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THE ECONOMIC AND SOCIAL CONTRIBUTION OF FISHERIES TO THE ECONOMIC DEVELOPMENT OF THE GAMBIA

FIRST DRAFT BY

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LIST OF ABREVIATIONS

ACS	: Atlantic Coast Statum
ADB	: African Development Bank
BADEA	: Arab Bank for Economic Development
CAS	: Catch Assessment Survey
CPI	:Consumer Price Index
CSD	: Central Statistics Department
DOSFEA	: Department of State for Finance and Economic Affairs
EC	: European Commission (now European Union –EU)
EEZ	: Economic Exclusive Zone
EU	: European Union
FAO	: Food and Agriculture Organization of the United Nations
FEU	: Fisheries Economic Unit
GAFDP	: Gambian Artisanal Fisheries Development Project
GDP	: Gross Domestic Product
GMD	: Gambian Dalasi
GN	: Gambian Navy
HACCP	: Hazard Analysis Critical Contact Point
IDRC	: International Development Research Centre
JICA	: Japan International Cooperation Agency
LRD	: Lower River Division
MCS	: Monitoring Control System
NCU	: National Coordination Unit
RSU	: Regional Support Unit
SFLP	: Sustainable Fisheries Livelihoods Programme
SNA	: System of National Accounts
SOCU	: Sub-regional Aerial Surveillance Project
UK	: United Kingdom
USA	: United States of Amercica
EDF	: European Development Fund
F.O.B	: Free On Board
MDGs	: Millenium Development Goals
SFLP	: Sustainable Fisheries Livelihoods Programme
SRFC	: Sub –Regional Fisheries Commission
DOSFEA	: Department of State for Finance and Economic Affairs
FEUs	: Fisheries Economic Units
LRD	: Lower River Division

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EXECUTIVE SUMMARY

The Fisheries sector plays a very vital role in The Gambian economy. Its contribution to Gross Domestic Product (GDP) is estimated to range between 8 and 12 percent and it is the third largest food production sector, after agriculture and livestock. The sector is almost at par with the tourism sector that contributes about 12 percent of GDP.

Several reasons exist for believing that the contribution of the fisheries sector is grossly underestimated. These reasons include: the fact that fisheries statistical data collection is only limited to the more productive Atlantic Coast Stratum (ACS) even though fishing in other areas are significant; the fact that catches and other activities from Sport-fishing are not recorded; the majority of licensed fishing vessels landing their catches in foreign ports; that many fish are bought from the boats well before they are weighed; the production approach to GDP takes the total output cost and deducts the cost of inputs but the information relating to the cost of catches by trawlers has ever been rather weak and hence cost estimates of trawlers were arrived at indirectly; the fact that some of the ratios used in calculating the sector's contribution has now outlived their usefulness; and by just cross checking these estimates with either the consumption survey or with the share of fish in the Consumer Price Index reveals such an underestimation.

Whiles output in the artisanal sub-sector grew by 84% from 23,984.6 metric tones in 1985 to 32,336.0 metric tones in 2002, output in the industrial sector increased at a much lower rate fo 57 percent from 7,736.3 metric tones to 12,160.0 over the same period. Correspondingly, the supply of fish has increased over the years ranging from 26,058.1 metric tones to 43,719.8 metric tones between the years 1994 to 2003. This is so because both imports and exports have declined or rose slightly over the period, with the latter shrinking from 4,774.7 in 1998 to 445 metric tones in 2003 and the former increasing only marginally from 123 metric tones in 1994 to 156 metric tones in 2002. However, it is worth mentioning that imports of fish are just restricted to the processed fish and not the fresh one.

The fisheries sector's contribution to government revenues is also very small and ranges from 0.6 percent to 1.1 percent of total domestic revenues. Even this observed increment was more associated with upward revisions in the rates. This is very insignificant as compared to other countries like Ghana that earns up to 31 percent of her revenues from this fishing sector.

The fisheries sector plays a significant role from a nutritional standpoint and according to the author's calculations the average per capita fish consumption for the period 1994 to 2003 has increased from 25 kg per person to 28.4 kg per person. This is way above the 8.2 kg per person average for Africa.

The sector's contribution to employment cannot be overemphasized, since it is estimated that the artisanal 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 fish and fisheries related

activities (Mendy, 2003). By this figure, the sector employs around 7 percent of the total population of about 1.3 million people.

The internal economy of The Gambia is dependent upon fish. The livelihoods and financial strenght of fisherfolks be it in Gunjur, Tanji, Bakau, Banjul etc are derived from fish and fish related activities ranging from fishing, smoking, drying and marketing of fish, repairing of boats, selling of premix fuel to maintenance and repair of boats etc. There are lots of Senegalese fisherfolks in The Gambia. These foreign fisherfolks contribute to the financial well being of the communities they operate in.

However, fieldwork carried out on Gunjur, Sanyang and Tanji landing beaches confirms over fishing as a major problem facing these fishing communities. Over fishing is mainly on the demersal stock and the pelagics are being under-used. Another sustainability concern is raised regarding the depletion of the forest due to the techniques used in smoking fish.

The effect of globalization is widespread and discernable even in the small village of Gunjur and its inhabitants; they are linked to the global fishing practices and policies to the extent that decisions taken in Bruxelles, Rio and Tokyo could very much affect their lot, their livelihood and their future quality of life (Webber 1996).

To address the other constraints and data gaps, there is the need for the Central Statistics Department and the Department of Fisheries to design a data collection mechanism that covers the entire country and update the different surveys periodically. Moreover, arrangements should be made to collect the sale prices at landing sites to provide estimates of producer prices.

Moreover, comparing the methodology suggested by the SLFP project to compile GDP statistics with the actual collection and computations of fisheries statistics in the Gambia, one realizes that there are serious data gaps which might understate this sectors contribution to GDP. It is therefore recommended that the collection of statistics and the current methodology especially as it relates to migrating from SNA 1968 to SNA 1993 be accorded high priority as this will substantially improve the sectors contribution to GDP.

Capacity constraints has hampered the progress of this sector and consequently, future policy should consider strengthening the human and material capacities of the Fisheries Department. The establishment of a fisheries training school will go a long way in addressing these constraints.

Immediate action is also recommended for the development of the relevant fisheries infrastructure particularly the fisheries port, ice plants, cold storage facilities, patrol boat and means of fresh fish distribution and marketing to promote this sector. An inventory of the existing infrastructures, facilities and services and a survey of the different institutional arrangements and organization to include issues like structure, membership, rights, rules, regulations etc would be necessary to complement the outcome of the other surveys.

Some of the agreements entered into between The Gambia and Senegal, Japan the European Commission should be revisited, and where possible, new agreements and partnerships that will maximize the gains of The Gambia from this sector, should be sought.

Finally, the separation of functions between the Central Statistics Department, nationally tasked with the responsibility of collecting all economic and social data, to that of the fisheries Department that is currently collecting the fisheries data, is in itself a problem. The Central Statistics Department is only using secondary data. There also exist very weak linkages between the Fisheries Department and other related government institutions such as the Department of State for Finance and Economic Affairs that makes economic policy and the data that is generated by the Fisheries Department and other studies on this sector is not widely circulated. Hence, this study calls for improved coordination among the relevant institutions.

CHAPER 1

BACKGROUND

The Gambia lies on the West of Africa between 130 and 140' latitude North (Horemans et al 1996). It has a strip of land varying from 25 to 40 Km wide on either side and has about 10,500Km2 in area. Its north, east and south borders are with Senegal and on the west, the Atlantic Ocean. The population was estimated in 2003 at 1.3 million.

Socio-economic Situation

The economy of the Gambia has, until quite recently, been heavily dependent on rain-fed agriculture but following the serious drought spells of the mid 1970's and 1980's and the resulting decline in agricultural production and animal husbandry the Government of The Gambia took the decision to turn to other economic sectors for redress (Mendy et al.). It is against the backdrop of the low productivity of rain-fed agriculture and the country's endowment with abundant and diverse fish species that focus was shifted to fisheries, among others, as a sector with great potential to make substantial contribution to the socio-economic development of the Gambia.

Groundnuts contribute nearly one third of agriculture share of 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 merchandise export earnings (excluding re-exports). The bulk (about 80%) of fish and fish product exports are sent to markets in the European Union.

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

The contribution of sport-fishing to the economic and social development to the Gambia is not assessed. By all indicators, sport-fishing is an important activity in terms of the number of tourists undertaking this activity.

Marine and Inland Fisheries

The fisheries waters of The Gambia are characterized by marine waters, brackish waters and freshwater regimes corresponding to the three (3) Fishery Administrative areas namely: The Atlantic/Marine Coast Stratum, the Lower River Stratum and the Upper River Stratum. For the purpose of this study, fisheries waters shall be limited to marine and inland waters.

Marine Waters

The Gambia territorial sea extends to 12 nautical miles and an Exclusive Economic Zone (EEZ) of 200 nautical miles from the geographical baseline. The coastline, from Banjul point to Kartong, a southern border village of The Gambia with Senegal, is approximately 70Km long. The country claims a total maritime area of 4000km2 and 10,500km2 of continental shelve and EEZ respectively.

Inland Waters

The River Gambia is an estuary, taking its source from about 1125m altitude in the Fouta Djallon highlands in the Republic of Guinea (Conakry), drains through Guinea, Senegal and The Gambia into the Atlantic ocean in the west (Raymond Lae et al.) It has a catchment area of 77,054km2 (Lesack, 1986) flows 1200 km through Southern Senegal and the Gambia to the Atlantic Ocean. The lower part of the river, that is 500 km, which covers the whole of the Gambia, has virtually no gradient. Tidal effects are experienced up to Yarboutenda at the Senegal and Gambia border. However, according to Daget (1960), true brackish waters are located 'only' in the last 180 km where there are tidal flood plains colonized by mangrove swamps.

Table 1 . The length and surface area of River Gambia in three countries

Country	Length (km)	Surface area (km2)
The Gambia	460	10, 556
Guinea	205	11, 866
Senegal	485	54, 631
Guinea Bissau		16

Source: Fisheries Department

Fisheries Operations

With a continental shelf area of 4000 km2 and about 10,500 km2 of Exclusive Economic Zone (EEZ) of marine waters, the Gambia also enjoys a 10,556km2 catchment area. These vast water bodies compared to the size of the inhabitants provide huge fisheries potential to economic operators, especially the artisanal fisher folks.

Types of Fisheries

The fisheries sector of The Gambia is divided into two operational sub-sectors: Artisanal Fishery sub-sector and Industrial Fishery sub-sector. The artisanal fishery sub-sector is primarily engaged in relatively extensive low-input fishing related practices. The majority of artisanal fishers use traditional fishing crafts/canoes (40% are motorized) and employs diverse fishing gears, methods and techniques such as: entangling/surround gill nets (surface and bottom gill nets), hand and long lines, cast nets and traps. The industrial sector on the other hand uses more sophisticated techniques and tools. Trawlers are used and most of these trawlers are foreign owned. Another fishing activity that is gaining many grounds is sport-fishing undertaken by tourists for leisure. Several tourists undertake this activity throughout the tourism season in the

Gambia.

Artisanal Fishery

The artisanal fishery sub-sector is highly diverse incorporating marine, estuarine and freshwater fishing operations. The majority of communities located along the Atlantic coastline and along the River Gambia and tributaries engage in some form of artisanal fishing activities ranging from subsistence activities to activities that are capable of generating significant economic returns such as shrimping and catching of high value demersal fish species such as sole-fish and cuttlefish.

Although farming was (and still is) the predominant occupation of most Gambians, rural communities were fishing on subsistence basis using simple fishing tools such as traps, cast nets, etc. A study conducted by Lesack and Drammeh (1980) estimated that a total of 83 fish landing sites existed throughout the country with 11 in the Atlantic Coast Stratum (ACS). A total number of 712 canoes were also recorded with 290 in the ACS. About 89% of the canoes operating in the ACS were motorized. The results of the 1997 Frame Survey of artisanal fishermen (operating from 135 known artisanal fish landing sites in the country) revealed that 62.9 percent of all artisanal fishermen are Gambian nationals. This figure, though quite impressive, does not reveal the fact that the majority of artisanal fishermen operating along the more productive Atlantic Coast (more than 65 percent) are still foreigners. They are required by Law to land all their catches in The Gambia.

Table 2: Number of artisanal 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 of no less than 35 % and 50% respectively, Table 2.

Industrial fishery

Industrial fishing is relatively limited in the Gambia. Fishing is concentrated in the sea off the coast. There are over 20 locally registered companies engaged in industrial fisheries but only 8 companies have made investments in on-shore processing factories. So far, only 6 factories have

been certified to export their products into the European Union (EU) countries. The fishing companies are granted approval by Government to license industrial fishing vessels (trawlers) to fish in Gambian waters but because of the lack of a fisheries port in the Gambia, the majority of licensed fishing vessels land their catches in foreign ports where the fish is processed, packaged and labeled as products originating from those foreign ports.

Licensing records show that over 90% of industrial fishing vessels legally operating in the marine waters of the Gambia are foreign. Foreign operators usually make contractual arrangements with Gambian companies in order to satisfy licensing conditions or operate through fishing access agreements with the Gambia such as the Senegalo-Gambian Reciprocal Maritime Fishing Agreement, the expired European Union / Gambia Fishing Agreement, the Japanese Tuna Fishing Agreement, etc.

Fisheries Resources

Marine Fisheries Potential

Marine waters within the jurisdiction of the Gambia are endowed with abundant fisheries resources both in terms of diversity and quantity. The country is located within the Eastern Central Atlantic Ocean, an area classified as one of the richest fishing zones of the world and in a region (Northwest Africa) with a very active upwelling system. The upwelling phenomenon acts as a transport of nutrients from the bottom to the top while mixing them along the water column thus enhancing productivity. The productivity of these waters is further enhanced by an influx of nutrients from the River Gambia (an estuary) that attracts certain marine species for feeding and spawning purposes.

