sector. There is currently a high level of competition for demersal species such as cephalopod, shrimp and sole. The competition is quite intense for the shrimp stocks. Whereas the small scale shrimp fleet is exclusively based on exploiting estuary shrimp stock in the river, coastal shrimp fishing by

... vessels are known to be ... kg (Nick Johnstone 1996). ... of shrimp vessels fishing in the ... are likely.

... gains from fishing trips has ... contributed to rapid rates of ... of illegal fishing practices which ... an effort to compensate for ... capacity some small scale ... mesh-size nets than were used in ... of effort is generally higher than ... determination of industrial fishing ... trips by increasing fish catches, ... compensatory adjustment mechanisms. In ... a large percentage of the entire ... 14 - 42 and for half that time they ... for offshore shrimp is quite small ... seek licences of them to take ... 50 mm instead of 70 mm). They ... quantities of shrimp. Registering as ... be allowed to use nets with 50mm ... other compensatory adjustment ... capture and landing of young and ... consequences as noted above with ... of the fish species concerned.

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Operating under Access Agreements

... under access agreements in Gambian ... competition for certain fishery resources ... in particular of the small scale sector. ... competition for demersal species such as ... competition is quite intense for the ... shrimp fleet is exclusively based on ... the river, coastal shrimp fishing by

industrial trawlers, exploit the adult marine shrimp stock in the sea. Unregulated and excessive capture of marine shrimp stock at sea can result in "recruitment over fishing" leading to the collapse of the shrimp fishery as a whole given that it relies on the young shrimp larvae produced at sea by the adult shrimp population and later harvested (as pre-adult shrimp) while migrating seawards.

Fishing Access Agreements make no Contribution to the National Market Supply of Fish

Fishing access agreement fleets contribute nothing to the national market supply of fish, despite the fact that one of the requirements in the granting of fishing licences under the Gambia-EU agreement is the landing of 10 % of all fish caught. The latter is said to be constrained by the lack of a fishing port in the country. The retained catches of the industrial fishing fleets operating under access agreements comprise the so-called "high value" species: shrimp, octopus and cuttle fish which are intended for the European Union and Japanese markets and do not contribute to the national market supply. The supply of these species, in particular of the demersal fish species to local markets, is further limited by the fact that the small scale fisheries has also become a source of supply to European markets. This is due to the higher income that fishers can get from them. The estuary shrimp fishery was developed in the 1970s to service export markets. Together with Cephalopods they have always been exclusively export market products.

Subsidies

Due to the strong market demand for fish in Europe, EU countries import large quantities of fish. As indicated above, fishing access payments for the Gambia-Japan fishing access agreement based on an "Enterprise-State" mode of payment. This means that the cost of access is borne by the Japanese Associations. The Gambia-EU agreement is rather different. Payment for access is "State-to-State" with the EU shouldering the cost of access. The agreement is complimentary to EU's trade policy objective of supplying its markets and processing factories with raw products from third countries. The financial compensation that the agreement provides is a form of subsidy to the cost of production and is an incentive to EU vessel operators to harvest more of the resource. Criticisms of the access payment subsidy regime is not so much because of its trade distorting effects, but because of the negative impact it can have on marine resources and the environment.

As a result of the implementation of Structural Adjustment Programmes, there has been a decline in the public subsidising of fisheries, in particular,

with the withdrawal of duty concessions on fuel used by the fisheries sector. However, the sector still enjoys some incentives, notably the granting of a tax waiver on imports of fish and fish related materials and equipment and a tax exemption on income derived from exports of fish and fishery products as long as financial transactions are performed through the banks and are accompanied by irrevocable Letters of Credit. While these incentives may have been designed to serve certain worthy and desirable purposes, they also act as incentives to over fishing and are a constant source of pressure on fish stocks.

