



# 2

## Overview of the fisheries sector



This Chapter reviews the role of “fisheries” and “fish processing” in the economy of The Gambia, while also unravelling the organization of the fish product chain, with due attention to gender roles. “Fisheries” is here and hereafter intended to include the economic activities of capture or culture of aquatic animals and plants (i.e. fish harvesting). “Fish processing” covers two discrete segments: i) the industrial processing (washing, sorting, cleaning, processing, packaging and freezing) of fresh fish, mainly for export to the European Union (EU), but also to other international destinations; and ii) traditional smoking and drying processes (cured fish products), mainly for the domestic and regional markets -with some smoked fish for the European and other international niche markets.

## 2.1 THE RESOURCE BASE

With a continental shelf area of about 4,000 km<sup>2</sup> and approximately 10,500 km<sup>2</sup> of Exclusive Economic Zone (EEZ), The Gambia is believed to be particularly rich in terms of fish species abundance and diversity. This rich resource base offers great potential to make a substantial contribution to The Gambia’s socio-economic development, if fish resources are managed sustainably.

Over 500 marine fish species have been recorded in Gambian waters; they are usually classified as demersals (bottom dwelling) and pelagics (surface dwelling). The demersals include: shrimps, groupers, sea breams, grunts, croakers, snappers, etc. The small pelagics group consists of the two sardinellas (*Sardinella aurita* and *Sardinella maderensis*), the bonga/shad (*Ethmalosa fimbriata*), horse mackerels (*Trachurus trecae*, *Trachurus trachurus* and *Caranx rhoncus*) and mackerel (*Scomber japonicas*). The high value demersal species (shrimps, sea breams, lobsters and cephalopods, among others) are mostly supplied to fish processing factories for export, mainly to the EU, North America, and Asia. Small pelagics are mainly consumed locally in fresh or traditionally processed product form, or exported regionally.

In the inland sector, fish resources are found within The Gambia River system, which runs through the entire length of the country. They comprise mainly fresh water species, such as: the freshwater catfish, (*Clarias spp.*), tilapia (*Oreochromis niloticus*), the bony tongue (*Heterotis niloticus*), *Gymnarchus* (*Gymnarchus niloticus*), etc. It is important to note that the river and its ecology also serve as a transitional phase for many marine fish species: they spend part of their life cycle there to reproduce, feed or as nurse. The concerned

species include: shrimps, croakers, thread fins (locally known as the “kujali”), and other high value pelagic species such as the barracuda. The Gambian shrimp stock has its spawning grounds in the estuary/river. After hatching and metamorphosis to various larval stages in the river, the juvenile shrimp migrate upstream to shallow areas of the River Gambia for feeding and growth in the nutrient-rich mangrove areas. After three months, the adult shrimp migrate to the sea to spawn in the central - and deepest - part of the estuary.

The Gambia does not have the requisite financial, human, and technical resources to conduct scientific surveys on its own, but relies on assistance provided by international institutions and organizations, such as the FAO and the Norwegian Agency for Development Cooperation (NORAD). For several years, annual hydro-acoustic surveys of small pelagic fish stocks in The Gambia, Morocco and Senegal were conducted with assistance from the FAO and the Norwegian Institute of Marine Research (IMR). Estimates from these surveys are shown in Table 2. While relatively accurate information exists on the status of the pelagic fish stocks, very little information is available on the demersal fish stocks. The most comprehensive survey of the Gambian demersal fish resources was carried out by the Spanish Institute of Oceanography in 1986, which estimated the biomass at 43,645 tonnes. Biomass estimates of the demersal stock in 1995 were

Table 2. Biomass estimates of fisheries resources

Year	Biomass MT Demersals	Biomass MT Pelagics
1986	43,645	
1992	30,000	160,000
1995	22,000	156,000
1996	-	122,000
1997	-	113,000
1998	-	173,000
1999		510,000
2000		213,000
2001 Jun		217,000
2001 Nov		165,000
2002 Jun		470,000
2002 Nov		242,000
2003 Jun		62,000
2003 Nov		285,000
2004 Nov		212,700
2005 Nov		284,000

Source: Reproduced from Mendy, 2009.

obtained from a partial survey of demersal stocks, conducted during a survey focused on pelagic fish species.

Concerns have been expressed over the excessive exploitation of marine fish species. The results of limited surveys and assessments over recent years indi-

cate that the major marine fish stocks are over-fished or fully-exploited (Table 3). In particular, the most commercially important demersal species appear to be under threat from high levels of exploitation (Mendy, 2009; Tobey et al, 2009).

Table 3. Status of main stocks

Species	Status	Year of assessment	Reference
<b>Small pelagics</b>			
<i>Sardinella aurita</i> /NW Africa	O	2008	FAO SPWG NWA (2008)
<i>Sardinella maderensis</i>	NA	2008	FAO SPWG NWA (2008)
<i>Ethmalosa fimbriata</i>	NA	2008	FAO SPWG NWA (2008)
<i>Scomber japonicas</i>	O	2008	FAO SPWG NWA (2008)
<i>Trachurus trecae</i>	F	2008	FAO SPWG NWA (2008)
<i>Caranx ronchus</i>	O	2008	FAO SPWG NWA (2008)
<b>Demersal species</b>			
<i>Pagellus belottii</i>	O	2007	FAO/CECAF DWG (2008)
<i>Arius</i> spp	O	2007	FAO/CECAF DWG (2008)
<i>Pseudotolithus</i> spp.	F	2007	FAO/CECAF DWG (2008)
<i>Epinephelus aeneus</i>	O	2007	FAO/CECAF DWG (2008)
<i>Penaeus notialis</i>	F	2007	FAO/CECAF DWG (2008)
<i>Octopus vulgaris</i>	O	2007	FAO/CECAF DWG (2008)

Source: Mendy, 2009 based on reports of the FAO Working Group on the Assessment of Small pelagic fish off Northwest Africa (FAO SPWG NWA) and of the FAO/CECAF Working Group on the Assessment of Demersal Resources (FAO/CECAF DWG). Note: O – over-exploited; F – fully exploited; NA – inconclusive assessment.

## 2.2 THE STRUCTURE OF THE FISHERIES SECTOR

The Gambia's fisheries sector consists of two subsectors: the artisanal fisheries sub-sector and the industrial sub-sector.