Table 3. Biomass estimate of fisheries resources

	Biomass MT	Biomass MT
Year	**Demersal**	**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
2004Nov		212,700

There are over 500 marine fish species in Gambian waters. Fish species are usually classed as demersal and pelagics. The demersal fish group has a wide and diverse range of species and this include, cephalopods (cuttlefish and octopus), shrimps and lobsters, groupers, sea breams. Grunts, croakers are demersal fish species. The small pelagics group consists of the two sardinellas (*Saridnella aurita* and *Sardinella maderensis)*, horse mackerels (*Trachurus trecae*, *Trachurus trachurus* and *Caranx rhoncus*) and mackerel (*Scomber japonicas*). Biomass estimate of the demersal fish resources in 1986, as reflected in Table 3, was 43,645 tonnes. Similarly, in 1992, biomas estimate of the pelagic species stood at 160,000 tonnes. This survey was the most comprehensive survey of demersal fish potential of marine waters of the Gambia. Unlike the demersal fish resources, the Gambia together with three coastal countries, namely; Morocco, Mauritania and Senegal have since 1995 been assisted with annual hydro-acoustic survey of small pelagic fish stocks under the project, GCP/INT/730/NOR. This project was jointly implemented by the United Nations Food and Agriculture Organization (FAO) and the Norwegian Institute of Marine Research (IMR). Biomass estimates of these surveys are shown in table 3.

Inland Fisheries Potential

The fish catch potential for the inland fishery is not known because no research work to estimate fish stock biomass has been undertaken in the River Gambia.The recently (2004) concluded study of fish populations in the Gambia River by the French Institute for Research and Development (IRD) in collaboration with the Fisheries Department has revealed that the brackish and estuarine portions of the river are very rich in terms of species diversity and abundance. In fact, the study had identified about 70 fish species within the river system and several of them, especially those belonging to Carangidae, Drepaneidae, Clupidae, Haemulidae, Polynemidae, Cichlidae, Scianidae, Cynoglossidae, etc, are of commercial significance. It is strongly believed that the fish resources of the River Gambia are still under exploited and improvements in fishing technology and techniques will allow for increased fish landings in the inland artisanal fishery.

Aquaculture Potential

The flood plains of the middle portion of the river offer good potential for the development of aquaculture. Unfortunately, aquaculture in the Gambia is very limited. Only one company is involved in large scale shrimp farming.

Constraints Facing the Fisheries Sector

Despite the enormous potentials, the sector is faced with a host of physical, technical, economic, institutional and social constraints which retards the development of this sector:

The physical constraints include the absence of a Fisheries Port, lack of appropriate industrial fish factories, lack of appropriate artisanal landing infrastructure, inadequate fish handling and storage facilities (including ice and cold storage), poor fish distribution and marketing system, Small number of premixed fuel stations within the country and the predominance of this important sector by foreign fisher folks.

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 inadequate number of Tradesmen (mechanics) as well as inadequate repair and maintenance facilities. Lack of proper knowledge of fish handling and processing has caused a high degree of port production and port harvest losses. The lack of precise knowledge on the biology, population etc of fish species of economic importance and the lack of a fisheries laboratory are all constraints in the fisheries sector.

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

The institutional constraints include manpower capacity at the Fisheries Department. Low level of research activity, conflicts between artisanal and industrial fisheries as well as conflicts among artisanal fishermen. There is also lack of an effective and efficient machinery for the coordination of activities of all agencies (Governmental and non-Governmental) involved in the fisheries sector. There is the lack of an appropriate monitoring, control and surveillance system coupled with infrequent surveys to establish output and other related economic activities by the sector.

The social constraints include the marginalization of women artisanal fisher folks; the low level of literacy among artisanal fisher folks and the belief/view point that fishing is a low social status profession and, fisher folks occupy the lowest social status in their communities.

Fisheries Resources Exploitation Trends

Fisheries Production

Fisheries production is mainly from the fishery of the Atlantic (marine) Coast Startum (ACS) and Lower River Division (LRD) and to a lesser extent the fresh water of the river Gambia. Fisheries statistical data collection is rather limited to the more productive ACS. Although catch and effort data collection is limited to the ACS, fishing in other areas are significant. In fact, most artisanal fishers operate in the estuarine areas rather than in offshore areas. Landings of

both the industrial and artisanal fisheries comprise fish species in the four species groups, namely; the demersal fish, small pelagic fish, shrimps and the cephalopods. Sport-fishing has recently become a very important activity for tourists. Organized fishing trips are regularly undertaken by tourists to fishing grounds to fish for leisure. Catches from this activity are not recorded.

Industrial Fishery Production

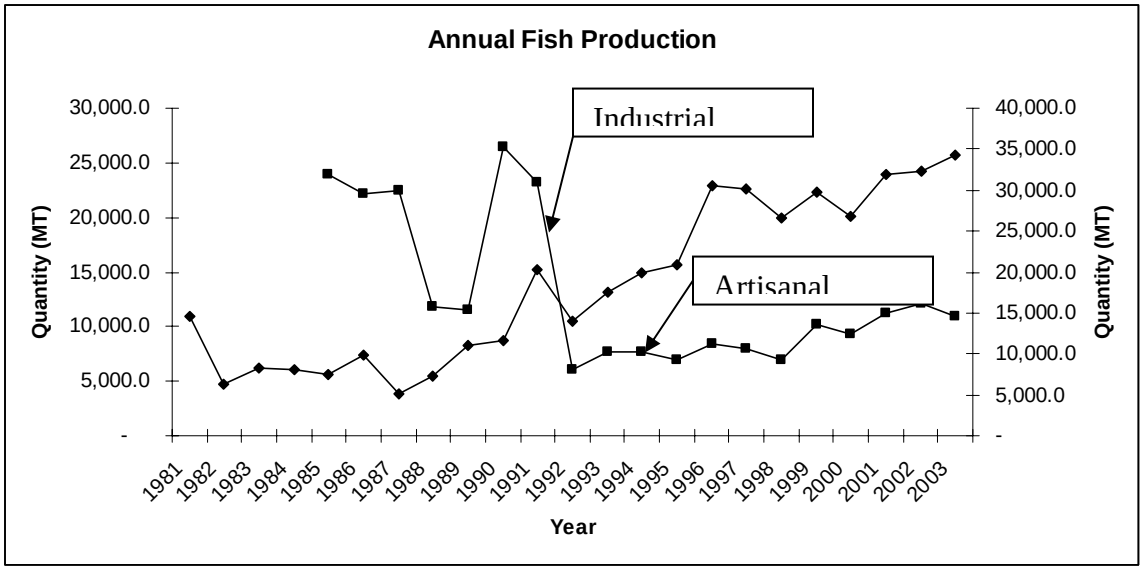
There had been fluctuating trends in fisheries production over the years. Industrial landings had been fluctuating sharply between 1985 and 1993 when it gradually stabilised at around 8,000 metric tonnes for five years. A gradual upward trend is now being observed since 1999 to date. The sharp decline observed before 1999 is attributed to the cessation of operations by the Ghanaian-Gambian joint venture fishing company (Seagull Cold store Ltd) which was targeting small pelagic fish in late 1980s to early 1990s. The fact that licensed industrial fishing vessels land their catches in foreign ports underestimates their contribution in any form to the country.

About 2000 people are presently employed in the industrial sub-sector the majority of which are factory workers (mainly women). The total catch by industrial fishing vessels in 2003 is estimated at 11,000 tons (from catch data provided by observers posted onboard licensed fishing vessels), figure 4 gives a time series catch data of this sub-sector.

Artisanal Fishery Production

Although the scale of operation by the artisanal fisheries is generally considered small, the sub-sector continues to dominate the fisheries sector of the Gambia in terms of volume of landings, provision of food fish and raw fish material supplies for fish processing plants. Figure 1 below shows annual landings by this sub-sector.

Figure 1: Graphical Presentation of Annual Fish Production by Sub-Sector



Source: Fisheries Department

Although there are fluctuations in artisanal fish landings (total catches), it can be observed from figure 2 above that artisanal fish production has been on a steady increase from just over 5000 tonnes in 1987, 30000 in 1997 and to 34,000 in 2003. This increase has been due mainly to investment by the private sector and Government through provision of infrastructure and expanded credit facilities. However, it is imperative to note that an average of about 70% of annual total catch is Bonga (*Ethmalosa fimbriata*) an estuarine species.

Fish and Fishery Product Trade and Distribution

Fish are distributed either as fresh fish, smoked or dried salted. Shelf-life of fish are prolonged with the use of different preservation techniques. Post-processing handling such as packaging, storage and marketing can have significant impact on the shelf life of the product.

Fish species involved in the export trade varies, and can be classified into different categories. The fresh and frozen products mainly serve the European market; cured fish products (smoked & dried) are marketed mainly within the sub-regional markets, whilst the dried shark fins and fish maws are exported to the Asian markets. Fresh and hot-smoked fish products tend to serve mainly the urban markets and on a small-scale operation to the European markets, whilst smoked-dry fish serves the rural and sub-regional export markets. The local trading, fresh fish is mainly sold to private traders (banabanas) who in return sell the fish to consumers in the markets.

Trade and Distribution of Fresh Fish

The high value fish together with small pelagic fish (shad/bonga) are transported in small quantities on bicycles or mobilettes from the landing sites to the nearby villages. The fish are carried in baskets with ice or are sometimes kept damp using materials such as wet seaweeds or wet jute bags to protect fish from the sun. Fresh fish with ice are distributed to inland or neighbouring markets within the urban areas using insulated trucks. Large volumes of fresh fish are also distributed by use of land rovers with some ice. These fish are distributed to inland and neighbouring markets. The long distance that the fish has to be transported inland and with the small quantity of ice used, gives only marginal protection to the fish, thereby reducing the freshness and quality of the fish. Few refrigerated trucks are now being used to transport fresh fish for marketing in rural areas.

The exportation of fresh fish is done mainly by those fish processing establishments that are certified to export. At present, the Fisheries Department has certified seven fish processing establishments to export fish to EU markets through a transition measure made possible by the EC decision No.93/185/EEC of 1996, and also in conformity with the requirements of schedule XV of the Fisheries Regulations 1995 (i.e. good handling and storage practices in these establishments are of high and uniform standard consistent with recognized good manufacturing practices). The regulations also require application of the Hazard Analysis Critical Control Point (HACCP) system for fish processing establishments.

Trade and Distribution of Processed Fish

Smoked and dried fish are transported in open trucks to markets or to the port for export. Dried fish are packed in locally made baskets, wooden boxes or jute bags. Packaging is done usually at a time when fish is to be transported. Smoked fish are packed in wooden boxes or locally weaved baskets. Rough roads and handling of brittle smoked-dried fish often lead to fragmentation and thus economic losses. However, smoked fish products for export are frozen, packed in polystyrene and fibre board cartons.

Export of processed fish (dried and smoked) by artisanal fish operators are allowed on payment of duty to the Customs and Excise Department. Fish export permit and health certificates are required for exportation of traditionally processed fish products. Availability of authentic letters of credit is also a condition for exemption from duty on export of fish and fishery products.

Dried fish and smoked-dry bonga and dried sharks are the main types of processed fish that are exported to neighbouring countries. The smoked-dry fish and dried fish are mainly exported to Guinea and fresh/frozen fish to Senegal whilst the dried sharks are exclusively exported to Ghana. Transportation of products to Guinea is by road or sea and to Ghana is by sea. Smoked-dried bonga are also exported by sea to neighbouring countries such as Nigeria, Cote d' Ivoire and Cameroon.

Factories which have been certified to export fish process fish fillet, cuttlefish tubes and shrimps (head-on/peeled/unpeeled with/without head) according to internationally acceptable standards for export mainly to European countries and USA recently.

Markets Targeted by Artisanal Fisheries Sub-sector

The artisanal fisheries target 5 main markets namely: a) local consumers who are made up of the entire Gambian population and expatriates and whose demand is mainly for pelagic species and some high value demersal species; b) catering industry (Hotels and Restaurants) whose preference is on high value demersal and crustacean species; c) industrial fishing companies which adds value to the fish through processing and the preference for this most important and lucrative market for the artisanal fishermen includes crustacean, cephalopods species and the high value demersal species including sole fish; d) sub-regional countries such as Guinea, Ghana, Mali and Nigeria which import smoked and sun-dried fish products (bonga, catfish, shark meat and dried skates and rays); the Asian and European markets with the former market demanding mainly on sun-dried shark fins, frozen sea snail and dried fish maws.

Resources Management

The Fisheries Department is mandated to plan, manage and develop the Fisheries Sector throughout the length and breath of The Gambia with the help of local, national and international institutions. This involves developing fisheries policy and legislations; provide advice, assistance and service to fisher folks, business and to national and international institutions. The Fisheries

Department is also tasked with the responsibility of protecting and developing the local fisheries industries; providing credit, infrastructure and facilities in particular to the artisanal fishery sub-sector; cater for technology development and technology transfer; provide development oriented training; promote joint venture agreements/arrangements; monitoring, control and surveillance of all fisheries related activities on land and within the fisheries waters of The Gambia with the ultimate objective of achieving national development and equity through increased food security, increased employment opportunities and enhanced revenue and foreign exchange earnings by way of rational and sustainable exploitation and utilization of fisheries and related resources, having due regard for the conservation of the biological diversity of species and preservation of the environment. The department is guided by three instruments, Fisheries Act 1991, Fisheries Regulations of 1995 and a 10 year Fisheries Strategic Plan for the period 1994/95 to 2004/2005.

A Fisheries Monitoring, Control and Surveillance (MCS) Unit is charged with the policing of fisheries waters of the Gambia assisted by the Gambia Navy (GN). The GN provides sea patrols using a navy chase boat. It must be admitted that the said boat is deficient in many aspects to effectively carryout fisheries surveillance. The Unit is empowered by the Fisheries Act. Several sections of the Fisheries Act (IV, V, VIII and IX) empowered public officers to enforce management measures aimed at conserving the resources.