Constraints in negotiating fishing access agreements

A major constraint to The Gambia negotiating fishing access agreements is the lack of sufficient scientific information on the fish stocks which can promote sustainable resource management. There are insufficient supplies of financial, material (in terms of equipment) and human resources, to undertake all the necessary research in Gambian waters. There has been much reliance on the studies conducted by "R/V DR. FRIDTJOF NANSEN", which have been limited to hydro-acoustic surveys of small pelagic stocks. The Gambia has not yet had an up-to-date, comprehensive, scientific assessment of the state of her fish stocks. While there is up to date information available on pelagic stocks, the only comprehensive demersal fish stock survey carried out in 1986 is outdated. Estimates of the MSY for demersal fish stocks have been extrapolated from partial surveys conducted in 1992 and 1995. Accurate information on the demersal fish stocks is essentially unavailable. The need for a comprehensive assessment of these stocks is made greater by the fact that current production levels of demersal fish exceed the MSY estimate.

In negotiating fishing access agreements with large and powerful entities like the EU, The Gambia's bargaining position is limited by being in a delicate and vulnerable position. This position is further weakened because:-

- (i) certain fish stocks found in The Gambia migrate to nearby countries - The Gambia, Senegal and Guinea;
- (ii) cooperation between countries in the region in negotiating agreements is lacking.

Hence, the bargaining position of one country acting alone is weakened because European Union negotiators can negotiate at any one time with individual countries and can favour one country in preference over another.

Chapter 8

Stakeholders' Views

Activities and potentials

- Interview were conducted in Bakau, Banjul, Brufut and Tanji with a range of stakeholders which included fishermen, fishmongers/vendors, factory processors/exporters and members of civil society. A consensus overwhelmingly emerged among interviewees that fish abundance had declined and that the sizes being landed and sold at the markets were small.

Views on the resources

- Traditional knowledge of the sea and its resources is vast and well embraced in fishing communities. The fishing grounds of the different species during different seasons have long been charted and identified. In most cases, large concentrations of rocks, which have been given specific names and found throughout the entire fishing zone up to 10 nautical miles beyond the coastline are used as landmarks (Mamanding, 1995).
- According to Mamanding (1995) the small scale fishermen also have knowledge of the ecosystem and interaction of the species in different areas. They have reported that meagre (Beur) and African red snapper (Jaronge) are commonly mixed with shrimp because they prey on them. Barracuda is associated with mackerel and many fish follow shads (bonga) and shoals of sardinella (Yaboge) to prey on them.
- However, statements about the reduction in abundance of the resources have corroborated findings detailed in Mamanding (1995) where Brufut operators (usually targeting demersals) have stated that Groupers (chaff) and red snapper (Jaronge) have declined and certain associated species have not been caught or seen in the past 30 years. The scarcity of one species is sometimes invariably related to the scarcity of associated species.
- The fishermen explained that they now have to travel long distances in search of fish, spend longer amounts of time for smaller catches.

However, Pelagic stocks such as bonga Shads, Sardinella, Carangids and Mackerel were not regarded by the fishermen as showing signs of depletion or stress.

- Factory owners / processors and exporters have echoed similar views on the declining state of fisheries resources. Supplies of raw fish materials for processing have been insufficient and irregular compared to 10 years ago. Factories rely on small scale catches of mainly Sole fish, shrimps and cuttlefish, for processing because most do not land their catches in The Gambia.

Fishing Activities

- The persistent use of beach seines and drift nets by certain small scale fishermen is viewed as being destructive and should be banned. Problems and conflicts between "drift netters" and "gill netters" still exist and according to Mamanding (1995), the drift netting for shads (Bonga) in Tanji (fishing site) has resulted in series of disputes, tension and protracted conflicts between Brufut fish landing site with gill netters and Tanji fish landing site drift netters.
- During discussions, the impact of trawlers on the resources was deemed, by all to be the single most important element causing rapid decline of certain stocks of commercial. It was also mentioned that small scale shrimp harvesters operating in the estuary and on its tributaries are exerting considerable pressure on stocks and should be monitored and controlled to reduce and prevent the capture of sub-adults and juveniles in huge quantities.
- Fishermen noted that occasionally massive amounts of dead, young threadfins, croakers, grunts and other fish are seen floating at sea apparently discarded by trawlers.