### 2.2.1 Artisanal fisheries

The artisanal fisheries consist of relatively extensive, low-capital fishing practices. This sub-sector refers to those fishermen and women (both nationals and foreigners) operating in small units of a few fishermen - or on individual basis - employing little equipment and technology. It also includes the women oyster and cockle harvesters who generally operate within the estuarine areas. Essentially, the craft employed in this subsector are planked and/or dug-out canoes. The sub-sector is highly diversified, covering marine (coastal), brackish (through the estuary waters of the river Gambia) and freshwater (upstream along the river) fishing operations.

In spite of the small-scale nature of its operation, the artisanal sector provides 90 percent of the total national fish consumption, and is the main source of raw material for the industrial sector. Artisanal fisheries also supply about 80 percent of throughput in the industrial fisheries processing plants. The bonga, round and flat sardinella - and other small pelagics - are the main species landed by the artisanal fishermen. These species are mainly consumed locally in fresh or traditionally processed (smoked or dried) product form, or exported regionally. The high-value commercial species the sector produces (shrimps, sole fish, sea breams, lobsters and cephalopods) are mostly supplied to fish processing factories for export: mainly to the EU, North America, and Asia.

The sub-sector has witnessed a huge expansion in the number of fishing economic units (FEU) operating on the coast and along the river banks and estuaries: from 1,299 canoes in 1983 to 1,969 canoes in 1997. However, a decline in the 1997 total was recorded in the 2006 frame survey, which indicated a fleet of

1,785 canoes operating in both the marine area and along the river Gambia.

As shown in Table 4 below, the sub-sector provides direct employment to 6,104 fishermen (1,410 head fishermen and 4,694 assistant fishermen). Out of the 1,410 head fishermen, 805 (57 percent) are Gambians and 605 (43 percent) foreigners. However, foreign fishermen (mainly Senegalese) form the majority along the Atlantic coast, which is the most productive area. Of the 416 head fishermen operating in the coastal area, 249 (60 percent) are foreign nationals, compared to 167 (40 percent) Gambians. In addition to fishermen, fisheries sector participants include: boat builders, fish processors, fish traders, fish retailers and wholesale buyers. It is estimated that the artisanal fisheries sub-sector provides direct and indirect employment to 25-30,000 people. More broadly, the livelihoods of an estimated 200,000 people are dependent on fisheries and related activities (Mendy, 2003). Women play a very active role in the artisanal fisheries sector, accounting for about 80 percent of fish processors and

50 percent of small-scale fish traders (African Development Bank/GAFDP).

#### *The Oyster and Cockle Fisheries – Structure and Production*

The bivalve industry consists mainly of oyster and cockle harvesting, currently done on a subsistence/artisanal level. These fisheries are an important for the livelihoods of people resident particularly in: Tanbi National Park; the Allahein “Bolong” in Kartong; and the north bank villages of Tambana and Bakang, and Kemoto in the Lower River Region. Harvesters - the majority of whom are women - mainly belong to the Jola, Balanto and Manjago ethnic groups. The harvesting season lasts from March through June for oysters, and from July to November for cockles. The development of the oyster and cockle fisheries has been a stated priority for the Government since the 1980's, but little has been done to manage them or provide technical support to help develop them, until recently. Information on these fisheries is limited. The total number of people involved in the oyster and cockle fishery

Table 4. Comparison of the 1997 and 2006 Fishery Frame Surveys

	1997	2006	Percentage change from 1997
<b>Head Fishermen</b>	1,969	1,410	-28.4
Gambian	1,238	805	-35.0
Non Gambian	731	605	-17.2
<b>Assistant Fishermen</b>	4,067	4,694	15.4
Gambian	1,985	2,291	15.4
Non Gambian	2,082	2,403	15.4
<b>Total Fishermen</b>	6,036	6,104	1.1
Gambian	3,223	3,096	-3.9
Non Gambian	2,813	3,008	6.9
<b>Type of Canoes</b>			
Non-motorized Canoes	1,243	1,082	-13.0
Gambian	888	700	-21.1
Non Gambian	357	382	7.0
Motorized Canoes	542	625	15.3
Gambian	306	325	6.2
Non Gambian	236	300	27.1
<b>Fishing Gear Used</b>			
Encircling Net	279	295	5.7
Gill Net	1,050	1,066	1.5
Long Line	158	177	12.0
Head Line	138	169	22.5
Drift Net	165	344	108.5

Source: GOTG, 2006 Fishery Frame Survey Report.

sectors countrywide is not known. Data on oyster and other shellfish production is unavailable because it has not been part of the countrywide frame survey design and data collection effort of the Fisheries Department. However, limited surveys have been conducted on the oyster fisheries in the Tanbi National Park, and it was estimated that there are about 500 oyster harvesters - predominantly women - and that hundreds more could be involved in related activities, including the production of white lime from oyster shells (Njie and Drammeh, 2011).

The oyster harvesters use non-motorized simple dug-out canoes (3-4 meters in length), capable of carrying 1 or 2 women who paddle from their bases to the harvesting sites. There are times when they do not use canoes (because they cannot afford them), and they walk on foot or wade into knee-deep waters to get at the exposed oysters. Harvesting is only possible during the six hours of diurnal low tide when the oysters - attached to the prop roots of the mangroves - are exposed, and the women can reach them using either a cutlass or a small axe. Using the axe, the women select the oysters one by one, removing the mature ones and leaving the small ones to grow; whilst with the cutlass they peel the oyster from the roots of the mangrove, scraping the bark of the roots and usually leaving a scar on the roots. The oysters are gathered in the canoes or carried back to the bases on their heads -in bags or baskets - before the high tide sets in (GOTG, Ministry of Fisheries Water Resources and National Assembly Matters, 2011).

Hacking or chopping off the oysters from the roots can be destructive. When the roots are chopped off, and the available settling space for the next generation of spats (baby oysters) is reduced, this can in turn lead to fewer oysters, and thus a reduced oyster population and potentially reduced harvests for the women.

Cockles are also harvested by the same women during low tide, either using canoes taken to the harvesting sites or by walking on foot. Unlike oyster harvesting, in cockle harvesting the women anchor the boat and disembark to scrape the sand with their fingers or with spoons to get at the cockles (spoons are still used, although there is the superstitious belief that the cockles will disappear from high yield beds due to their use).

Oyster processing is done by the same women who harvest them from the wild, and involves steaming or boiling because it is effective and consumes fewer resources (firewood, water and time). The process be-

gins with the removal of foreign matter from the harvested oyster; the oysters are then steamed in pans/drums for 30 minutes to one hour, during which the shells will gape, and the muscles soften up to ease shucking and extraction of the meat.