A Sub-regional Aerial Surveillance project (SOCU) funded by the Government of the Grand Duchy of Luxembourg with its Headquarters in the Gambia provide aerial surveillance supports to the six member countries of the Sub-Regional Fisheries Commission (SRFC). It should be noted that fisheries resources within this region are extensively shared. It is in recognition of this that the six countries, namely; The Gambia, Senegal, Mauritania, Guinea (Bissau), Guinea and Cape Verde decided to set up a regional body whose objectives are to reinforce cooperation and coordination of member states.

The current Observer Programme is designed to complement surveillance activities of the MCS Unit. It is a Fisheries Department policy that any vessel licensed to operate in the Gambian waters should take onboard an observer whose task among others is to monitor the activities of the vessel to ensure compliance with the Fisheries Act and regulations. For the preservation and conservation of the country's fisheries resources, Minimum Mesh Sizes for Fishing Nets (Stretched Mesh) of the industrial fishing sub-sector were regulated.

Delineation of Fishing Grounds

To reduce conflict between the industrial and artisanal fishing fleets and for conservation purposes, fisheries waters of the Gambia have been delineated into 7 and 12 nautical miles fishing limits as shown in figure 2. Only artisanal fishermen fish within 7 nautical mile limit. This is basically aimed at protecting the nursery grounds for developing juveniles of some important fish species which breed near the shore. Vessels of up to 250 GRT capacities are allowed to fish within 7 and 12 nautical mile limit while from 12 miles extending to the EEZ is opened to all licensed vessels. Zoning of fishing grounds also ensures that the fishing effort of the trawlers is spread. Vessels targeting tuna as the main species are forbidden to fish within the 12 nautical miles limit. These

measures/restrictions were further enforced by the 1991 Fisheries Act and the Fisheries Regulations of 1995.

Description of Fishing Operations

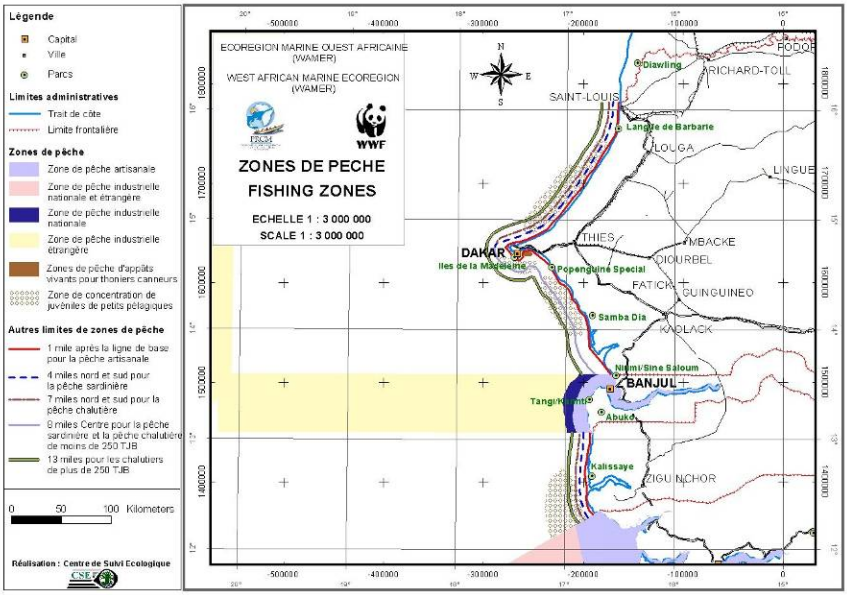


Figure 2. Shows delineated fishing zones

Fisheries Development Projects and Programmes.

The Government of The Gambia has made noteworthy achievements in efforts to develop the artisanal fisheries sector with the support of development partners such as the FAO, the Government of Japan, the Government of Italy, the Government of Taiwan, and DFID of the United Kingdom, the European Union and NORAD. These projects are contributing to the attainment of the national development aspirations and goals as enshrined in Vision 2020. Not much success has been registered in efforts to develop the industrial fisheries sector but it is hoped that the Project jointly financed by the African Development Bank, the Arab Bank for Economic Development and Gambia Government will help to bring about the beginning of the desired development of the industrial sub-sector.

Within the planned period, the Government of The Gambia has implemented and is still implementing projects and programmes that are making significant contributions towards the realization of the sectoral development objectives. The artisanal fisheries development projects in Bakau, Tanji and Gunjur have transformed small scale artisanal fishing and related activities into activities that are generating significant economic exchanges and are bringing about social and economic development in fishing communities. The Sustainable Fisheries Livelihood Programme, the Aerial Surveillance Project, the Nansen Programme and the Fisheries Information and Analysis Project are all contributing to the development of the fisheries sector, The ADB/BADEA/Gambia Government funded project which was recently launched has several important components one of which is the establishment of a fisheries port which is essential to

the development of industrial fisheries. There are three major projects currently being implemented in the fisheries sector and they are:

Sustainable Fisheries Livelihoods Programme (SFLP)

The FAO/DFID Sustainable Fisheries Livelihoods Programme (SFLP) in West Africa is funded by the Department for International Development of the Government of Great Britain and Northern Ireland to the tune of US$43million. It was initially slated for five years but later extended to seven years. It represents a partnership between the FAO, the Department for International Development of the Government of Great Britain and Northern Ireland and the 25 beneficiary countries including The Gambia. The programme is implemented by FAO and the beneficiary countries. Basically, the programme is aimed at reducing poverty in the artisanal fisheries communities in West Africa by bringing improvements in the livelihoods of the communities through development of the social and human capital assets in the fisheries-dependent-communities, participatory management of natural capital assets and the development of appropriate fisheries policy and the institutional environments.

The SFLP promotes improvement of livelihoods of artisanal fisheries communities through local and regional initiatives in the form of: community projects; institutional support projects; communication and pilot projects at local, sub-regional and regional levels and supporting training and studies. The Gambia is currently implementing a pilot project on 'improved Livelihoods in Post Harvest Fisheries' with US$500,000 as its share of the US$3million slated for the pilot project being implemented in four countries, namely; The Gambia, Chad, Cameroon and Senegal. The pilot projects represent regional cooperation projects and evolved through participatory processes. The current pilot project is for three years. Its overall objective is to reduce poverty amongst post-harvest stakeholders by developing policies and institutions for improved sustainable livelihoods and food security.

The Gambia Artisanal Fisheries Development Project (GAFDP)

The artisanal fisheries has continued to be provided with infrastructural facilities, fishing related equipment and means for fish distribution and marketing within the country. The recent intervention to the sub-sector is a US$14 Million Gambia Artisanal Fisheries Development Project (GAFDP) funded by The Gambia Government, the African Development Bank (ADB) and the Arab Bank for Economic Development (BADEA). The project will establish a fisheries port in Banjul and a Central Fish Market in Serekunda. It will also rehabilitate and improve three inland fishing centres at Albreda, Bintang and Tendaba provide ice-plants and revamp the access roads to these centres. In addition, the project will improve monitoring, control and surveillance of Gambia's territorial waters and it will strengthen the capacity of the Fisheries Department through local training and also establish a credit scheme with nation-wide coverage for artisanal operators, especially women.

As mentioned earlier, lack of a fisheries port is a major constraint to the development of the industrial fishing sub-sector as most fishing vessels are compelled to land their catches elsewhere in the sub-region or abroad. With the availability of a fisheries port this constraint will be

removed and thus enable the licensed industrial fishing vessels to comply with the requirement to land catches in The Gambia. The potential of fisheries to actually contribute to socio-economic development, by increasing employment, increasing availability of fish for domestic consumption and export, reducing malnutrition and poverty will then be realized.

Production of wholesome food is a pre-requisite to gaining an upper edge in a highly competitive market environment. For this reason, the services of a Food Hygiene Specialist was enlisted to work at the Quality Control Laboratory at the Fisheries Department within the framework of implementation of the Project for the Provision of Technical Assistance and Equipping of the Food Hygiene and Quality Control Laboratory funded by BADEA to the tune of US$350,000. It is pertinent to reiterate that operation of this Quality Control Laboratory will enhance the competitiveness of our fishery products in the international market and thereby enhance foreign exchange generation through fish exports.

Japan International Cooperation Agency (JICA)

As alluded to in section 3 above, the Government of Japan through its international cooperation agency JICA has been assisting the Gambia with development projects which included construction of community fisheries centers, ice making facilities and cold storage and fibre glass boats for training purposes in key fishing sites. It has also been providing technical assistance to the Gambia through a grant-in-aid programme. Several Gambian youths have benefited from the training component of the Aid package.

Policy Objectives for the Development of the Fisheries Sector.

It is imperative to conclude by stating the broad policy objectives for the planned development of the fisheries sector and to provide a 'road map' for their realization. These objectives are: to generate employment opportunities for Gambian nationals, to effect a rational and long term utilization of the fisheries resources, to improve the nutritional status of the population and to generate revenue and foreign exchange earnings for the country.

The Government intends to pursue these objectives on a rationally planned basis through strategies of research and development, extension of appropriate skills and techniques, provision of credit and necessary infrastructure and protection and regulation of exploitation of the fisheries resources.

Objective of the study

The objective of this study is to improve the knowledge of the importance of fisheries sector in national development through the assessment of the economic and social contribution of fisheries to sustainable livelihoods and poverty reduction in the Pilot Project, covering Cameroon, Chad, The Gambia and Senegal. It will also increase the skills and knowledge of the fisheries departments in generating and analyzing information on the role of artisanal fisheries in national development and poverty reduction.

Desired Outcomes

The outputs of the case study in the Pilot Project will inform the on-going SFLP process of developing a guide/methodology for assessing the role of fisheries in sustainable livelihoods and poverty reduction. It is also expected that the link between the Fisheries Department and the National Accounts' Unit of the Central Statistics Department will be strengthened, and fisheries sector will be better reflected in the national accounts.

The study team will work very closely with the RSU Policy Advisory Officer and the Pilot Project Coordinator of the Sustainable Livelihoods Programme Pilot Project 1 (SFLP). The study is expected to pursue the following Terms of Reference:

1) To improve the guideline developed by the SFPL by proposing a methodology/framework for assessing the contribution of artisanal fisheries to the national economy on the basis of a literature review of relevant documents/reports, including those provided by the SFLP and the Unit in charge of preparing the national accounts,
2) To identify the sources of and collect the data necessary for applying the methodology/framework developed above,
3) Apply the proposed methodology/framework to the data and making any necessary adjustments
4) To prepare a report on the contribution of artisanal fisheries to sustainable livelihoods and poverty reduction, including recommendations about the dissemination and use of the methodology/framework by the NCU,
5) To present the final report to a selected target group of national policy makers. This can be done through meeting/discussion, briefing note) and public (radio/TV discussion).

Study Team

The study team included a fisheries specialist from the Fisheries Department in the person of ASberr Mendy, a National Accounts statistician in the name of Malang Keita from the Central Statistics Department and a National Accounts Economist – Mod A. K. Secka- from the Department of State for Finance and Economic Affairs (DOSFEA).

CHAPTER 2

METHODOLOGY

The main methodology used in this study is the 'Preparation of Methodological Guidelines for the assessment of the role of Small-Scale Fisheries in The Economies of West African States – African Countries' provided by the Sustainable Fisheries Livelihoods Programme (SFLP) GCP/INT/735/UK.

In these guidelines, there are basic indicators for appreciating the role of Small-Scale Fisheries, which are classified into four broad categories namely: food security, employments, National Wealth and other contributions.

The main considerations for food security are the levels of domestic production, exports, apparent availability and annual consumption per capita. In assessing employment, one is interested in the number of professional fishers, number of occasional fishers and other jobs either directly or indirectly linked to the fishing sector. In arriving at national wealth created by this sector, it becomes necessary to measure economic activities, added value to production, added value to valuation, investments in fisheries and the trade of the balance of fisheries products. Finally, other contributions of the fisheries sector such as contribution to state and local communities' budgets and contribution of the sector to local development and poverty reduction are incorporated.

The guidelines have also identified the need to construct basic indicators, which include the necessary data for the production of basic indicators, sources for data collection and calculation methods to obtain these indicators.

As a suggested improvement to the SFLP guidelines, it would have been interesting to assess the forward and backward linkages of this sector. Due to lack of sectoral data for
The Gambia, especially as it relates to input-output data, this is not possible.

Livelihood Approaches

Webber (1999) conducted a study for the village of Gunjur to determine the impact of the artisanal fisheries sub-sector to the lives of the people in this typical Gambian fishing community. This case study is used as the basis to assess the sustainable livelihood of the artisanal fisheries sub-sector for The Gambia. Another study that forms the basis of this sustainable livelihood analysis is the IDAF report entitled: "Sector Review of the Artisanal Marine Fisheries in The Gambia" of 1996.

In addition to the two approaches discussed above, the methodology of this study also includes three main issues: data requirements, data collection methods and the challenges in the data collection.

Data Collection

Due to the short duration of this study (25 working days) and mainly lack of funding to undertake a nation wide survey, the data collection process was restricted to the use of existing secondary data for this sub-sector. Thus, data was obtained mainly from the database of the Department of Fisheries, although other sources such as the Central Statistics Department, the budget document etc, were also used. However, the study was also not intended to do a survey of any nature.

Statistical Institutional Function

In The Gambia the two main statistical offices associated with fisheries statistics are the Central Statistics Department (CSD) and the Department of Fisheries. The role of the former embraces collection, analysis and reporting of data pertaining to all economic and social activities. This scope has proven to be too wide compared to the available resource allocation. The limited financial resource allocation and the scanty number of staff at the CSD necessitated relinquishing the primary fisheries data collection to the Department of Fisheries among other things. This department's mission was not statistical but had to undertake fisheries data management necessary for administration. Inadequacies of trained staff in Fisheries Department and the CSD also limited the statistical data on fisheries activities.

The Statistical section in the Fisheries Department, however, estimates the total catch of fish by species annually. The total catch is further classified into Industrial and Artisanal Fishing and the data made available to the Central Statistics Department. These figures are based on enquiries made by the Department of Fisheries at landing sites, at infrequent internals in the case of artisanal catches by fishermen. The operation of trawlers submitted to Fisheries Department on the Quantity of fish caught each time, form the basis of the estimates of production of industrial fish.