The Potential

- Whereas factory operators/exporters and some members of civil society think that the resources can still be replenished, small scale fishermen have generally expressed doubts especially about the state of the demersal stocks. Optimism about the sustainable development of the pelagic fishery, comprising mainly clupeids, carangids and mackerels was nevertheless widespread. However, some factory owners are sceptical because of the low market value of these species relative to their high production and export costs.

- Stakeholders generally held the view that the sector has a lot of potential but noted that action should be taken to curb the influx of trawlers and to make way for the regeneration of stocks whilst limiting any further damage to resources.

Environmental impacts of fishing

The views of operators in the small scale and industrial sub-sectors were obtained through interviews and discussions with some of their representatives. They are fully conscious of the current trend of declining catches and of a reduction in the catches of certain commercial species, particularly coastal shrimps and groupers. One of them, while accepting that the increased fishing effort may be contributing to this situation of declining production and the scarcity of certain species, held the opinion that climatic changes, particularly the drought of the '70s and '80s may be partly responsible. The activities of shrimp fishermen in neighbouring countries, for example small scale shrimp fishers in the Sine Saloum area of Senegal who continue to land huge amounts of juvenile shrimps are also contributing to the declining production of coastal shrimps. The renting of marine resources through fishing access agreements by West African coastal states without first ensuring that their national requirements are satisfied and also that the available resource base can sustain exploitation by third parties was questioned by small scale operators. They insist that the UNCLOS provisions with respect to the procedures to be followed before allowing third parties to exploit resources, must be respected.

Chapter 9

Points of Convergence and Divergence for Regional Co-operation

The Gambia's membership of the Sub-Regional Fisheries Commission (SRFC) and the Ministerial Conference of West African States Bordering the Atlantic Ocean, sub-regional and regional organisations established for co-operation in coastal and fisheries resources management and development, offer a number of opportunities for harmonising policies. For instance, the objectives of the SRFC include strengthening co-operation and co-ordination of Member States in harmonisation of policies on preservation, conservation and exploitation of marine resources in the sub-region. A relatively recent initiative of the Commission is a drive to establish a framework for the negotiation of fishing agreements between member states and third parties wanting to fish in the sub-region. The member states of the Commission have also developed and adopted a number of instruments for harmonising certain aspects of their fisheries policies.

The Ministerial Conference, whose membership extends from Morocco to Namibia, also seeks to harmonise the fisheries policies of its member states in order to promote the sustainable use of fisheries resources.

However, efforts to harmonise fisheries policies have not been successful due to the differences in the priorities of the different member states, particularly regarding the contribution of fisheries to the national budget. For example, the fact that a common framework for joint or block negotiation on fishing agreements has still not been established, is due to the fact that fisheries contributes significantly more to the national revenue of some member than others. Senegal and Mauritania derive more than 50% of their budgetary resources from fisheries. For them, there are limited benefits to be gained from harmonising a set of minimum conditions for access to fisheries and from the block negotiation of fishing agreements and the subsequent sharing of the fees that this would imply.

Chapter 10

Conclusion and Recommendations

In general, improving conservation, rehabilitating degraded habitats, improving the regulatory framework governing access to the resources and fair trade, will mean first reducing threats to habitats, ensuring compliance with exploitation levels commensurate with the resource base and establishing protected areas within fishing zones among other things. Implementing the above would be a step in the right direction