Another technique is to roast the oyster over fire on metal grills - a practice which is now rare: the oysters soon gape, and the meat is extracted with knives and collected in woven baskets. The oysters are then marketed, often after having been washed clean, or even reheated at some sites. In some other places in the country, the meat is preserved by salting and sun drying to very low moisture content, before the oysters are marketed.

The oyster shells, meanwhile, are gathered in heaps and sold for cash to people involved in: the production of white lime, brick-making, the preparation of chicken feed or the horticulture industry (where it is used as soil conditioner and fertilizer).

Cockles are processed by boiling/steaming - as with oysters - to open the shell and to loosen the meat from the shell. After steaming, the meat is sieved with perforated trays or shaken and separated by gravity, after which the meat falls to the bottom and the shells are gently scooped off the top. The meat is then placed in baskets and washed many times in sea water. The water is then allowed to drain and the product is re-cooked before marketing. In some instances, the product is salted and sun-dried to reduce moisture content before storage and subsequent marketing, similar to what is done with oysters.

Cockle and oyster marketing is done by the same women who harvest and process them. However, it is not uncommon to find younger women (daughters or harvesters' family members) selling cockles and oysters along the highway to and from the city of Banjul. The products are marketed in diverse places, including the processing site and urban market places and along roadsides -while some producers carry the products on their head and sell from house to house in neighbourhoods. Dried oysters and cockles are sold at the weekly market days ("loumo") in rural communities, which move from village to village on a daily basis. They are sold by a measure of empty milk tin, which contains about 150 grams of oyster or cockle meat at GMD 15 (50 US cents). However, the large, hand-picked grade of processed oysters fetches a higher price (GMD 20 for 150 grams). The price of fresh cockles is GMD 5.00, and dried cockles are sold at GMD 10.00.

Buyers and consumers include: individual consumers who buy for home consumption, street food vendors, restaurant operators and exporters. Currently, limited quantities of oysters enter international trade. The oysters are exported by individuals who normally carry a few kilos with them as gifts to relatives, or sell them informally to niche markets which-mainly form part of the Gambian Diaspora -in the EU and the USA. The product may also be taken for use in special ceremonial occasions of Gambians living abroad. Hence, exports are classed as traditional ethnic foods of value.

However, it must be noted that there are certain concerns that need to be addressed if the formal export markets are to be targeted. In particular, there are stringent sanitary requirements to be met for a raw or fresh shell fish product to be formally exported, particularly to the European and North American markets.

### 2.2.2 The Industrial Sector

Unlike the artisanal sector, industrial fisheries and fish-processing activities involve use of high-cost fish-production systems (fish trawlers), as well as high-cost processing systems (fish factories), and are concentrated along the Atlantic coastline.

As at mid-2012, there were 20 locally registered fishing companies operating in The Gambia, but only 10 companies had managed to invest in on-shore facilities (fish factories). Five of these (Bara Fishing, Kendaka, Rosamond Trade, International Pelican, and West Africa Aquaculture) had met the required standards and been certified to process and export fresh and frozen fish products to the EU. Only one factory (Rosamond Trade) was certified to export cured (smoked) fish products to the EU. The remaining had not yet met the EU regulations on fish-processing establishments.

Exports to the EU essentially consist of fresh and frozen fish, particularly of high-value commercial species (crustacean, cephalopods, sole fish, etc.). Specialized smoked fish products (all traded through the only certified establishment) essentially serve the Gambian Diaspora market in the EU (the UK, Netherlands, Spain, and Belgium) and the USA (Box 1). Export figures and values of exports to the Diaspora in Europe, the USA and Canada are shown in Table 7.

The development of industrial fisheries has been relatively limited in The Gambia. Industrial fisheries account for as little as 10 percent of the total national fish consumption, and for only an estimated 20 percent of the locally processed fish. This is due to the fact that

over 90 percent of the fishing vessels legally operating in Gambian waters are foreign-owned, and land their catches abroad. They usually make contractual arrangements with Gambian fishing companies in order to satisfy national licensing conditions, or operate by virtue of fishing access agreements with The Gambia - for example, the Senegalo-Gambian Reciprocal Fishing Agreement. They also operate under bilateral agreements with Japan, the Republic of Korea, and the EU (under the now-expired EU/Gambia Fishing Agreement). Most of these trawlers land their catches in Senegal, or process them out at sea and export to Spain, Greece, South Korea, etc. Although foreign trawlers are required to land 10 percent of their catches in The Gambia (a licensing requirement), sometimes – for lack of handling space in the existing Gambian factories - they land the bulk of the fish in overseas ports after paying the value of the 10 percent to the Gambian government. Industrial catches landed in foreign ports for processing and further value-addition are exported, not as products of Gambia but as products of those countries where the catches have been landed. This deprives the country of foreign exchange, employment-generation opportunities, and reduces the availability of fish for local consumption and local industrial processing.

This situation is due, among other things, to the absence of a dedicated modern fisheries port and related ancillary facilities -which has had considerable negative impact on the development of industrial fisheries and the economy in general. This is coupled with other constraints, such as: lack of storage facilities, financial constraints, the high cost of energy, and poor management -resulting in some of the fish factories going bankrupt.

The major contribution of the sub-sector lies in its foreign exchange earning potentials, and its employment-generating capacity. For example, licensing requires that 20 percent of the crew of a fishing vessel licensed to operate in Gambian waters must be Gambian; this is aimed at building up the proportions and capacities of Gambian youths in fishing operations. It is estimated that about 2,000 people are presently employed in the industrial sub-sector, of which an estimated 70 percent are women. The female share of employment is significantly higher in the packaging/processing nodes, where virtually all workers are women, with the notable exception of fileters (Fisheries Department).