The Fisheries Department in the past conducted "Frame Surveys" periodically to provide data on costs of inputs including frames, fuel, costs of nets, repairs and maintenance of boats and consumption of fixed capital. The ratios obtained from those surveys continue to be the basis for determining the present input coefficients. However, these ratios are no longer realistic due to the fact that it is long time (1977) since a frame survey was conducted and for the ratios to be reflective requires periodic updating. The fact that these ratios are not regularly updated can be a major source of under estimating GDP and the role of the fisheries sector to economic development.

Data Collection Techniques Used By Fisheries Department

As has been highlighted in the preceding chapter, there are essentially two sub-sectors in the fisheries sector. These are the artisanal and the industrial sub-sectors, which attract different ways of collecting data as discussed below, due to the difference in the way they operate.

Artisanal Fishery Data Collection System

Little data on the fisheries of the Gambia existed for the period 1950 to late 1970s. According to Lesack and Drammeh, manuscripts have been written, but mostly by outside observers (Campleman 1977) who come on short visits. Although farming was and is the predominant occupation of the Gambians, rural communities were fishing on subsistence basis using simple fish capturing tools such as traps, cast nets, etc. Fishery statistical system was not in place before 1976 to estimate artisanal fishery production and there was no adequate frame data (effort) collected and catalogued. The study conducted by Lesack and Drammeh in 1980 estimated that a total of 83 fish landing sites existed throughout the country with 11 in the Atlantic Coast Stratum (ACS). A total number of 712 canoes were also recorded with 290 in the ACS. About 89% of the canoes operating in the ACS were motorized. The results of the 1994 Frame Survey of artisanal fishermen (operating from 135 known artisanal fish landing sites in the country) revealed that 62.9 percent of all artisanal fishermen are Gambian nationals. This figure, though quite impressive, does not reveal the fact that the majority of artisanal fishermen operating along the more productive Atlantic Coast (more than 65 percent) are still foreigners although they are required by Law to land all their catches in The Gambia.

The latest frame survey conducted in 1997 indicated that there were a total of 135 fish landing sites with 1785 canoes operating countrywide. Of the 1785 canoes, 494 canoes were then found in the ACS with 87% motorization. Although no frame survey has since been conducted, data collected by field staff stationed in the coastal fishing villages (the Atlantic Coast Stratum) in 2000 has shown a 15% increase over the last count.

As records of catch levels from the 1950s up to the late ‘70s could not be traced it was difficult to show the evolution of catch from the mid century. From enquiries conducted with the Director and some senior staff, staff of the Fisheries Department was collecting fisheries data during the 70s. Another fact emanated from enquiry was that proper records management was a constraint thus resulting in the lost of many documents. It is interesting to note that the apparent trend is of an upward one with the Ethmalosa fimbriata (bonga) constituting the bulk of the catch.

The system of collecting data in the artisanal fisheries has evolved from many stages. These stages include frame surveys; catch assessment surveys, cost and earnings surveys, socio-economic surveys and other surveys. The frame surveys take inventory of all landing sites, total number of fishermen, canoes, gear and other key variables of the fishing economic unit. The Catch Assessment Survey collects catch and statistics from a sample of fishing units per gear in a sample of fish landing sites for a sample of fishing days monthly. The Costs and Earnings Surveys, as was conducted in Bakau and Tanji in 1995, are used to test the economic and financial profitability of the fishing units. A socio-economic survey was last done in 1991 and it becomes worthwhile to update the socio-economic information. Other surveys comprising, sea accident surveys as was done in 1994, marketing study etc. are also necessary. However, while all these surveys were done and certified appropriate in the mid 90s, due to lack of funding and man power, follow-up surveys were not done, as was recommended, to reflect the current realities on the fishing sector and this by

itself can be a major source of underestimating the contribution of the fisheries sector to overall economic activities.

The system in place for collecting fisheries information is a sample survey system where enumerators are sent out to pre-select fishing stations/sites to conduct random sampling of canoes that went fishing on the sampling day. Due to the nature of the artisanal fishery (low level of investments) its operators are found in many and often isolated landing sites throughout the country. With the dispersed and sometimes inaccessibility of landing sites in mind, a statistical system was designed and put in place in 1976. The statistical system is called Catch Assessment Survey (CAS). Noteworthy is that prior to the setting up of the CAS; people visiting outside Banjul only made reports of fish landings. These reports were only meant to satisfy the curiosity of a few but not for management purposes.

With the mandate to plan, manage and develop the fisheries sector and the introduction of the Data Collection System, Fisheries Department or the Fisheries Division started sending staff out to the field/fishing sites to monitor the activities of fishers. Among these activities are CAS and Frame Survey (census of FEU, Canoes, Gear type, etc.). Elsewhere in reports of the FIAS project are descriptions of the methodologies but briefly, catches of sample canoes, usually six of each gear type are weighed noting the total number of canoes that went fishing on the sample day. The sample days are six, three consecutive days in the first and second half of the month (systematic sampling). Frame surveys are sort of census where Fisheries Economic Units (FEUs), canoe type, gear type etc. are enumerated in all known landing sites in the country.

Constraints and Reliability of Data Collection.

Despite the fact that a good statistical system was in place, countrywide coverage was not feasible. This necessitated the sample survey approach rather than total or partial sampling. The landing sites covered are selected on the basis of how representative they are in terms of number of canoes, etc. At present, no CAS is conducted inland (i.e. Lower and Upper River Strata) due to financial and manpower and logistical constraints. The Atlantic (Marine) Coast Stratum (ACS) has the most important fishing landing sites in terms of the volume of fish and fisheries related activities carried out every day and the only stratum with full sampling survey plan. Frame survey, which was supposed to be conducted every other year, has not been done since 1997 due to financial and logistics constraints. The constraints that are worth mentioning apart from the statistical coverage are processing material/equipment such as computers and calculator. The lack of trained personnel is a major problem when it comes to analytical and interpretation of results.

The total catch per gear type obtained by using all the necessary factors should be adequate and representative of the actual catch. Certainly, there are instances where staff under or over estimated catches and sometimes misidentify fish species. Regular spot checks by a senior staff have always corrected such errors.

Industrial Fisheries Data Collection Systems

The industrial fishery is a high capital investment and concentrated in Banjul. It requires a different statistical system. Prior to instituting the vessel observer programme, catch data from industrial fishing vessels were reported by vessel owners or their representatives. With the institution of the vessel observer programme in 1991 all industrial fishing vessels fishing in Gambian waters are obliged to take onboard Fisheries Observers. The responsibilities of the Observers among others, is to collect catch and effort data together with positions of fishing operations. All data collected with regards to the above are reported by radio to the MCS Unit of the Fisheries Department in Banjul and records of daily catches submitted at the end of the licensing period.

Radio reports only carry summaries of catches in predefined groups, eg, crustaceans, demersals, octopus, cuttlefish, etc. A detail break down of catch by species by day follows at the end of each licensing period. Under the EU/Gambia Fishing Agreement and the Gambia/Japan Fishing Agreement on Tuna, the vessels authorized to fish did not take Observers onboard but were required to forward statistical returns to the Fisheries Department. The EU/Gambia Agreement expired in June 1996 and is yet to be renewed. The Tuna Fishing Agreement with Japan is continuing.

Industrial Fishery Data Processing Technique

Particulars (GRT, HP, etc.) of vessels licensed to fish in waters of the Gambia are kept at the Fisheries Department. From the observer reports, effort (vessel-days, number of hours, etc.) is calculated. Catch estimates are calculated from records of weight by species by vessel reported by observers. To account for catches of those vessels without observers, it is assumed that vessels with the same GRTs will perform similarly (there will be no significant variation in catches).

Constraint and Solution

The Vessel Observer programme could be an effective tool for monitoring the activities of the industrial fishing fleet licensed to fish in the waters of The Gambia, if, appropriate arrangements for the remuneration of the Observers are made. As at now, Observers are paid by vessel owners hence room for switch of allegiance to vessel owners. To avoid this problem, Observers are rotated every three months. The immediate option that comes in mind is the creation of an observer fund where monies for the remuneration of Fisheries Observers are lodged.

b) Estimation of the contribution of the fisheries sector to the national economy.

An extensive literature review of the existing studies of the fisheries sector has been conducted and the interesting case study of Gunjur and other findings are herein incorporated to enrich this study. This, in addition to the analysis of the secondary data collected, enabled the study to assess the contribution of this sector to the national economy.

Compilation of GDP Statistics from Fish Production and Processing in The Gambia

Introduction

The methodology followed for estimation of domestic product at current and constant prices are in conformity with SNA 1968. The production approach is used for most industries, except Public Administration. Due to the level of literacy of most respondents, their level of statistical awareness and attitude, data is collected by trained enumerators who carry the questionnaires to the respondents.

Derivation of GDP from fisheries in The Gambia shares similar setbacks as in many other developing countries in Africa, Latin America and Asia. The constraints are multi-dimensional, ranging from limitation of human resource capacities, material resources and awareness. Allocations of resources to Statistical organizations are hardly of development priorities in developing countries. As such, they remain under funded and could hardly carryout even their core functions.

Statistical Institutional Functions

In The Gambia the two main statistical offices associated with fisheries statistics are the Central Statistics Department (CSD) and the Department of Fisheries. The role of the former embraces collection, analysis and reporting of data pertaining to all economic and social activities. This scope has proven to be too wide compared to the available resource allocation. The limited financial resource allocation and the scanty number of staff at the CSD necessitated relinquishing the primary fisheries data collection to the Department of Fisheries among other things. This department's mission was not data collection but had to undertake fisheries data management necessary for administration. Inadequacies of trained staff in Fisheries Department and the CSD also limited the statistical data on fisheries activities.

The Statistical section in the Fisheries Department, however, estimates the total catch of fish each year classified by species. The total catch is further classified into Industrial and Artisanal Fishing and the data made available to the Central Statistics Department. These figures are based on enquiries made by the Department of Fisheries at landing sites, at infrequent internals in the case of artisanal catches by fishermen. The operation of trawlers submitted to Fisheries Department on the Quantity of fish caught each time, form the basis of the estimates of production of industrial fish.

Methodology

The Fisheries Department in the past conducted "Frame Surveys" periodically to provide data on costs of inputs including frames, fuel, costs of nets, repairs and maintenance of boats and consumption of fixed capital. The ratios obtained from those surveys continue to be the basis for determining the present input coefficients.

The coverage of 'fishing' sector comprises (i) commercial fishing in ocean coastal, offshore and estuary waters and (ii) commercial catching, taking and gathering of fish and uncultivated plant life in inland waters. This consists of catching or taking fish, crustacean, mollusks, oysters, crabs, shellfish and other ocean and coastal water product.

The available statistical information relating to fishing industry in The Gambia is rather scanty and weak. Fisheries Department has recently established a Statistical Unit for the regular collection of data on the catches of fish in the Country. In the past, some adhoc surveys and studies were carried out by the Department of Fisheries with the technical assistance of FAO. Some of these reports contain information relating to the rates of utilization of the important species of fish viz: (i) percentage consumed locally in fresh form, (ii) percentage smoked or sun-dried, (iii) percentage loss in weight during smoking or sun-drying, (iv) percentage of smoked and sun-dried fish consumed locally, (v) percentage of smoked and sun-dried fish exported, (vi) percentages of various species of fish exported in fresh, chilled or frozen form. Some data on the artisanal catches of fish by species have been collected since 1993.

In addition to these sources, External Trade Statistics, prepared by Central Statistics Department, give information relating to the quantities and values of various types of fish and other products. Information contained in all the sources mentioned above were utilized to prepare the estimates of catches of fish.

The evaluation of fish has been done at the estimated prices realized by the fishermen at the landing sites. At present marketing of fish is not properly organized in the Gambia. There are hardly any cold storage facilities where the individual fishermen could preserve their catches of fish which is highly perishable. Consequently, the fishermen have to sell their catches immediately after landing to (i) the middlemen, (ii) two cold storage companies in Banjul and (iii) the smoking/sun-drying huts at comparatively very low prices. It has been estimated that the fishermen get on an average only about 25 percentage of the price paid by the ultimate consumers. The large difference between the retail price and the Producers' price is accounted for by the high trade margin, loss and wastage during selling and the transportation cost. The retail prices of the important species of fish are being collected regularly by Central Statistics Department. The producer’s average prices of fish were taken at 25 percent of the retailers’ prices.

Gross Domestic Product from fishing sector is derived by subtracting the value of inputs from the gross output. The intermediate consumption in fishing comprises the costs of (i) nets, (ii) fuel and (iii) repairs and maintenance. Fisheries Department collected (i) quantity of fuel consumed per motorized canoe, (ii) percentage of canoes with outboard motors, (iii) average repairs and maintenance per canoe, and (iv) average cost of nets per canoe. This information, along with the number of canoes and the import price indices, were, in the past, utilized to estimate the cost of catches. The information relating to the cost of catches by trawlers has ever been rather weak as the concerned companies have not been very co-operative. As such, the estimates in respect of the cost of catches by trawlers were arrived at indirectly and can be improved upon in future by obtaining detailed information from the fishing companies.

In the absence of any arrangement for collecting of producer Price of fish, the producer prices of the different species of fish are derived indirectly from the retail price (CPI). In consultation with the fisheries Department in August, 1990, the producer price of industrial fish was considered to be 75% of its retail price, and for artisanal fish it was taken as one third of its retail price.

An adequate assessment of fisheries contribution to GDP goes beyond the primary activity, although this forms the basis for the secondary and tertiary activities. Manufacturing of fish in The Gambia has been a traditional function for ages. It served the subsistence requirements of communities and the excesses were marketed. With increased urbanization, the number of traditional fish processing ventures increased to provide basic nutrient requirement for the urban centres. Fish smoking and drying are by far the most popular, though small but they are numerous.