As discussed above, the operations of foreign fleet under fishing access have contributed substantially in the degradation of the demersal fisheries biomass. The period of greatest destruction was the same period during which these fleets were most active in Gambian waters. The production of demersal fish, having surpassed the MSY for demersal fish, indicated that the fishing effort had been excessive. The first step recommended for correcting the situation is the development of a comprehensive fisheries development plan to regulate access to the resources more effectively. The plan should be based on the best available scientific information and local knowledge of the fish stocks. There is an urgent need to establish reliable scientifically-based estimates of biomass and the potential of individual fish species, particularly the commercial species that are under more intense pressure. Access to the demersal fisheries should be limited pending a clear scientific assessment of the state of the stocks. For other fisheries resources for which there is up-to-date and precise information, where the national fleet is unable to exploit them or there is a surplus supply, after the needs of the national fleets have been worked out, the possibility of offering access to foreign industrial concerns should be considered. Offshore pelagic fisheries resources would fit into this category. Access rights specifying the total catch permitted by foreign fleets and clearly identifying what the total capacity of those fleets should be, could be allocated so that a sustainable level of fishing is guaranteed.

In the case of the stocks of Cuttle fish (*Sepia* spp.), Black grouper (*Epinephelus aeneus*) etc. for which an information gap exists on the status of the stocks, and which show signs of over fishing, the recommended management action is twofold; (i) for fishing mortality (effort or catch) to

be drastically reduced for *Sepia* spp. and (ii) the recommended course of action for Black grouper (*Epinephelus aeneus*) is to close the fishery targeting it.

It is recommended that no new fishing access agreement is signed for the time being. Of the two agreements that the Gambia is currently signatory to, the Gambia-Japan agreement could continue as it is without re-negotiation. However, the Gambia-Senegal agreement needs to be re-negotiated with a view to withdrawing the fishing opportunities given to the industrial fisheries. This will leave the small scale fisheries and the national industrial fleets with exclusive access rights to the demersal fish stocks. However, effective reduction of the pressure on the demersal fisheries stocks will only be possible if the combined catch and fishing effort of the two fleets is regulated. Both fleets should be required to pay a tax (fishing licences) on the fishing effort (GRT). In addition to the tax on the effort, the industrial fleet should pay a tax on the catch. 15-20 percent of the commercial value of the catch has been suggested by certain nations as the fees that should be levied, in order to share the economic cost of natural resources (G. Porter, 1999). This study recommends that the fees that should be levied in the case of The Gambia should not be below this level.

In future, when more up-to-date information is available on the size and state of demersal fish stocks and renegotiating access agreements for foreign fleets is up for consideration, it is recommended that the full cost of the fishing access be borne by the foreign fishing fleet through the payment of a tax on the catch and the fishing effort. This will ensure that there are no trade distortions and the fishing fleet that are granted access operate competitively. This measure will encourage fishing effort levels to adjust appropriately as stocks fluctuate. The pressure on the demersal fish stocks will consequently be eased.

Since the capacity for processing fish destined for export in a manner which will maximize the value added, is absent at present in the Gambia, it is evident that new investments are needed in plant and machinery and training. This could be one of the most important constraints that the country will be confronted with ie how to improve the value added of Gambian fish products destined for EU markets.

When the capacity is built for producing value added products in country, this would be a great incentive for the fish resources to be harvested by the national fleet. It would ensure that the 9,000 metric tonnes currently

produced by the industrial fishing fleets, with a potential output estimated at 6-9 million dollars accrues to the country. This could provide jobs and income to some 2000 fishing operators and their families and would boost the foreign exchange earnings of the country from around 1 million to 9-2 million US dollars.

In order to exploit the potential for value addition to the products destined for export, the form of the product for export should be regulated to ensure that products do not leave the country without a minimum level of preparation, processing and packaging.

Communities must be involved in resource management. To this end, communities and resource users must be adequately sensitised about the state of the resources and about the legislation passed to regulating community based management mechanisms.

Marine Protected Areas must be adequately defined and legally regulated. Considering the level of mangrove deforestation that has taken place, the following steps are recommended for restoring the mangrove vegetation.

Harvesting mangroves should be banned. The mangrove forest resources need to be studied for evaluating their current status. A mangrove tree planting programme should be launched.