### 2.3 THE FISH SUPPLY CHAIN

The supply chain for fish and fishery products (see Figure 1) is rather complex in The Gambia because of:

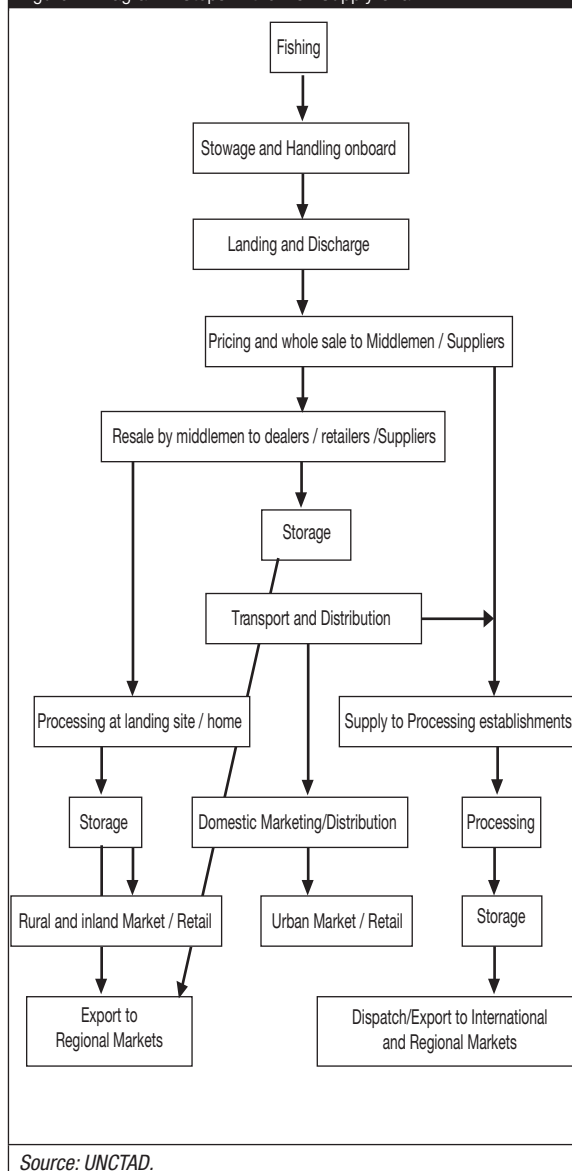
- i) The range of different markets served (urban, inland, sub-regional, international - EU and USA, including the Diaspora niche);
- ii) The assortment of species (small pelagics and high-value demersal species) and products offered (fresh and frozen fish, cured products, by-products), each serving different market outlets;
- iii) The large number of different operators (fishermen, fish traders/dealers, artisanal processors, industrial processors, specialized exporters, etc.) and modes (small-scale and large-scale trade).

At the landing sites (11 coastal landing sites), the fish is typically bought from artisanal fishermen by relatively large-scale fresh fish dealers, who tend to be men. The dealers (“banabana”) then sell on to smaller intermediaries for distribution in urban or inland markets, or to processing establishments. In certain cases, the fisherman is related to the “banabana” - or if not related, has invested in the boat, or often provides some form of assistance to the fisherman - and thus holds the fisherman in bondage. At some landing sites, women may be the intermediary between fishermen and traders/processors, particularly as regards certain fish species processed and traded by women (e.g., cat fish and spoiled white fish for the production of salted and dried products). These women are sometimes the fishermen’s wives and take over the task of marketing their husbands’ catches to other women and men traders and processors.

About 40 percent of fish landed in The Gambia is marketed fresh within the coastal areas and in some of the major growth centres in the rural districts (white fish is mainly supplied to urban markets and consumers, as well as hotels, restaurants and other catering houses; bonga to both urban and rural markets). As fish is the predominant source of protein in The Gambia, and fish marketing and distribution in country contributes greatly to food and nutrition security, distribution of fish from riparian coastal areas to inland communities is very important. However, this aspect of the sector is relatively under-developed, and requires improvements in the handling, transportation, and storage of products.

An estimated 30 percent of landed fish is traditionally processed (dried and/or smoked) and marketed

Figure 1. Diagram - Steps in the Fish Supply Chain



within the country (especially in the inland markets); part of this is then exported to neighbouring West African countries. However, the processing techniques and facilities leave much to be desired.

The rest of the fish (mainly high value demersal species) is supplied to industrial fish processing companies for export processing.

To add to this complexity, men and women tend to produce rather distinctive products, operate on different scales and serve different markets. This results in rather specific gender-based trade patterns through the chain, as discussed below.

### Box 1. Women in the Fisheries Sector

Women in The Gambia play a very active role in the fisheries sector: about 80 percent of fish processors and 50 percent of small-scale fish traders are women. They are engaged in both fresh fish marketing and distribution, and in the processing and distribution of cured fish products. Also, women tend to dominate the Diaspora trade.

#### **Fresh fish marketing and distribution**

In the fresh fish trade women tend to be small-scale dealers. They mainly buy a few trays of fish (typically bonga, but also white fish) from large-scale mongers and transport it to various urban markets where the fish is retailed. They sometimes collectively hire a commercial vehicle to transport the fish to the urban markets, or use local taxis.

Large-scale dealers are mainly men: they often buy big quantities (e.g., one or more canoes of fish). Some large-scale specialist fish dealers (usually men) export the fish to Senegal - or to Ghana, Guinea Conakry, Nigeria, etc. - in smoked or dried forms. Processing factories also procure their supply from large-scale (men) fish suppliers. Local hotels and restaurants are also mainly supplied by this category of dealers. However, within this group of suppliers a few women are quite often very active as they too enter into contracts with the hotels and restaurants, especially during the tourist season (October –April). This trade offers the women involved substantially bigger returns than those available to the small-scale processor who takes her produce to the market every morning. This category of women traders usually require a bit more working capital and better cash flows because the hotels and restaurants usually do not pay on receipt of produce -the women are paid fortnightly, or monthly. Thus, extending a credit line to this category of women traders will help them expand their business and increase their income, which could get them out of poverty. In addition, these women will require training in various aspects of the fish value chain, small business management, and other important and relevant skills.

The fish is unloaded from the canoes by carriers (who used to be predominantly women, but are increasingly being replaced by men), paid in kind (3-4 pieces of bonga per pan carried), and loaded onto refrigerated trucks or pick-up vans for distribution to inland markets. Typically these men come from Mali, and are willing to do any odd job, including unloading and carrying fish on wheel barrows from the canoes to the waiting trucks. Evidently, the wheel barrows carry more fish than the usual head pans the women use. Even though the women try their best to cope, they are outmatched because the men are quicker and stronger and their wheel barrows carry more fish per trip. Very soon, the canoe load of fish is emptied and the truck is on its way, of course to the satisfaction of the trader. Clearly, if this trend continues very soon the women will be pushed out of the business of unloading the canoes and this essentially means they will lose an important source of their daily fish acquisition. This further means that their daily revenues will drop because they will have fewer fish to sell and to take home for their families' consumption.

#### **Cured fish distribution and marketing**

The artisanal fish processing sub-sector is constituted of small family or women-owned business enterprises with rudimentary processing technologies, often located close to the beaches or areas of towns around the landing sites. Cured fish products are mainly sundried and/or salted and smoked.