Fish trading plays an important role in the fisheries activity. Not everyone can make it to the beach or waterfront to buy fish, nor can all fishermen have sufficient time and energy to deal with the numerous customers. The essential distribution function is performed by men and women for fees to provide them with incomes for their livelihoods.

Moreover, comparing the methodology suggested by the SLFP project to compile GDP statistics with the actual collection and computations of fisheries statistics in the Gambia, one realizes that there are serious data gaps be a major source of understating this sector's contribution to GDP. It is therefore recommended that the collection of statistics and the current methodology have deficiencies. The use of SNA 1968 as a methodology is outdated and there is an urgent need to migrate to SNA 1993 and this coupled with deficiencies observed in data collections should be accorded high priority as this will substantially improve the statistics used for the fisheries sub-sector and hence its contribution to GDP.

CHAPTER 3

CONTRIBUTION OF THE FISHERIES SECTOR TO THE GAMBIAN ECONOMY: TOTAL ECOMOMIC ANALYSIS OF DIRECT USE.

From Table 7 below, the Fisheries sector contributes up to 7.7 percent and 7.6 percent to GDP in 2001 and 2002 respectively and is the third largest food production sector, after agriculture and livestock. It should be underscored that this sector needs a little bit of organization and massive investments to unwind the untapped potentials of the teeming fish stock in The River Gambia.

Several reasons exist for believing that the contribution of the fisheries sector grossly underestimates the sector's contribution to the economy. These include the fact that fisheries statistical data collection is rather limited to the more productive ACS. Although fisheries catch and actual data collection is limited to the ACS, fishing in other fisheries areas are significant. In fact, most artisanal fishers operate in the estuarine areas than offshore. Landings of both the industrial and artisanal fisheries comprise fish species in the four species namely: the demersal fish, small pelagic fish, shrimps and the cephalopods. Sport fishing has recently become a very important activity for tourists. Organized fishing trips are regularly undertaken by tourists to fishing grounds to fish for leisure. Catches from this activity is not recorded.

The contribution of 'fishing' industry to Gross Domestic Product is estimated by product approach. This comprises the estimation of gross output and then deducting from it the value of the inputs viz; (i) fuel, (ii) cost of nets, (iii) repairs and maintenance of boats and (iv) depreciation of canoes, outboard motors and trawlers. The estimates of total fish catches, gross output and gross domestic product for the years 1993 to 2003, thus arrived at, are presented in Table 4 below.

TABLE 4: CONTRIBUTION OF FISH TO GDP: PRODUCTION

	QUANTITY(*IN METRIC TONNES*)			VALUE(*IN D'000*)			
	ARTISANAL	INDUSTRIAL	TOTAL	ARTISANAL	INDUSTRIAL	GROSS OUTPUT	GDP
1993	17,560	7,736	25,296	64525	33444	97969	81005
1994	19,917	7,752	27,668	74049	33906	107955	89646
1995	20,799	6,937	27,736	81859	32120	113980	95130
1996	30,510	8,372	38,882	92509	29863	122373	102739
1997	30,243	7,988	38,231	80204	24922	105126	88355
1998	26,533	7,012	33,545	44107	13713	57820	48595
1999	29,743	10,249	39,993	68093	27605	95697	79788
2000	26,867	9,237	36,104	70061	28337	98398	82046
2001	32,016	11,198	43,214	84858	34918	119776	99816
2002	32,336	12,160	44,496	95266	42147	137413	114241
2003	34,365	11,005	45,370	104258	39279	143538	119953

Gross income from fish trading equals the value added, the difference between the cost of fish purchases for sale and the total receipts from the sale of the fish sold in the same condition as purchased. Any significant changes of the condition of the fish from fisherman that differentiates it from its original form tantamount to manufacturing and should be accounted for accordingly. Table 5 below gives the derivation of GDP from fish trade:

TABLE 5 : DERIVATION OF GDP FROM FISH TRADING AT CURRENT PRICES

	DOMESTIC USE		EXPORT				G/OUTPUT	
Year	Qty (MT)	Val. (D'000)	Qty (MT)	Val. (D'000)	TOTAL (D'000)	% CHANGE	FROM TRADE	GDP
1993	23,698	117964	1,598	24,625	142,590	3.6	44,620	29003
1994	25,719	118905	1,950	30,621	149,526	4.9	41,571	27021
1995	25,919	122129	1,817	27,150	149,279	-0.2	35,299	22944
1996	37,338	167363	1,543	27,272	194,634	30.4	72,262	46970
1997	36,167	191736	2,063	44,427	236,163	21.3	131,038	85174
1998	31,880	205922	1,666	33,293	239,215	1.3	181,395	117907
1999	38,316	229780	1,677	36,564	266,344	11.3	170,646	110920
2000	35,203	230327	901	32,779	263,107	-1.2	164,709	107061
2001	42,265	461451	949	35,726	497,178	89.0	377,402	245311
2002	43,564	492104	932	21,334	513,438	3.3	376,025	244416
2003	44,925	308376	445	11,630	320,006	-37.7	176,468	114704

Fish processing, as mentioned before, has ever been a traditional function of Gambians. A number of small traditional fish preparation units could be found along coastal areas. Fish smoking is the commonest traditional commercial form of processing. In the seventies Ghanian immigrants settled along the coast in the Kombos and also engaged themselves in fish processing using similar techniques as the natives. However, in addition to fish smoking, the Ghanians also salted and dried the fish. Few other manufacturing plants were established that use modern techniques of preserving and packing fish, mostly for export. The CSD solicit data from these formal fish processing factories through annual surveys. Not much data is available on the operations of the numerous traditional fish processing units. However, from past studies, it is estimated that 60% of the artisanal fish catches enter the manufacturing process. For this exercise the 60% has been maintained as the quantity of artisanal fish that is manufactured. The past manufacturing coefficients also show a 30% gross output rate and about 10% intermediate consumption. The gross value added is therefore the gross output less the intermediate consumption.

Similarly, historical coefficients are maintained for the formal manufacturing of fish. 85% of the total catches are manufactured at an intermediate input ratio of 15%. The gross output ratio is 35%, which has been maintained. The contribution of manufacturing to GDP is shown in table 6.

TABLE 6: CONTRIBUTION OF FISH MANUFACTURING TO GDP

	QUANTITY			VALUE			
Year	ARTISANAL	INDUSTRIAL	TOTAL	ARTISANAL	INDUSTRIAL	GROSS OUTPUT	GDP
1993	10,536	6,576	17,112	50329	38377	88707	10095
1994	11,950	6,589	18,539	57758	38907	96665	10925
1995	12,480	5,897	18,376	63850	36858	100708	11287
1996	18,306	7,116	25,422	72157	34268	106425	11806
1997	18,146	6,790	24,936	62559	28598	91157	10092
1998	15,920	5,960	21,880	34404	15735	50139	5551
1999	17,846	8,712	26,558	53112	31677	84789	9519
2000	16,120	7,851	23,971	54648	32517	87165	9785
2001	19,210	9,518	28,728	66189	40068	106258	11939
2002	19,402	10,336	29,738	74308	48364	122672	13838
2003	20,619	9,354	29,973	81322	45073	126395	14134

Estimate at Constant Prices

The gross out put of fish at constant prices was obtained by revaluing the quantitative catch by species at the base year prices. The Intermediate consumption was estimated by applying the ratios of intermediate consumption to gross output implicit in the estimates at current prices. The tables below give the summaries of GDP at both current and constant prices for the years 1993 to 2003.

Table 7: Total Fish Contribution to GDP

A. PRODUCTION	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
1. CURRENT	81005	89646	95130	102739	88355	48595	79788	82046	99816	114241	119953
2. CONSTANT	9057	9150	9609	10291	8905	7736	8731	8978	10595	12502	13127

B. PROCESSING	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
1. CURRENT	10095	10925	11287	11806	10092	5551	9519	9785	11939	13838	14134
2. CONSTANT	1129	1115	1140	1183	1017	884	1042	1071	1267	1514	1547

C. TRADING	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
1. CURRENT	29003	27021	22944	46970	85174	117907	110920	107061	245311	244416	114704
2. CONSTANT	3243	2758	2318	4705	8584	18769	12138	11716	26038	26747	12552

D. OVERALL FISH CONTRIBUTIN TO GDP

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
1. CURRENT	120103	127592	129361	161515	183622	172053	200227	198891	357066	372495	248792
2. CONSTANT	13429	13023	13067	16178	18507	27389	21911	21765	37900	40763	27226
1.1 % at Current Prices	3.7	3.8	4	4.7	5.2	4.5	5	4.6	7.7	7.6	4.1
2.1 % at Constant Prices	2.6	2.5	2.5	3	3.4	4.8	3.6	3.4	5.5	5.7	3.6

Calculated by Author from Central Statistics and Fisheries Department Figures

Fish Production and Fish Trade

In 1985, output in the artisanal fisheries sub-sector was at 23,984.6 metric tonnes and the industrial fisheries sub-sector produced 7,736.3 metric tonnes giving a total fish production of 25,296.1 metric tones. In 2002, the artisanal sub-sector produced 32,336.0 metric tones and the industrial fisheries sub-sector produced 12,160.0 metric tones giving a total fish production of 44,496.0 metric tonnes. It can be observed that during this period, while artisanal fisheries output expanded by 84.1 percent, the industrial fisheries output grew by 57 percent.

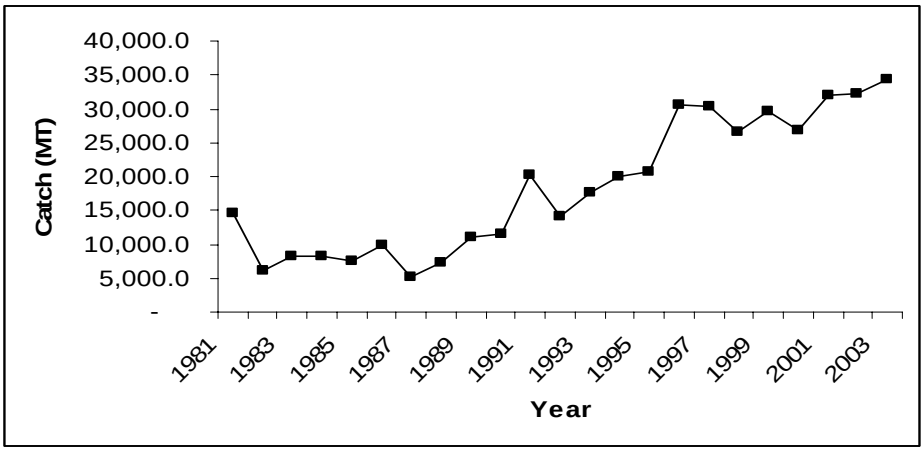
The Artisanal Fisheries

The fisheries sector of The Gambia is divided into two operational sub-sectors: Artisanal Fishery sub-sector and Industrial Fishery sub-sector. The artisanal fishery sub-sector is primarily engaged in relatively extensive low-input fishing related practices. The majority of artisanal fishermen use traditional fishing crafts/canoes (40% are motorized) and employ diverse fishing gears, methods and techniques such as: entangling/ surround gill nets (surface and bottom gill nets), hand and long lines, cast nets and traps.

The artisanal fishery sub-sector is highly diverse incorporating marine, estuarine and freshwater fishing operations. The majority of communities located along the Atlantic coastline and along the River Gambia and tributaries engage in some form of artisanal fishing activities ranging from subsistence activities to activities that are capable of generating significant economic exchanges such as shrimping and catching of catching of sole fish and cuttlefish. The most important

artisanal fishing sites are located along the productive Atlantic coast in Kartong, Gunjur, Sanyang, Tanji, Brufut, Jeshwang, Bakau and Banjul. The major fishing sites along the River Gambia are Barra, Albreda, Bintang, Tendaba and Jarreng.

Figure 3. **Annual artisanal fisheries catch**



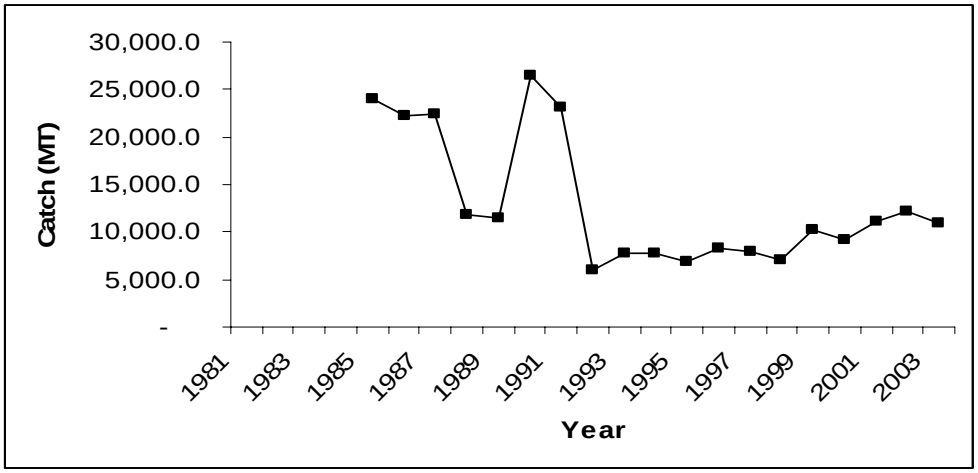
Source: Fisheries Department

The Industrial Fisheries

Industrial fishing is relatively limited in the Gambia. There are over 20 locally registered companies engaged in the industrial fisheries sub-sector and only 8 companies have made investments in on-shore processing factories but only 6 factories have so far been certified to export their products into the European Union countries. The fishing companies are granted approval by Government to license industrial fishing vessels (trawlers) to fish in Gambian waters but because of the lack of a fisheries port in the Gambia, the majority of licensed fishing vessels land their catches in foreign ports where the fish is processed, packaged and labeled as products originating from those foreign ports. This represents a major economic loss for the country.