It is recommended that aquaculture in the freshwater zones of the River Gambia be developed to salvage threatened fish species and for restocking the river with some of the rarer fish species.

The technical competence of the Fisheries Department and other concerned parties should be reinforced in terms of research, management and surveillance to improve resource management and monitoring.

Assistance should be provided to the Fisheries Department for developing manpower and capacity and acquisition of equipment.

Given that the fisheries resources consist of shared stocks, there is a need for collaboration in research and management planning at the sub-regional level. Efforts at regulating access to resources, by both the industrial and small scale fishing fleets, should also be harmonised.

As discussed in broad terms above, the impact of trade on the fisheries resources need to be addressed through appropriate and effective conservation and product development measures. Between regulatory and market mechanisms, solutions to current constraints should be mindful of resource conservation and product development.

Appropriate measures for the conservation of resources could include the following:

i) Market based or economic instruments

Implementation of a Quota system

The difficulty of implementing a quota system in a multi-species fisheries sector has to be borne in mind and resolved somehow.

Fishing Agreements

There is a need to review minimum access requirements particularly those related to the price of access.

ii) Regulatory powers

There is need to ensure the improved application of existing regulatory mechanisms and to introduced new laws where necessary.

iii) Institutional measures

In order to introduce sustainable resource conservation measures, all stakeholders need to participate.

Regarding product development, much has already been said in the preceding paragraphs particularly with reference to establishing mechanisms for adding value to products destined for local, regional and international export markets.

In this connection, there is need for:

i) Government interventions

Construction of infrastructures

Vital infrastructure would include, among other things, wharfs and landing site facilities, fish processing facilities for both small scale and industrial operators, storage facilities for cold storage and smoked and dried products, and roads for national and sub-regional communication.

ii) Market based mechanisms

Market based mechanisms and economic measures are likely to increase the production of value added products. It would be pertinent to address the following:

- Tax and customs harmonisation policies.
- Credit incentives.
- Access to New Markets.

Research into new markets and their specific features as well as into consumer tastes could facilitate the expansion of the sector and the development of new markets for fisheries products.

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Annex 1

Terms of Reference

I. Background

Fisheries resources constitute an important element in the socio-economic development of many coastal states in Africa; notably the six member countries of the Sub-Regional Fisheries Commission (SRFC) Cape Verde, The Gambia, Guinea-Bissau, Guinea, Mauritania and Senegal. Marine fish resources within the sub-region are extensively shared and are enduring heavy fishing pressure being exerted on them by these states for commercial purposes. This problem is compounded by a huge presence of foreign fishing fleets coming from afar through Fishing Access Agreement, Joint Ventures, etc., to exploit these resources in name of global trade.

For most of these countries, efficient and effective participation in the global economy has required substantial economic restructuring at home. Thus, in recent years, national governments have implemented structural adjustment programmes to stabilize and reorient their economies in order to face the challenges of development. This included in the first instance the restructuring of economies to increase foreign exchange earnings through enhanced trade and trade liberalization as embodied in the set of WTO agreements.

Recently, however, there has been an increasing concern over the potential negative impacts of trade liberalization, particularly on the environmental and natural resources of developing countries and countries with economies in transition where trade has grown most rapidly. These countries have found that economic activities supporting, or supported by, rapidly expanded trade can result in serious environmental degradation when complementary environmental policies are not in place.

Trade liberalization driven by macroeconomic policies and economic reforms, including Structural Adjustment Programmes (saps), may have environmental impacts, both negative and positive. A clear analysis of these effects is needed.

For the purpose of analyzing impacts related to the linkages and effects of fishing, trade and environment, the six member countries of the SRFC are implicated in the implementation of the Programme- "Fishing, Trade and Environment in West Africa". Each country is to set up a multidisciplinary stakeholders study team to undertake action-oriented research on unique trade-related environmental problems and their social and economic implications in diverse sectors and varied country settings. Each study concludes by recommending a set of practical measures – comprising command-and-control measures and economic instruments designed to meet national conditions – that promise to effectively halt trade-related environmental degradation, and in turn, ensure that the country's trade remains robust yet sustainable over the long-term. A concerted effort by all member states is the ultimate goal here as the stocks are shared.