Fish dryers tend to be women. They produce salted sun-dried fish for urban and inland markets, or for regional export dealers. The same women who process the fish often market it (small-scale traders).

The women lay the split fish on raised platforms made from sticks and poles where the fish dries out under the sun over a period of 5-7 days. Often, it is contaminated with dust, and is assailed and infested with blow flies and maggots. This leads to a shorter shelf life and to losses due to maggot infestation. Transportation to market centres is usually done by means of commercial vehicles: at this stage too a good part of the product could be lost due to spoilage, and this of course means financial loss for the processor.

Smokers are both men and women. It should be observed, in this respect, that the smoked fish market is complexly branched within, and that men and women tend to operate in different market segments. In particular, a distinction is to be drawn between smoked-dry products with lower moisture content and longer shelf life (3-9 months depending on storage conditions), and hot-smoked fish, typically with higher moisture content and



**Box 1 (contd.)**

shorter shelf life (1-3 days). The choice of whether fish will be hot-smoked or smoked-dry depends on a number of factors, including: the type of fish; the desired shelf life of the smoked product; and available technology.

Male fish smokers tend to operate in the long-distance trade of smoked-dry products with longer shelf lives. Their operations are more capital intensive and their products are marketed to the inland and sub-regional markets, where the profit margins are higher.

Women smokers are mainly involved in the domestic marketing of hot-smoked products. They generally produce smoked fish (mainly bonga and catfish), of relatively short shelf life meant for urban and inland markets. Their operations are often labour-intensive and characterized by small-scale direct marketing (on a daily basis) and low profit margins. Women usually smoke the small pelagic bonga and the catfish, over open fires in pans covered with jute bags. Because of the high cost of fuel wood, the women use cartons, coconut husks, groundnut shells, or any material to smoke the fish. Smoking lasts for two to four hours, after which the fish is laid out to cool before being packed in woven baskets to be taken to market the following morning. Unlike the fish smoked by the men, this product soon deteriorates if not cooled: because the moisture content is still high, spoilage can easily occur if the product does not sell fast enough.

For both (men and women), curing processes are tedious, time consuming, and unhygienic. Because of the inefficient smoking process the products are easily lost due to spoilage - particularly during prolonged transportation and storage.

**The Diaspora Trade**

The trade of smoked fish products within the larger Diaspora trade to the EU (mainly the UK and Netherlands) and to the USA is - currently - virtually a women-led business, although a few men exporters are also involved. It is small-scale, and is the principal export trade for women in fisheries in The Gambia. It involves a wide range of fish species - with products such as smoked catfish, shrimps, sole fish, bonga, sardinella, croakers, and barracuda - and is a trade dominated by smoked products. Between 2004 and 2010, these exports constituted 3-18 percent of all fish exports from The Gambia (Table 7 and Figure 4).

As at July 2012, the women operated through Rosamond Trade, the only processing facility in the country certified to export cured fish to the EU. They especially supplied the niche Diaspora market of Gambians - but also the African Diaspora (including from the Caribbean) - living in: the EU (UK and Netherlands mainly), the USA, Canada, and Africa. With a permanent staff of 13 (6 women and 7 men) the processing facility was rented by a group of women (6 women at the time of the visit) on a monthly basis, and the women's fresh fish was smoked by the staff of the facility - their individual quota of fresh fish ranging between 500 kg - 5000kg. The processed fish was stored until such time as the women had enough products to export, then it was loaded onto a 20 or 40 foot reefer container for shipment. Each woman acquired her shipping documents and other forms of certification for her consignment before travelling by plane to the UK, the Netherlands, etc. There she awaited the arrival of the container at the UK port. Upon arrival of the shipment, each woman collected her consignment, usually addressed to herself or to a UK-based business partner. Then the woman could either retail her fish by herself, or sell to a wholesaler -after which she returned to Banjul to load another container.

This trade needs to be formalized in order to enable the women to develop and expand their production from the current small-scale operations of 200-500 kgs. per woman. In addition, the women involved need training in hygiene, and in the handling and marketing of fish products, in order to improve quality and address food safety concerns. They also need capacity-building in relation to EU market requirements.

Another system of regional niche marketing involves both men and women, some of who travel from the countries of export destination to process the products in Gambia. In this case, it is worth noting, gender interacts with nationality and ethnicity: Senegalese, Ghanaians, Guineans and Malians travel to The Gambia - or reside in the country - and organize the export trade towards their country of origin.

*Source: Field observation and semi-structured interviews (refer to Annex 1) and literature review (Njai, 2000 and Njie, 2002)*

## 2.4 PRODUCTION TRENDS

The total fish landed from both the artisanal and industrial sub-sectors was estimated at nearly 50,000 tonnes in 2010 (Fisheries Department). The artisanal fisheries sub-sector contributed approximately 46,000 tonnes (92 percent) to this total, with about 4,000 tonnes (8 percent) from the industrial fisheries. Overall, the nominal output of the industrial fisheries sector has, by and large, remained low over the years, whilst catches from the artisanal fisheries have been on the increase (Table 5 and Figure 2). In 2002, industrial production was 12,000 tonnes, but declined to

Table 5. Industrial and artisanal fish production (MT), 1997-2010

Year	Industrial	Artisanal	Total
1997	7,988	30,243	38,231
1998	7,012	26,533	33,545
1999	10,249	29,743	39,993
2000	9,237	26,867	36,104
2001	11,198	32,016	43,214
2002	12,160	32,336	44,496
2003	11,005	34,365	45,370
2004	8,375	29,317	37,692
2005	4,600	30,169	34,769
2006	2,830	36,898	39,728
2007	4,000	43,007	47,000
2008	2,973	42,841	45,814
2009	3,179	45,881	49,060
2010	4,001	45,910	49,911