About 2000 people are presently employed in the industrial sub-sector the majority of which are factory workers (mainly women). The total catch by industrial fishing vessels in 2003 is estimated at 11,000 tons (from catch data provided by observers posted onboard licensed fishing vessels), figure 6 gives a time series catch data of this sub-sector.

Figure 4. Annual industrial fisheries landings



Source: Fisheries Department

Fish Marketing Processing and Distribution

The artisanal fish catch is either sold among the local fishing communities for processing (drying and smoking) or is transported and marketed fresh in city, town and village markets within the coastal area and in some major towns and villages in the hinterland. The processed fishery products are transported and sold in inland markets and some are exported to the sub-region. Catches of high value species (shrimps, sole fish, cephalopods, lobster, sea breams) are purchased by industrial fishing companies and transported to fish factories for processing and export. Production by the industrial fisheries sub-sector is primarily for export.

Fish and Fishery Products Marketing

Industrial Products and Markets

The main products processed and marketed by the industrial fisheries sub-sector are mainly bulk frozen fish and fish products. These include and are not limited to: frozen crustaceans, finfish and cephalopods. The products are packaged and labeled under the brand name of the particular fishing company producing the commodity. In addition, the certification number of the company, which is specific to the company, is also indicated. This is an international requirement, which must be met by all exporting companies.

Aquaculture is not practiced to any noticeable extent. Trials were undertaken with oysters in mangrove areas through a project between 1986 and 1991 supported by International Development Research Centre (IDRC) of Canada but no interest was shown to continue the work with private sector funds. From 1984 to 1990 trials were undertaken with shrimp farming, on the initiative of Scandinavian investors. However, it was necessary to use the imported species *Penaeus monodon*, and it was found that salinity and sea temperatures showed too great a fluctuation to allow optimum productivity throughout the year. Thus the high costs involved led

to cessation of activity.

Availabilty/ Supply of Fish Per Annum

Fish availability or supply is calculated by adding the annual catches to the total annual imports and net total annual exports to determine what is available for domestic consumption. However, it is noteworthy that the importation of fish is restricted to only processed fish products such as canned fish. Even if there are any imports of fresh fish, this is usually very small and that it goes un-recorded.

The availability of fish has increased on a year-to-year basis ranging from 26,058.1 metric tones to 43,719.8 metric tones between the years 1994 to 2003. Correspondingly also, the contribution of local landings in total supply has increased from 93.4 percent in 1994 to 99.06 percent in 2003. This is so because both imports and exports have declined over the period, as in the table 8, while fish landings (fish caught) registered an increase during this time under review.

Table 8: Total Available/Supply of Fish in The Gambia between 1994 to 2003.

Year	Total Fish Caught (a) (MT)	Imports (b) (MT)	Exports © (MT	Fish Available (a)+(b)-© (MT)
1994	27,668.30	123	1,949.60	25,861.7
1995	27,736.20	139	1,817.10	26,058.10
1996	30509.8	57	1,543.30	29,023.50
1997	38,230.90	190	2,063.40	36,357.50
1998	33,545.20	349	1,665.50	32,228.70
1999	40350	158	1,676.50	38,831.50
2000	35,749.10	589.00	900.7	35,437.40
2001	43,223.10	392.00	948.80	42,666.30
2002	44,496.20	156.00	932.40	43,719.80
2003	35,370.50	114.00	445.00	35,039.50

Source: Gambian Authorities, Calculations done by author

National Consumption of Fish

The fisheries sector plays a significant role from a nutritional standpoint, 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 of Africa. According to the author's calculations the average fish consumption for the period 1994 to 2003 has increased from 25 kg per person to 28.4 kg per person (table 9). However, fish consumption is much higher in the coastal region of The Gambia.

Fish in the Gambia is the cheapest source of animal protein. According to IDAF report (1996), this assertion is particularly true for bonga, which is consumed 5-7 times per week by the majority of Gambians. Therefore, an increment in bonga catches translates directly into improvement in nutritional standard of the population.

Table 9: Per Captia Consumption of Fish in Kilogrammes Per Annum 1994 -2003

Year	Fish Available (MT)	Popn (million)*	Consumption Per Capita Kg/annum
1994	26,284.70	1066573.8	24.64405182
1995	26058.1	1096170.5	23.77194059
1996	29,023.50	1126588.38	25.76229306
1997	36,375.50	1157850.34	31.41640914
1998	32,228.70	1189979.79	27.08340114
1999	38,831.50	1223001	31.75099612
2000	35,437.40	1256939.35	28.19340488
2001	42,666.30	1291818.34	33.02809589
2002	43,719.80	1327665.3	32.92983555
2003	35,039.50	1364507	25.679238

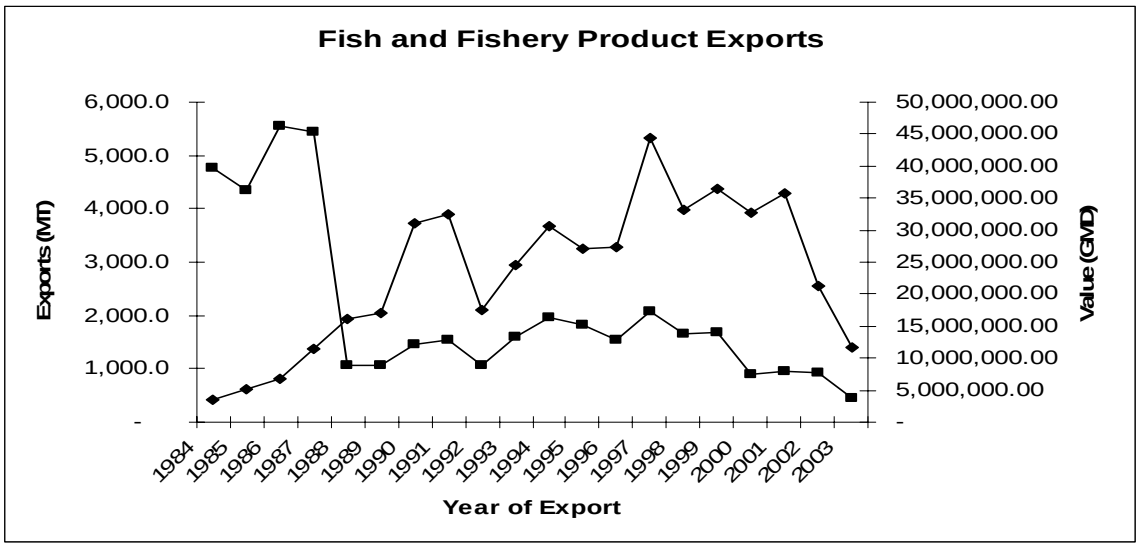
*Calculated by authors

Exports of Fish and Fisheries Products.

The potentials of the fisheries sector does not reflect on the export figures as shown in the table 11. A quick trend analysis of the contribution of the sector to exports will show that both the value and the volume of exports have been declining from a total quantity of 4,774.7 mertic tonnes or D3.5 million in 1998 and 1449.3 metric tones or D31.1 million in 1990 to 445 metric tones or D11.6 million in 2003. The value is higher in Dalasis terms only due to a depreciated currency during the period under consideration but in volume terms, there has been a 90 percent drop in exports. This is very important as it underscores either neglect or lack of a coordinated policy response to this vital sub-sector. This is partly explained by the fact that vessels that are

involved in industrial fishing land their catches in Senegal, as per a bilateral fisheries agreement, instead of landing in The Gambia. This will make the collection of accurate statistics to be extremely very difficult, as even the 10% of the catch that is supposed to be landed in The Gambia is not being done owing to the lack of a fisheries port in The Gambia. This then brings the issue of putting the construction of a fisheries port on a fast tract to be very urgent if exports are to be boosted.
Figure 5 below gives time series of exports (MT) and values (GMD, based on F.O.B. Values) from 1985 to 2003 by fishing companies.

Figure 5. Exports of artisanal and industrial fish & fishery products from 1985 - 2003.



Source: Fisheries Department

The EU member countries are the major markets for Gambian fish and fisheries products. According to table 10, about 96% of all shrimp exports in 2003 went to the EU and 33% of that went to the United Kingdom. The four major importers of Gambian fish are Germany, UK, Netherlands and Spain. In 1999 and 2003 exports of the bulk of high valued species such as shrimps, cephalopods and the so-called white fish go to the EU countries and dried shark meat, dried salted fish and smoked fish go to the sub-region. The shark fin exports are to the Asia countries.

Table 10. 2003 Exports of Fish to EU and Other Destinations

	Destination (%)	
	EU	**Others**
Fish	58.2	41.8
Sole fish	84.6	15.4
Shrimps	96.4	3.6
Cuttlefish	56.5	43.5

Source: Fisheries Department

Table 11. Examples of Fish Exports Markets (EU) -2003

	Product Type (%)			
	Fish	**Sole fish**	**Shrimps**	**Cuttlefish**
Belgium	0.4	30.4		
Denmark	11.2			
Germany	29.1	48.5	14.8	4.4
Spain	9.7	7.3	22.1	80.4
UK	11.3		33.2	
Netherlands	21.0	5.7	20.5	14.1

Source: Fisheries Department

Artisanal Fish and Fisheries Products

Exports of fish and fisheries products from the Gambia can source their origin to artisanal sub-sector which, as at now, is the major supplier of raw fish material to the fish processing plants. The artisanal fisheries sub-sector in The Gambia provides over 90% of the domestic fish supply. Such fish is in the fresh, smoked or dry-salted product form. The landing of the artisanal fisheries is estimated at about 34,365 tonnes in 2003, of which about 60% is marketed and consumed in the dried or smoked form. About 40% is utilized in the fresh form including iced fish, mainly in the urban areas. (Njie & Njai, 1998). These percentages can vary depending on supply and demand for fish. However, most of the artisanal catch is cured through traditional processing methods in major fish landing sites. Poor catch handling methods, facilities, scarce ice and inadequate refrigeration facilities result in high rates of spoilage in the artisanal fisheries sector. In order to reduce spoilage and provide more fish, a large part of the catch (mostly bonga and marine catfish) has to be processed immediately by smoking to arrest any further spoilage.

Table 12: Exports of Fish and Fishery Products (1984 – 2003)		
Year	**Qty (MT)**	**Val. (GMD)**
1984	4,774.7	3,525,848.00
1985	4,352.1	5,040,848.00
1986	5,562.8	6,695,965.00
1987	5,452.4	11,363,179.00
1988	1,068.2	16,028,437.00
1989	1,068.7	17,154,146.00
1990	1,449.3	31,117,402.00
1991	1,544.4	32,470,440.00
1992	1,060.9	17,602,622.00
1993	1,597.9	24,625,442.00
1994	1,949.6	30,621,122.00
1995	1,817.1	27,149,996.00
1996	1,543.3	27,271,831.46
1997	2,063.4	44,427,354.57
1998	1,665.5	33,293,224.67
1999	1,676.5	36,563,649.00
2000	900.7	32,779,476.58
2001	948.8	35,726,198.72
2002	932.4	21,334,061.57
2003	445.0	11,629,895.33

Source: Fisheries Department data

Fish and Fish Product Imports

The fisheries sub-sector has been able to meet almost all the supply of unprocessed fish for the local market to the extent that even if there are imports of unprocessed fish, it is very small and usually not recorded. However, the imports of processed fish products like canned fish and others are substantial as shown in the table below.

In 1994, fish imports reached 123 tonnes for a value of D1.9 million as shown in table 13. There has been a general decline the trend of imports especially in the last years (2002 and 2003) to 156 metric tones or D0.8 million and 114 metric tones or D1.2 million. However, imports were highest with an amount of 349 tonnes or D1.3 million in 1998 and 589 tonnes or D3.5 million in 2000. The year 2001 seem to be the exception in value terms. The Gambia hardly imports fresh fish and even if it does, this might be in small quantities from Senegal and are not recorded. The imported fish are mainly comprised of canned fish from Europe and Morocco for the domestic market and shark fins from Mauritania for re-exports to Asia. The value of sharks was 42% of total official fish product imports. However, the mere fact that not much fresh fish is imported

underscores the point that a lot of foreign exchange by the country in producing for the local market.

Table 13: Annual Imports of Fish Products			
YEAR	**IMPORTS**	**IMPORTS VALUE**	
	Volume		
1994	**123**	**1900**	
1995	**139**	**2061**	
1996	**57**	**782**	
1997	**190**	**1443**	
1998	**349**	**1364**	
1999	**158**	**710**	
2000	**589.00**	**3484**	
		15,439	
2001	**392.00**	**15439**	
2002	**156.00**	**808**	
2003	**114.00**	**1298**	
Source: Central Statistics			

Contribution of Fisheries Sector to Government Revenues.

Entry into The Gambia Fisheries Sector

Fisheries have become a market driven, dynamically developing sector for the food industry resulting in coastal states investing in modern fishing fleets and processing plants in response to growing demand for fish and fishery products. The requirement by that UNCLOS for distant water states to be given access to "surplus" resources of coastal states also paved the way for the operation of distant waters fishing fleets in coastal fishing grounds such as those of the Gambia. Foreign fishing fleets operating in waters within the jurisdiction of The Gambia come in through the EC/Gambian Fishing Agreements (1987 – 1996), bilateral agreements (Japanese), Reciprocal Maritime Fishing Agreement (Senegalo-Gambia Maritime Fishing Agreement) and through joint ventures with Gambian nationals. The following are the Agreements the Gambia has entered into:

- The EEC- Gambia fishing agreement was a compensatory agreement whereby the Gambia allowed access to EEC fishing vessels to fish in Gambian waters. The EEC paid financial compensation to the Gambia; provided funding for the training of staff of the Fisheries Department in fisheries institutions of higher learning and also provided funding for scientific research programs. EEC fishing vessels also paid agreed fishing license fees. The agreement started in 1987 and ended in June 1996, it has not been renewed.