II. Title of Study Areas

- Study to determine and analyze the impact of trade policies on fisheries resources management and evolution of cost and earnings of small scale and industrial units exploiting the resources.
- Study to evaluate the impact of Fisheries Agreements and Exports of fish and fishery products on the management of fisheries resources and the fisheries sector in general.
- Environmental Policies (national, international, sub-regional) related to fisheries
- Stock and Biological Assessment

Study Area A: Tasks to accomplish

- Review national, regional and international trade policies, agreements as they relate to or affect fisheries.
- Review multilateral trade agreements affecting trading in fish and fishery products (OMC, Cotonou convention, UEMOA, CEDEAO AGOA , all initiatives except arms).
- Compile statistics on catches and trade (national, regional and international) of Gambian fisheries products to illustrate trends in the past decade or two.
- Conduct discussions with representatives of the main stakeholders of the fisheries sector, relevant public and private sector and civil society

groups to gain information on their perceptions on the essential issues of the study.

- Assess impact of trade policies and multilateral trade agreements on the exploitation, conservation and the management of fisheries resources
- Examine the socio-economic consequences of trade policies for stakeholders and how their livelihoods are affected.
- Analyse trends of the costs and earnings (C&E) for the main industrial and small scale fishing units in the Gambia and examine how the trends are affected by trade policies.
- Analyse macroeconomic impact (balance of trade, foreign exchange earnings.....) of trade policies.
- Write a full report in the format agreed with the national coordinator of the findings of the study including recommendations.

Study Area B: Tasks to accomplish

- Review past and existing fishing agreements (bilateral, multilateral, etc, etc.) the Gambia has entered into.
- Analyze Gambian exports of fish and fishery (international and sub-regional)
- Conduct discussions with representatives of the main stakeholders of the fisheries sector, relevant public and private sector and civil society groups to gain information on their perceptions on the essential issues of the study.
- Assess impact(s) of fishing agreements on the exploitation, conservation and the management of fisheries resources and the fisheries sector in general
- Analyze the effects of the export of fish and fishery products on the fisheries sector (including the effects of value – adding)
- Assess the impact on the livelihoods of fishing communities of fishing agreements
- Assess the impact on the livelihoods of fishing communities of fish export
- Assess the macro-economic effects of fishing agreement in the Gambia
- Assess the macro-economic effects of exports in the country.

- Write a full report in the format agreed with the national coordinator of the findings of the study including recommendations.

Study Area C: Tasks to accomplish

- Review environmental policies (national, international, sub-regional) related to the exploitation of fisheries resources and trade of fish and fisheries products in the Gambia.
- Coastal area management: The study will review the management of coastal areas from the perspective of the fisheries sector including, among others, the extent to which the fisheries authorities, representatives of the fisheries sector and the fishing communities are consulted in decision-making and are involved in other areas related to coastal area management.
- Conduct discussions with representatives of the main stakeholders of the fisheries sector, relevant public and private sector and civil society groups to gain information on their perceptions on the essential issues of the study.
- Analyze impact(s) of environmental policies on exploitation, conservation and the management of fisheries resources.
- Determine the evolution of indices of abundances of selected commercial species (export fish) to understand the phenomenon of replacement threat to some of these species.
- Determine the evolution of (size) average length of these species at landing ports.
- Analyze different fishing methods and their impact on the environment (marine and coastal degradation)
- Sound opinion of professionals on marine habitat and coastal degradation
- Write a full report in the format agreed with the national coordinator of the findings of the study including recommendations.