Source: Data provided by the Department of Fisheries, GOTG

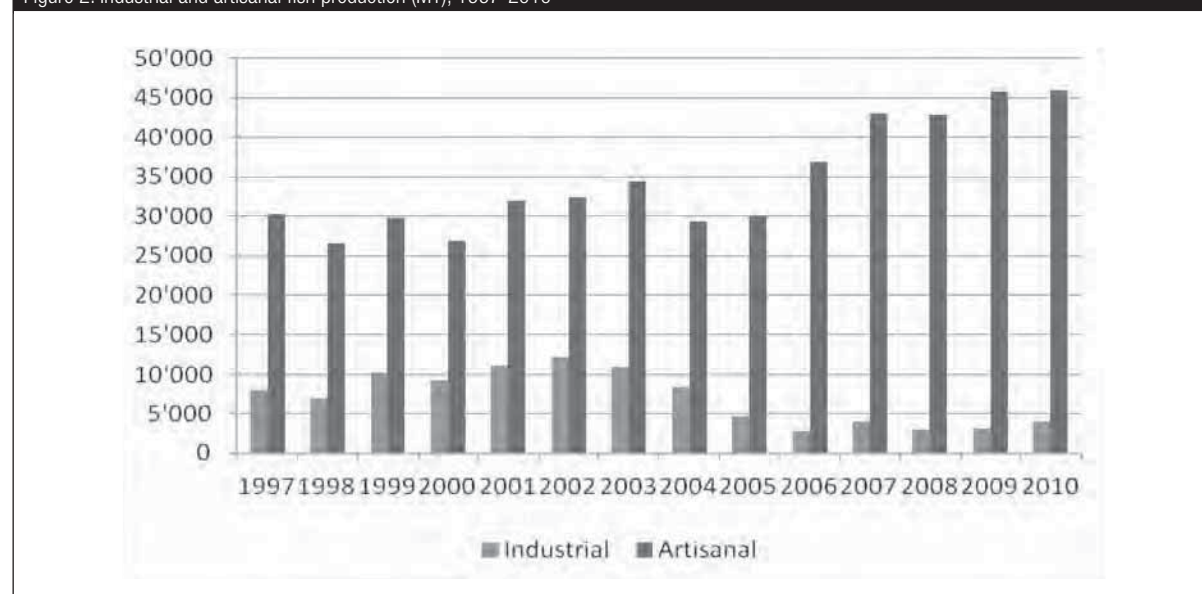
4,000 tonnes in 2007; whilst landings from the artisanal sub-sector increased from 32,000 tonnes in 2002 to 46,000 tonnes in 2010. It should be noted that these figures do not capture the largest proportion of industrial catch caught in Gambian waters, which is not landed in The Gambia but in foreign ports.

## 2.5 EXPORT OF FISH AND FISHERY PRODUCTS

Export figures for fish and fishery products are shown in Table 6. Exports totalled 932 metric tonnes in 2002 and 3,563 tonnes in 2010, which mostly reflects increases in production by the artisanal sub-sector. This has mainly been due to the fact that the fisheries sector - especially the industrial subsector - has lacked inflows and investments to allow for its optimal operation. The value of fish exports from The Gambia is believed to be severely underestimated, as most fish caught in Gambian waters is landed in foreign countries, and hence not accounted for in Gambian trade statistics.

The EU is the main export destination for fishery products. Trade requirements for this market are stringent, and production systems and products must comply with equivalent regulations on hygiene, food safety, consumer protection and official control requirements. It should be noted that exports to the EU were suspended for four months (October 2010 to February 2011), following detected deficiencies in the system of official control of fishery products, but have since resumed: four out of five establishments approved to export to the EU are fully operational and continue to

Figure 2. Industrial and artisanal fish production (MT), 1997-2010



Source: Data provided by the Department of Fisheries, GOTG.

**Table 6. Exports of fish and fishery products, 1997-2010**

Year	Quantity (MT)	Value (GMD)
1997	2,063	44,427,355
1998	1,666	33,293,225
1999	1,677	36,563,649
2000	901	32,779,477
2001	949	35,726,199
2002	932	21,334,062
2003	445	11,629,895
2004	405	7,694,241
2005	751	9,956,837
2006	625	2,287,733
2007	1,480	67,432,811
2008	1,363	47,847,297
2009	2,087	64,919,036
2010	3,563	100,041,068

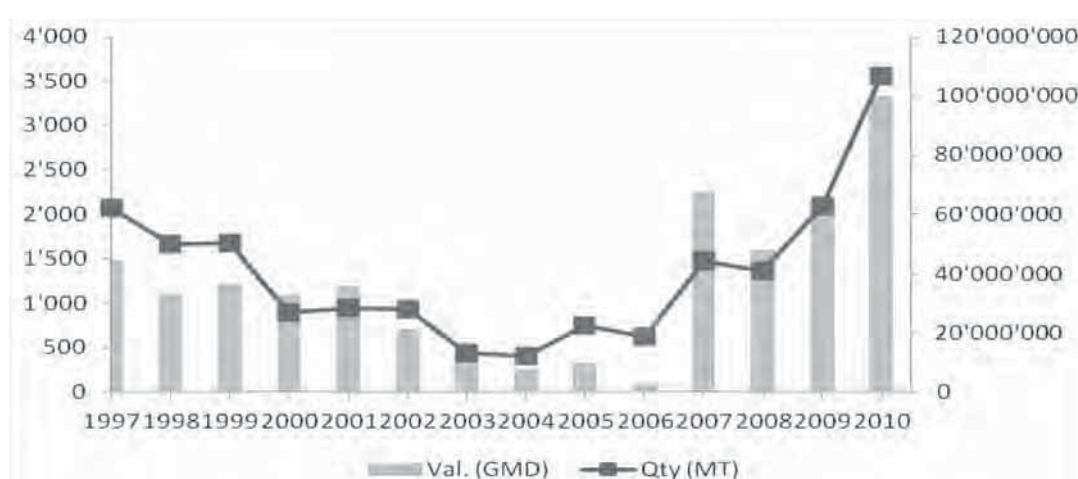
Source: Department of Fisheries, GOTG. US\$ 1=GMD30

export a variety of fresh, frozen and smoked products. The fifth one is a shrimp aquaculture establishment which was delisted due to non-submission of a national residue control plan for aquaculture in 2010. The residue control plan was submitted in 2011/2012 and approved by the EU. Hence, the establishment is being relisted for export of aquaculture products to the EU.