- The Gambia entered into a Tuna fishing agreement with the Federation of Japan Tuna

Associations. Upon payment of agreed fees, Japan Tuna long liners are allowed to catch Tuna in Gambian waters during the annual migration of Tuna usually from November to March. Although the agreement is not reciprocal in nature, the Government of Japan has been providing funding for artisanal fisheries development projects (Bakau, Tanji, and Gunjur) and has also been providing Technical Assistance through the Japanese Grant. The Tuna fishing agreement started in 1992 and is on-going.

- The Gambia-Senegal fishing agreement is a reciprocal fishing agreement whereby each country allows fishing vessels of the other country to fish in its waters based on agreed tonnage and agreed fishing license fees. This agreement is reviewed annually and can be terminated by either party upon giving 3 months notice. The agreement was entered into in 1982 and is on-going. However, this agreement has benefited Senegal most in that fish catches of the industrial fishing sub-sector are landed in Senegal due to the unavailability of a fish port in The Gambia and due to the fact that Gambian industrial fishing is underdeveloped and has not been reciprocating by fishing in Senegalese waters.

Licensing and Fees

The Licensing Authority is the Fisheries Department but approval for licensing are to be sought from and granted by the Department of State responsible for Fisheries. A pre-licensing exercise for conformity with national and international regulations precedes issue of a fishing license. Fishing vessels are charged according to the flags they fly and fish species they target. Table 14 below shows the rates of licensing fees by flag type.

Table14. Licensing fees per GRT per year

Product	**Cost/GRT (For.) GMD**	**Cost/GRT (Loc) – GMD**
Shrimp	4687.50	1800.00
Fish and Cephalopods	3750.00	1417.50
Fish Processing Vessel	2250.00	2250.00

This sector contributes to government revenues mainly from two sources: Court Fees and Fines on fishing vessels and Fishing License and Registration Fees. In table 15 below, the contribution of the fisheries sector to government revenues is very negligible and has varied from 0.6 percent to 1.1 percent of total domestic revenues during the period 2002 and 2005. Even between these two sources of revenues, Court Fees and Court Fines are highly volatile and depend largely on efficiencies and effectiveness in surveillance. The increase in revenues from 0.8 percent of total domestic revenues in 2004 to 1.1 percent of 0.2 total domestic revenues in 2005 has been largely due to increments in the rates for fishing licenses and registration fees. However, this shows that the great potentials of this sector is yet to be fully tapped especially if compared to countries like Ghana where fisheries contribute up to 31 percent of domestic revenues and Senegal where the lead foreign exchange earner is fish and fisheries product exports.

Table 15: Government Revenues from the fisheries sub-sector.

Source	2002	2003	2004	2005
Court Fees & Fines	D1,500,000	D75,000	D5,000,000	D7,000,000
Fishing Licenses & Registration Fees	D9,000,050	D8,568,433	D15,000,000	D20,000,000
Total Revenue From Fisheries	D10,500,000	D8,643,433	D20,000,000	D27,000,000
Total Dom Revenue	D1040.2	D1379.7	D2245	D2408.4
% Of GDP	1%	0.6%	0.8%	1.1%

Source: Budget Documents of the Department of State for Finance and Economic Affairs

NB: all figures are estimates except the 2003 figures, which represent actual collections. The 2005 total domestic revenues are also the projected annual total domestic revenue.

Contribution of Fisheries Sector to local development

Data on the contribution of the fisheries sector to local government authorities is not readily available and would require an additional study or survey.

Employment Generation By The Fisheries Sector

Gambian artisanal fishers are among millions of people employed in small-scale fishing throughout the world. Worldwide there are 12 million more jobs directly related to artisanal fishing e.g. fish processing and marketing (Weber, 1999). Indirectly also, there is boat building, engine maintenance and the manufacturing of fishing gear. It is estimated that the artisanal 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 fish and fisheries related activities (Mendy, 2003).

CHAPTER 4

CONTRIBUTION OF THE FISHERIES SECTOR TO THE GAMBIAN ECONOMY: SUSTAINABLE LIVELIHOOD OF FEW COMMUNITIES.

The United Nations Systems advocates for the attainment of the Millennium Development Goals (MDGs) by 2015. One of these goals is to ensure environmental sustainability, which in a nutshell can be defined as the use of the natural resources in any given space in such a way that will improve the quality of life now without jeopardizing the planet for the future. Hence, sustainable livelihood can be seen within this context.

In considering the current social and economic status of the Gambia: underlying poverty and malnutrition, and excessive reliance on land base agriculture and a shortage of foreign exchange, the sustainable development of the fisheries sector can be seen to be a potentially powerful instrument in the overall national development strategy for the following reasons:

Fish and marine products represent a major component in the staple diets of many Gambians in light of its relative affordability and availability. Fish represents a potentially superior protein substitute to high priced meat and can therefore play a leading role in the Government's effort to eradicate malnutrition amongst the population.

The fisheries sector, though not fully developed, provides significant employment thus representing a major source of income for both rural and urban communities and in many areas, a valuable and viable alternative to rain-fed agriculture. Correspondingly, productivity increases in the fisheries sector is expected to generate a multiplier effect throughout the economy and widespread improvements in living standards and real per capital income levels for a substantial segment of the population.

The export potential of the fisheries sector has to date been seriously neglected, and substantial excess exists for increased foreign exchange earnings. Total fish exports at F.O.B. values for 2001 was about 35 Million Dalasis only. Given the high value attached to foreign exchange earning in countries like the Gambia that are undergoing structural adjustment, the fisheries sector with its enormous potential represents a valuable foreign exchange earning source. The development of the export trade in fishery products would assist the Government in diversifying the economy and shifting reliance away from agricultural exports.

The contribution of sport fishing to the economic and social development of the Gambia is not assessed. By all indicators, sport fishing is an important activity in terms of the number of tourists undertaking this activity.

Study of artisanal fishing in Gunjur, The Gambia.

The study is using only Gunjur as a case study because a survey of key fishing towns and centres could not be conducted due to lack of funding and the short duration of the study. This study was

done by Peter and Sue Webber (1999) and funding, for the study, was provided by Oxfam from the EC mini-project grant.

The Village of Gunjur

A predominantly Muslim community with lots of mosques and inhabited by 12 000 people at the time of the study most of whom rely on either farming or fishing for their livelihoods with only a few people commuting to work in the urban areas. At the time of this study, the village has no electricity, sewerage or piped water; people fetch water from open wells, and cooking is done mainly from firewood, whiles most lighting is done from candles or lamps. The Mandinka tribe is the dominant tribe in Gunjur, although there are few other tribes such as wollofs and Jolas. The inhabitants of this village generally live in large extended families and it is 3 km from the sea, although on the nearest beach, there exist a large fishing village with numerous smoke houses, drying platforms and small shops. In 2003, the Japanese Government through the Gambia Japan bilateral Agreement has completed a large Cold Store and other fishing facilities in Gunjur. This will minimize loss of fish catches associated with rot, facilitate processing and thereby increase earnings of those involved in fishing. The construction of a Coastal Road at the beginning of the 21st century has also opened up important fishing villages including Gunjur to the markets.

The Importance of Fish to Gunjur

Fish in The Gambia is one of the cheapest sources of protein and oils for both adults and children. Most meals are made up of locally caught fish, home grown rice and vegetables. Lord Dennis Carter of the House of Lords expressing the importance of fishing to Gunjur has this to say:

“The internal economy of The Gambia is dependent upon fish. The livelihoods of most of the women are dependent upon smoking, drying and marketing of fish. Fishing off the Coast of Gambia is done mainly by Senegalese (mainly of the wollof tribe) fishermen who bring their catch to several of the Gambian villages, of which Gunjur is a principal one. The fish caught are entirely pelagic or surface fish”.

Artisanal fishermen are not only restricting their catches to pelagic fish, but they now include demersal as well as shark and shellfish.

Throughout the World, small-scale coastal fishing employs about 12 million people of which those in Gunjur are inclusive. It is believed that another 12 million people have been employed indirectly by artisanal fishing (Peter and Sue Webber, 1999). As in Gunjur, indirect employment from the artisanal sub-sector ranges from boat building, engine maintenance and the manufacturing of fishing gears. Direct employment is derived from fishing, fish processing, marketing etc. Fish smoking is gender bias as men are doing the hot smoking while women do the cold smoking. In 1983 the EEC financed the building of fish smoking facilities but other smoking of fish is done at homes within Gunjur. Some fish are dried or salted to enable long storage and transport inland. At the time of the study, there were two fishing boat builders on the

Gunjur beach and boats and nylon fishing nets were from Senegal, although fishermen on the beach make few of these nets. A bye-product of the fishing is the use of fish waste as a fertilizer for local fields.

The fisher folks in Gunjur are largely made up of Senegalese. However, there exist other nationalities such as Ghanians and Gambians. In 1998/99 the number of Senegalese living in Gunjur went up substantially due to the political instability in Cassamance – the southern region of Senegal. These foreign fisher folks rent rooms in the compounds, buy food and goods from the market and shops and consequently contribute to the financial well being of the community of Gunjur. Some of the Gunjur host families had made enough money from the newcomers to build extensions within their compounds. There are bush taxi services to and from the beach.

The Bonga (Ethalmosa fimbriata) is the most important cheap food fish in Gunjur. It is a surface feeding fish about 20 to 30 centimetres long. Like all such pelagic fish it is caught in circular nets, which are cast from fishing boats called piroques. Outboard engines power most of these boats with a crew of between 8 and 11. In addition to this crew, each boat has one or two assistance that repair the fishing nets and assists with boat repairs. The larger fish is used to fish for bottom feeding or demersal fish.

Fresh fish is carried on a daily basis throughout The Gambia by cycle mongers or Banabanas, and cars, vans and trucks. The 1997 fisheries study shows that 30 percent of Banabanas use bicycles, 12 percent motorbikes, 34 percent cars, 5 percent truck and 19 percent other transport. Problems included poor transport equipment, poor road surfaces, lack of ice and lack of working capital.

In the capital city of Banjul, there are only five fish factories, which obtain their regular supplies from main, fishing centres and trucks are the main means of transportation. The artisanal fishermen are involved in catching high value demersal fish, which goes to the European markets through the existing fish factories.

There are several reasons why the contribution of the fishing sector is being understated. One of them is that many fish are bought from the boats well before they are weighed. However, fieldwork carried out on Gunjur, Sanyang and Tanji landing beaches confirms over fishing as a major problem facing these fishing communities. Over fishing is mainly on the demersal stock and the pelagics are being under-used. This over exploitation of fish is partly due to the government's own development programmes for the fishing industry. Artisanal fishing received some assistance from government to purchase engines and more efficient gear such as nylon nets. Sustainability is a problem as was raised by the FAO at the opening of EXPO'98 in Lisbon…

" Failure to change current fishing malpractices will leave us with a huge supply gap as early as the year 2010."

The effect of globalization is widespread and discernable in the small village of Gunjur and its inhabitants; they are linked to the global fishing practices and policies to the extent that decisions

taken in Bruxelles, Rio and Tokyo could very much affect their lot, their livelihood and their future quality of life. Hence, even though individually they are powerless but collectively they may have power in the future (Webber 1996).

Fish Processing

To complement the Webber study and to bring out another important aspect of fisheries, the aspect of the IDAF study dealing with fish processing is discussed below.

Smoked Fish

There are essentially two types of fish smoking: bonga smokers (male and Female) and female smokers of catfish, skate and ray fish (IDAF Technical Report No. 80, 1996).

Smoked bonga is the principal source of income of the artisanal fisheries and more than 10,000 tonnes of bonga fish are processed every year. The method of smoking fish is mainly by using Chorkor ovens, introduced by the IDAF programme in 1984-85. This technique is very suitable and contributes successfully in the fight against fish losses, increased profitability and limited deforestation through a 40 percent reduction in fuel wood consumption.

According to an IDAF study (1996) fish smoking is highly profitable but at the same time has health hazards as smokers are exposed for many hours to polluted smoke. This study quoted a study that was done at about the same time that the average net revenues of a large scale fish smokers in Gunjur, where all smokers are male, varied from D2, 100 to D3, 800 per month depending on the season. In Tanji the prospects were even greater as net monthly revenues for males ranged from D7, 500 and D10, 800 and revenues earned by female smokers in the same place varied from D335 to D900. This is largely due to the gender neither bias of this sector and to the fact that women hardly owned assets nor has access to credits. Worst still, women smokers buy fish at a much higher price than male. In Tanji too, it was estimated that average net monthly income of catfish female smokers was in the range of D1, 700 to D2, 000. In these fishing communities, artisanal fishing is their main source of financial strength and fishermen and others directly or indirectly employed by this sector used the proceeds of these funds to meet their daily subsistence, pay for their school fees and medical bills among other expenses.

Another observation by this IDAF study was that since firewood was the main source of energy for these smokers, the destruction of the forest ecosystem was on a large scale and fuel wood was scarce in areas that did lot of fish smoking and that fish smokers were increasingly being dependent on suppliers of fuel wood, who transport this wood through horse and donkey carts, pick-ups and tractors from very far away places. The Government took corrective measures by introducing the “Gmelina Arborea” forest plantation as part of the Artisanal Development Project funded by the European Development Fund (EDF).

Dried Fish

In almost all the landing sites, drying of fish is a common practice and the main raw material used in this processing is spoiled fish and not the fresh ones. The raw material is usually fermented or putrefied overnight, then cleaned, gutted, dripped salted and dried on drying racks/platforms, constructed with local forest materials from the bush. Usually it takes 3 to 6 days for the fish to dry. The products are generally of good quality but there are hygienic concerns about the process, as pest infection could not be ruled out. Rain and dust are major sources of loss and improved techniques are required in this respect.

Another dried product is the sea snail, locally known as “yete” that are caught by trawlers and are collected from the boats near the coast by local fishermen in all the fishing sites. There exist a small market for wild oyster meat sold fresh.

CHAPTER 5

CONCLUSION AND RECOMMENDATIONS

Conclusion

The separation of functions between the Central Statistics Department that is nationally tasked with the responsibility of collecting Data on all aspects of economic statistics to that of the fisheries Department currently collecting the data as of now is in itself a problem. The Central Statistics Department is only using secondary data. There also exist very weak linkages between the Fisheries Department and other related government institutions such as the Department of State for Finance and Economic Affairs that makes economic policy and the data that is generated by the Fisheries Department and other studies on this sector is not widely circulated.