Study Area D: Tasks to accomplish

- Review the trend of catch per unit effort of commercial fisheries (10 years at least)
- Review trend of indices of abundance from resources surveys

- Review mean length frequencies of study species.
- Conduct discussions with representatives of the main stakeholders of the fisheries sector, relevant public and private sector and civil society groups to gain information on their perceptions on the essential issues of the study.
- Determine threatened species and propose sustainable management options for these species.

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REPAO (Network on Fishery's Policies in West Africa), a Network of Actors for Economic, Social and Environmental Sustainability of Fisheries in West Africa

REPAO is a pole which ambition is to become a vast network of actors working in fisheries in West Africa (traditional actors, industrial actors, the valorisation sector actors, wholesale fish merchants, governmental, intergovernmental and nongovernmental institutions, development partners etc) who adhere and share a vision and tend to conciliate the search for competitiveness in international markets, the satisfaction of populations' food needs and the durable conservation of fisheries resources.

The constitution of REPAO in a strong, cohesive and representative network meets the need to

- On the political level: totally take into account the interests of fisheries actors in the national as well as the sub regional and international levels.
- On the social level: strengthen the role of traditional fishing actors, in particular that of women working in a sector dominated by men; confer a legal statute to women and promote their empowerment towards.
- On the normative hand: build capacities of actors to help them progressively ensure the passage to a durable economy and the valorisation of traditional fisheries (in the long term we wish actors could get control of all phases of production in the fisheries economy and get the means to ensure the food safety of sub regional populations as well as the quality of products).
- From a methodological point of view: adapt the instruments and economic means of development with the various social realities of actors and promote concrete and realizable cases of participated public policies.

Here are the objectives of REPAO

- General objective: create the conditions of a regional dynamic in stocks management – Incite and promote the emergence of sub regional concerted policies in fisheries reconciling 3 axes: Trade valorisation, Sustainable Management and food Safety.
- Participative objective: Support the elaboration of participated policies between all fisheries actors, – create the awakening for a durable management of fisheries – contribute to the comprehension of the constraints and find the means to get effective forms of regulation between actors.
- Objective of research: improve the state of knowledge of West African fisheries and the new stakes.
- Objective of formalization and policy dialogue: contribute to a better coherence in fisheries policies at the local, national and sub regional levels.

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Trade Liberalisation and Sustainable Management of Fishery's Sector in West Africa: Case study of Gambia

The Gambia is predominantly an agrarian economy with groundnuts contributing over 65 percent of GDP. With the crippling effect of drought over the last decade, and declining animal husbandry and vegetable production, fish has become all the most important source of protein for both rural and urban dwellers and is believed to have the potential to contribute to achieving the country's greater food security policy objective and to the development of the country's economic base in general.

The small scale fisheries sector intensified its fishing of the demersal fish stocks to service the export markets. This translated into an increase in the fishing pressure on exported species. The large demand for demersal fish by the export trade has made it even more scarce in local markets.

Whereas trade liberalization had previously been seen as a means of acquiring much needed foreign exchange the environmental and natural resource impact of over fishing the source of growing concern, particularly as some of the developmental goals once associated with a expanded fisheries sector, have not yet been realized in the Gambia. The study analyzes the impact of trade policies on fisheries resource management and the evolution of cost and earnings of small scale and industrial units exploiting the resources.

The Gambian Government provides incentives (for the promotion of certain activities and exports), mainly in the form of exemptions or reductions of customs duties and internal taxes. Whilst this stimulates exports particularly of commercially high value white fleshed fish, there is an urgent need for tighter and more effective control of the exploitation of demersal resources by the industrial and small scale operators.

Exports of fish and fish products are expected to grow further with the implementation of the Gateway project and with the Gambia's eligibility to export to US markets under the terms of the under the US Africa Growth and Opportunity Act (AGOA). The end result is the further exploitation of the fisheries resources in the face of scarcity.

Protecting the fisheries sub-sector through tariff barriers would surely have a positive impact on the national economy, since the import of similar products would be expensive relative to domestic products.