**2.6 IMPORTANCE OF THE FISHERIES SECTOR TO THE NATIONAL ECONOMY**

The Gambian Government continues to give high priority to the development of the fisheries sector as it is a source of revenue and foreign exchange earnings for the country, but also a source of hope for increasing employment opportunities -particularly for women who are those mainly involved in fish processing and marketing. The sector is also contributing to the improvement of the nutritional dietary in-take of the

**Figure 3. Exports of fish and fishery products, 1997-2010**



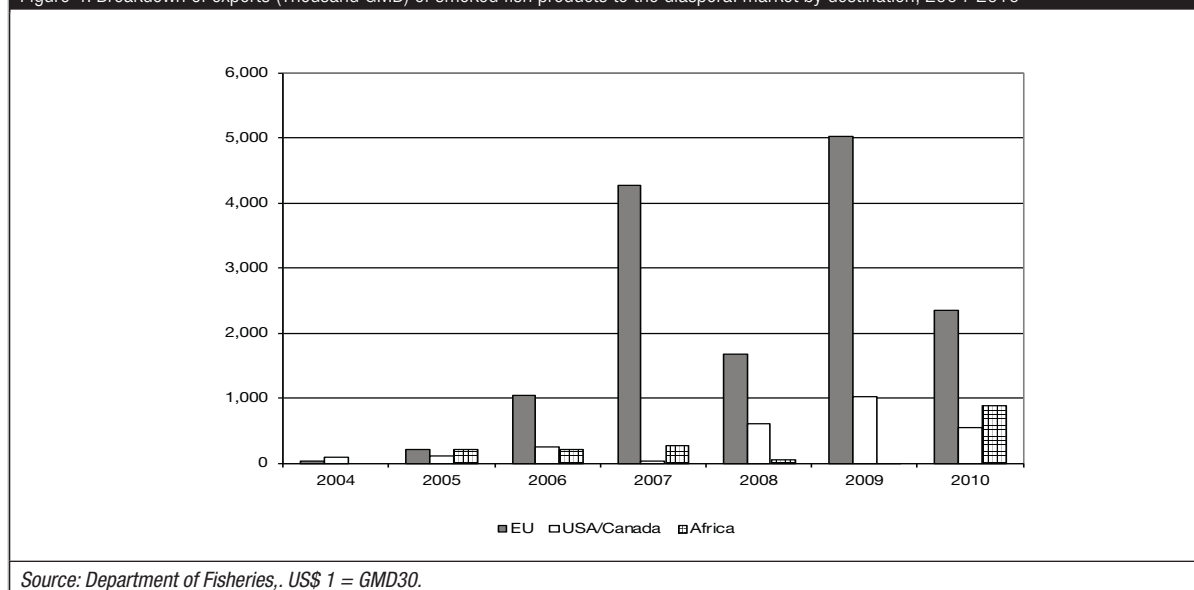
Source: Department of Fisheries, GOTG.

**Table 7. Export of smoked fish products to the diaspora market, by destination, 2004-2010**

Year	Total Qty (kg)	Value (GMD)	Destination					
			EU		USA/Canada		Africa	
			Qty (kg)	Value (GMD)	Qty (kg)	Value (GMD)	Qty (kg)	Value (GMD)
2004	18,194.2	131,233.6	4,684.6	35,283.8	13,509.6	95,949.8	-	-
2005	143,994.5	521,742.1	21,911.0	202,622.1	14,122.5	102,687.0	107,961.0	216,433.0
2006	114,946.5	1,483,317.6	61,098.0	1,029,963.5	19,595.5	252,546.6	34,253.0	200,807.5
2007	159,464.0	4,554,958.5	140,564.0	4,266,233.5	1,000.0	25,000.0	17,900.0	263,725.0
2008	188,390.5	2,325,935.9	175,350.7	1,671,141.4	11,572.8	612,627.1	1,467.0	42,167.4
2009	187,849.8	6,052,783.0	156,166.7	5,022,861.9	29,200.5	1,026,640.7	2,482.6	3,280.4
2010	123,349.1	3,777,171.4	79,028.7	2,353,325.2	14,564.4	541,514.3	29,756.0	882,332.0

Source: Department of Fisheries, 2011, US\$ 1 = GMD30

Figure 4. Breakdown of exports (Thousand GMD) of smoked fish products to the diaspora: market by destination, 2004-2010



citizenry, thus helping ensure the alleviation of poverty and the existence of adequate food security.

It is difficult to gauge the sector's contribution to GDP, given the informal and unrecorded nature of artisanal fishing and artisanal processing activities in The Gambia. According to official figures from the Fisheries Department, the sector contributed about 3.4 percent of GDP in 2010. Other less conservative estimates from the same Department situate the fisheries GDP share at about 8 percent or even more. However, a much more conservative figure of 1.8 percent (2010) is reported by The Gambia Bureau of Statistics (GBOS).

Though small in absolute terms, fish exports are significant for the economy. In 2007, fish and fish products accounted for about 15 percent of merchandise export earnings (excluding re-exports) (Department of Fisheries). The bulk (about 80 percent) of the exports is sent to the EU (fresh and frozen fish).

The fisheries sector's contribution to government revenues is relatively small: fishing licenses and registration fees account for as low as 0.1 percent of total government revenue, according to Gambia's 2012 budget estimates. Although the contribution of the sector is small, great importance is attached to its development because of its huge potential to make a significant contribution to national socio-economic development. In particular, the sector is the third largest food production sector - after agriculture and livestock - and plays a significant role from a nutritional standpoint, as fish is the main source of animal protein in the diets of most Gambians. The estimated per capita fish con-

sumption is 25 kg along the coast, with the average dropping to 9 kg as one moves away from the coast. Also, as discussed, the artisanal subsector provides direct and indirect employment to between 25,000 and 30,000 people; and about 2,000 people are presently employed in the industrial sub-sector.

## 2.7 KEY ELEMENTS OF THE POLICY ENVIRONMENT

Following the identification of a number of constraints (institutional, technical, economic, social, and physical) impeding the sustainable management and development of the fisheries sector, the Gambian government adopted a new Fisheries policy in 2007. This policy aims to address these constraints in order to contribute to the realization of the country's goals, as outlined in the main national development policy blueprint - "Vision 2020". The review process prior to the adoption of the new policy incorporated into it the principles of the Code of Conduct for Responsible Fisheries (CCRF), as well as other emerging trends in fisheries management.

The policy objectives include (among others): a rational and long-term utilization of the resources; the use of fish as a means to improve the nutritional standards of the population; increasing employment opportunities in the sector; increasing foreign exchange earnings; expanding the participation of Gambians in the sector; the development of aquaculture; and strengthening regional and international collaboration in the management and sustainable exploitation of shared stocks.

To implement these policy objectives the Government developed the Fisheries Strategic Action Plan (2012 – 2015). Implementation of the plan is progressing, albeit with constraints due to (among other reasons): inadequate skilled manpower; inadequate scientific information and data for informed decision-making; poor infrastructure; limited control over the resources; low product quality management; a low level of aquaculture development; a low level of regional trade in fish and fishery products; and inadequate investment in the sector.