The Fisheries sector plays a very vital role in The Gambian economy. Its contribution up to 7.7 percent to GDP and it is the third largest food production sector, after agriculture and livestock. There are so many reasons that can cause underestimation of this sector to GDP and these include: the exclusion of the contribution of sports-fishing in the current compilation of GDP, the lack of a national coverage in collecting fisheries data, the majority of licensed fishing vessels landing their catches in foreign ports; that many fish are bought from the boats well before they are weighed; the production approach to GDP takes the total output cost and deducts the cost of inputs but the information relating to the cost of catches by trawlers has ever been rather weak and hence cost estimates of trawlers were arrived at indirectly and the fact that some of the ratios used in calculating the sector's contribution has now outlived their usefulness.

Moreover, because the sector has not been better organized in terms of marketing, in terms implementing some of the requirements embedded in the various agreements especially the 10 percent landing of catches by industrial vessels, the contribution to revenues has been very small. The contribution of this sector to domestic revenues ranged from 0.6 percent to 1.1 percent between 2002 and 2005.

In 1985, output in the artisanal fisheries sub-sector was at 23,984.6 metric tonnes and the industrial fisheries sub-sector produced 7,736.3 metric tonnes giving a total fish production of 25,296.1 metric tones. In 2002, the artisanal sub-sector produced 32,336.0 metric tones and the industrial fisheries sub-sector produced 12,160.0 metric tones giving a total fish production of 44,496.0 metric tonnes. It can be observed that during this period, while artisanal fisheries output increased by 84.1 percent, the industrial fisheries output rose by 57 percent.

Exports of fish and fisheries products have not expanded fast to reflect the enormous potentials of the sector. This is true in both value and volume terms as the export figures stood at 4,774.7 metric tones or D3.5 million in 1998 and this contracted in volume terms to 445 metric tones even though the value went up to D11.3 million in 2003, owing largely to depreciation of the Dalasis. However, exports is constrained by the fact that the landing of catches of the industrial Sector is mainly done on foreign ports. In contrast, this sector is the lead foreign exchange earner for Senegal.

Similarly, the Gambia hardly imports fresh fish and even if it does, this might be on a small scale and usually it goes unrecorded. The imported fish are mainly comprised of canned fish from Europe and Morocco for the domestic market and shark fins from Mauritania for re-exports to Asia. The value of sharks was 42% of total official fish product imports. However, the mere fact that not much fresh fish is imported underscores the point that a lot of foreign exchange is saved by the country in meeting the domestic market's consumption requirements from domestic output. In 1994, fish imports reached 123 tonnes for a value of D1.9 million as shown in table 11. There has been a general decline in the trend of imports especially in the last years (2002 and 2003) to 156 metric tones or D0.8 million and 114 metric tones or D1.2 million. However, imports were highest with an amount of 349 tonnes or D1.3 million in 1998 and 589 tonnes or D3.5 million in 2000.

The fisheries sector's contribution to government revenues comes principally from two sources: Court Fees and Fines on fishing vessels and Fishing License and Registration Fees. This contribution has been very small and it varied from 0.1 percent to 0.2 percent during the period 2002 and 2005. Even this observed increment was more associated with upward revisions in the rates. This compares unfavourably with countries like Ghana that earns up to 31 percent of her revenues from this fishing sector.

The supply of fish has increased over the years ranging from 26,058.1 metric tones to 43,719.8 metric tones between the years 1994 to 2003. Correspondingly also, the contribution of local landings in total supply has increased from 93.4 percent in 1994 to 99.06 percent in 2003. This is so because both imports and exports have declined over the period, as in the above table, while fish landings (fish caught) registered an increase during the same period.

The fisheries sector plays a significant role from a nutritional standpoint and according to the author's calculations the average per capita fish consumption for the period 1994 to 2003 has increased from 25 kg per person to 28.4 kg per person. This is way above the 8.2 kg per person average for Africa. However, fish consumption is much higher in the coastal region than in the interior of the country.

The sector's contribution to employment cannot be overemphasized, since it is estimated that the artisanal 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 fish and fisheries related activities (Mendy, 2003). By this figure, the sector employs around 7 percent of the total population of about 1.3 million people.

The internal economy of The Gambia is dependent upon fish. The livelihoods and financial strength of fisher folks be it in Gunjur, Tanji, Bakau, Banjul etc are derived from fish and fish related activities ranging from fishing, smoking, drying and marketing of fish, repairing of boats, selling of premix fuel to maintenance and repair of boats etc. There is lots of Senegalese fisher folks in The Gambia. These foreign fisher folks rent rooms in the compounds, buy food and goods from the market and shops and consequently contribute to the financial well being of the

community of Gunjur. Some of the Gunjur host families had made enough money from the newcomers to build extensions within their compounds. There are bush taxi services to and from the beach.

The Bonga (Ethalmosa fimbriata) is the most important cheap food fish in Gunjur. Like all such pelagic fish, it is caught in circular nets that are cast from fishing boats called pirogues, most of which are powered by outboard engines with a crew of between 8 and 11. In addition to this crew, each boat has one or two assistance that repair the fishing nets and assists with boat repairs. The larger fishing net is used to fish for bottom feeding or demersal fish. Fresh fish is carried on a daily basis throughout The Gambia by cycle mongers or Banabanas, and cars, vans and trucks. The 1997 fisheries study shows that 30 percent of Banabanas use bicycles, 12 percent motorbikes, 34 percent cars, 5 percent truck and 19 percent other transport. Problems included poor transport equipment, poor road surfaces, lack of ice and lack of working capital.

Smoked bonga is the principal source of income of the artisanal fisheries and more than 10,000 tonnes of bonga fish are processed every year (IDAF 1996). The method of smoking fish is mainly by using Chorkor ovens, introduced by the IDAF programme in 1984-85. This technique is very suitable and contributes successfully in the fight against fish losses, increased profitability and limited deforestation through a 40 percent reduction in fuel wood consumption.

According to an IDAF study (1996) fish smoking is highly profitable but at the same time has health hazards as smokers are exposed for many hours to polluted smoke. The net revenues of a large-scale fish smoker in Gunjur, where all smokers are male, varied from D2, 100 to D3, 800 per month depending on the season. In Tanji the prospects were even greater as net monthly revenues for males ranged from D7, 500 and D10, 800 and revenues earned by female smokers in the same place varied from D335 to D900. This is largely due to the gender neither bias of this sector and to the fact that women hardly owned assets nor has access to credits. Worst still, women smokers buy fish at a much higher price than male. In Tanji too, it was estimated that average net monthly income of catfish female smokers was in the range of D1, 700 to D2, 000.

However, fieldwork carried out on Gunjur, Sanyang and Tanji landing beaches confirms over fishing as a major problem facing these fishing communities. Over fishing is mainly on the demersal stock and the pelagics are being under-used. Another sustainability concern is raised regarding the depletion of the forest due to the techniques used in smoking fish.

The effect of globalization is widespread and discernable even in the small village of Gunjur and its inhabitants; they are linked to the global fishing practices and policies to the extent that decisions taken in Bruxelles, Rio and Tokyo could very much affect their lot, their livelihood and their future quality of life (Webber 1996).

Recommendations Specific to the Study

Strengthening the Fisheries Department's links with the Central Statistics Department and other institutional arrangements is a necessity. As it stands today, there is a Statistics Unit at the Fisheries Department that is charged with the responsibility of conducting surveys and collecting data in the

fisheries sector. Apparently, the Central Statistics Department of The Gambia gets secondary data from the Fisheries Department, which it uses to compile its GDP figures. It therefore becomes necessary to capacitise the Central Statistics Department and then centralize the collection of fisheries statistics.

It also follows that these statistics are not widely circulated to a wider readership and users especially policy makers. Thus there is a need to establish a channel through which studies and statistics in this important sector are published or circulated to users. In the past, there is also a very weak link between the Department of Fisheries and the Department of Agriculture and the Department of State for Finance and Economic Affairs that is charged with the responsibility of overall economic policies. In 2004, a new Department of State for Fisheries was created to prevent these weak links that cause the fisheries sector to loose the needed attention it deserved.

Despite the fact that a good statistical system was in place, countrywide coverage was not feasible. This necessitated the sample survey approach rather than total or partial sampling. The landing sites covered are selected on the basis of how representative they are in terms of number of canoes, etc, At present, no CAS is conducted inland (i.e. Lower and Upper River Strata) due to financial and manpower and logistical constraints. There is the need to design a data collection mechanism that covers the entire country. Moreover, arrangements should be made to collect the sale prices at landing sites to provide estimates of producer prices.

Capacity constraints have hampered the progress of this sector and consequently, future policy interventions should consider strengthening the human and material capacities of the Fisheries Department. The establishment of a fisheries training school will go a long way in addressing these constraints.

Immediate action is also recommended for the development of the relevant fisheries infrastructure particularly the fisheries port to encourage the landing of all catches from the industrial fisheries sub-sector in the Gambia to promote backward and forward linkages between this sector and other economic activities such as exports etc. Facilitating the provision of other ashore facilities such as ice plants, cold storage facilities and means of fresh fish distribution and marketing would go a long way to improving the sectors contribution to economic development of The Gambia. There is also urgent need to purchase a patrol boat to strengthen surveillance. It must be admitted that the existing boat is deficient in many aspects to effectively carryout this function.

Another point worth buttressing is the fact that some of the ratios used in calculating the sector's contribution have now outlived their usefulness. The bottom line is that, frame survey, which was meant to be conducted every other year, has not been done since 1997 due to financial and logistics constraints. However, while all these surveys were done and certified appropriate in the mid 90s, due to lack of funding and man power, follow-up surveys were not done, as was recommended, to reflect the current realities on the fishing sector today and this by itself can be a major source of underestimating the contribution of the fisheries sector to overall economic activities.

An inventory of the existing infrastructures, facilities and services and a survey of the different institutional arrangements and organization to include issues like structure, membership, rights, rules, regulations etc would be necessary to complement the outcome of the other surveys. The available statistical information relating to fishing industry in The Gambia is rather scanty and weak. Fisheries Department has recently established a Statistical Unit for the regular collection of data on the catches of fish in the Country. In the past some adhoc surveys and studies were carried out by the Department of Fisheries with the technical assistance of FAO.

The information relating to the cost of catches by trawlers has ever been rather weak as the concerned companies have not been very co-operative. As such, the estimates in respect of the cost of catches by trawlers were arrived at indirectly and can be improved on in future by obtaining detailed information from the fishing companies.

The CSD solicit data from these formal fish processing factories through annual surveys. Not much data is available on the operations of the numerous traditional fish processing units. However, from past studies, it is estimated that 60% of the artisanal fish catches enter the manufacturing process. For this exercise the 60% has been maintained as the quantity of artisanal fish that is manufactured. The past manufacturing coefficients also show a 30% gross output rate and about 10% intermediate consumption. The gross value added is therefore the gross output less the intermediate consumption.

Moreover, comparing the methodology suggested by the SLFP project to compile GDP statistics with the actual collection and computations of fisheries statistics in the Gambia, one realizes that there are serious data gaps which might understate this sectors contribution to GDP. It is therefore recommended that the collection of statistics and the current methodology especially as it relates to migrating from SNA 1968 to SNA 1993 be accorded high priority as this will substantially improve the sectors contribution to GDP.

Finally the suggested SLFP methodology could be improved upon by designing a way of capturing the contribution of sports-fishing to overall economic activities as this might be very substantial for countries with a robust tourist sector like the Gambia.

General Recommendations

By claiming the Exclusive Economic Zones, The Gambia has since then the responsibility for sustainable management of fish resources within its jurisdiction. In order to achieve this goal, an adequate knowledge of the state of fish resources within the EEZ should be acquired through research and statistical data collection and analyses. This knowledge can there be put into best use by ensuring that there exist a sustainable management mechanisms are established that guarantees the availability of fish today and tomorrow.

At present marketing of fish is not properly organized in the Gambia. There are only few cold storage facilities where the individual fishermen could preserve their catches of fish, which is highly perishable. Consequently, the fishermen have to sell their catches immediately after landing to (i) the middlemen, (ii) to cold storage companies in Banjul and (iii) the smoking/sun-

drying huts at comparatively very low prices. It has been estimated that, the fishermen get on average, only about 25 percentage of the price paid by the ultimate consumers. The large difference between the retail price and the Producers' price is accounted for by the high trade margin, loss and wastage during selling and the transportation cost. The retail prices of the important species of fish are being collected regularly by Central Statistics Department. The producer's average prices of fish were taken at 25 percent of the retailers' prices.

Some of the agreements entered into between The Gambia and Senegal, Japan the European Commission should be revisited, and where possible, new agreements and partnerships that will maximize the gains from this sector, should be sought.

The Vessel Observer programme could be an effective tool for monitoring the activities of the industrial fishing fleet licensed to fish in the waters of The Gambia, if, appropriate arrangements for the remuneration of the Observers are made. As at now, Observers are paid by vessel owners hence room for switch of allegiance to vessel owners. To avoid this problem, Observers are rotated every three months. The immediate option that comes in mind is the creation of an observer fund where monies for the remuneration of Fisheries Observers are lodged.

Future policy interventions in this sector should adequately provide credit facilities especially to the needy operators in the rural communities; develop the commercial potentials of high value crustaceans and shell fishes; revise upwards fishing license fees and F.O.B. values; develop a national network of repair and maintenance facilities; establish premixed fuel vending stations in areas where the premixed fuel is not yet available; assist in developing a reliable fish distribution and marketing network through the provision of cold storage facilities at major inland fish markets and the provision of insulated/refrigerated fish carriers (for road and sea); regulate fishing methods, gears and fishing intensity to the regenerative capacity of the resource base to avoid depletion; rigorously enforce the requirement that all licensed fishing vessels land all or a part of their fish catches in the country.

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