It should be noted that the Fisheries Policy is being implemented within the context of the overall framework of the Agriculture and Natural Resources (ANR) Policy -which encompasses the water and other natural resource sectors (forestry, livestock, parks and wildlife, and the environment). Each of these natural resource sectors is implementing its own policy. This essentially means that harmonization and coordination of these various interrelated policies must be achieved to enhance coherence and complementarities in their implementation. In this regard, and to address conflicts and inter-sectoral policy inconsistencies, the ANR Working Group (ANRWG) was established. This Working Group is co-chaired by the Permanent Secretaries of the Ministries of: Agriculture, Forestry and the Environment; and Fisheries and Water Resources. The Working Group thus serves as a clearing house mechanism and a policy conflict resolution forum, where planned sectoral policies are reviewed and harmonized in order to avoid duplications, conflicts and redundancies in their implementation.

The implementation of the Fisheries Policy presents major challenges. Coordination and consensus-building - especially with other entities outside the ANR sector - is challenging. Very often, conflicting interpretations and low level commitment to the principles of the policy from partner institutions lead to ineffective implementation from their side, and thus the required outcome is not achieved. Furthermore, there is often resistance to harmonizing policies, strategies and programs of other partner institutions with the Fisheries Policy. Finally, achieving sustainable growth and development of the fisheries sector - as envisaged in the policy - has so far been elusive due to the constraints listed above. Thus, several policy goals are far from achieved, so far. These include: increasing fisheries production, the promotion of aquaculture to meet local demand for fish protein, and the satisfaction of demand for fishery products in international markets.

An important element of the Fisheries Policy is the need for collaboration with international, regional and national organizations to address the numerous problems (often trans-boundary and global in nature) of conservation and protection of the aquatic environment. In this regard, the Government has placed strong emphasis on international cooperation within the context of the various multilateral and bilateral agreements and processes to which The Gambia is a party, such as: the Sub-regional Fisheries Commission (SRFC)<sup>1</sup>, The Gambia River Basin Development Organisation (OMVG - French acronym), the Regional Coastal and Marine Conservation Program for West Africa (PRCM in French)<sup>2</sup>, the FAO Fishery Committee for the Eastern Central Atlantic (CECAF), the Canary Current Large Marine Ecosystem (CCLME)<sup>3</sup>, and the World Bank/GEF funded West Africa Regional Fisheries Project<sup>4</sup>. Others include: the FAO Committee on Fisheries (COFI), the Economic Community of West African States (ECOWAS), and the World Trade Organization (WTO). At the bilateral level, regular monitoring and implementation of the national obligations occur within the respective cooperation framework, including the fisheries cooperation agreements with: Senegal, the Republic of Guinea, Guinea Bissau, and Mauritania.

In addition to the ANR sector policies, a number of other relevant national policies and strategies support and complement the Fisheries Policy. These include:

- i) The Gender and Women Empowerment Policy (2010-2020), which promotes the mainstreaming of women into development processes in all sectors, in order to enhance equal access to opportunities and achieve a gender balance in the economy and in Gambian society. It also promotes economic opportunities for women (e.g. employment creation), which is especially important as women constitute over 50 percent of the population;
- ii) The National Microfinance Strategy Framework Policy (DOSAF) -currently under review by the Ministry of Agriculture (MOA) -which aims to institutionalize a beneficiary-managed sustainable rural finance system to provide smallholders credit access at reasonable conditions;
- iii) The National Export Strategy (NES) provides the national framework for export development and promotion. The Strategy is intended to promote public-private partnerships, export competitive-

ness, and multiband bilateral protocols -notably ones developed with ECOWAS member countries.

The Fisheries Act (2007), and its attendant Fisheries Regulations (2008), serve as the legal basis for the management of the fisheries sector. The Act - whose provisions cover the artisanal, industrial and aquaculture sub-sectors - was first promulgated in the 1970s, and several amendments were made since then. These two pieces of legislation are under the purview of the Ministry of Fisheries and Water Resources, and practical implementation is the responsibility of the Director of Fisheries. The other important stakeholder and partner involved in its implementation is The Gambia Navy, responsible for the enforcement of licensing conditions. A Fishery Advisory Committee, and the Community Fisheries Centres (CFCs), are also part of the institutional structure for inclusive oversight of the sector and decentralized fisheries co-management (Tobey et al, 2009). Together, these different stakeholders interact to address the issue(s) at hand. The most common infringements committed by the industrial sector are: operating without an authorization to fish; incursion into prohibited areas; use of destructive fishing methods; and use of banned gear and mesh sizes. Thus, the industrial fishery is regulated through licensing, mesh size restrictions, delineation of fishing areas or zones, and surveillance. Table 8 summarizes the regulatory and management measures employed specifically for the industrial sector.

A major constraint used to be the policing of the country's EEZ by the Navy. Operational constraints included insufficient fuel to conduct surveillance exercises, and the relatively short range and endurance to stay out at sea for long periods of the navigational equipment employed in the surveillance efforts. This surveillance is important, as even just the continual presence of the patrol vessels at sea will deter incursions into wrong fishing zones by licensed vessels, and poaching by unlicensed vessels. Often the incursions of trawlers into wrong fishing zones – resulting in the destruction of the fishing gear and equipment of artisanal fishermen, and even in deaths of fishermen – are the source of conflicts between the industrial and artisanal fishing sectors. Clearly, this can lead to great economic and financial (and personal) losses for the artisanal fishermen. Where an offending licensed vessel has escaped from the scene of conflict - but has had its registration identified - the local agent of the vessel is called in to effect reparation. On the other hand, if the vessel is not licensed in Gambia and not in the records, the case is usually difficult to follow up for any reparation.

Table 8. Implementation of the Fisheries Act (2007) and Fisheries Regulations (2008)

Industrial Fishery Regulatory Management Measure	Description
Mesh size regulations on trawlers	Demersal fish species: 70 mm Pelagic fish species: 40 mm Shrimp: 50 mm Tuna seine nets: 40 mm Tuna gill nets: 60 mm
Licensing	The bilateral Agreement with Senegal has a limit on the total tonnage of fishing catch capacity. When the maximum allowable catch capacity for each fishery is reached, no other vessel can be registered.
Surveillance and Monitoring	Fish production is recorded by the Fisheries Observer Program (each vessel carries an observer) and industrial fishing vessels are monitored by the Gambia Navy.
Near shore fishing restriction	For the purposes of resource management, and to reduce conflict between the industrial and artisanal fishing fleets, the legal near-shore fishing limit for industrial vessels is less than 250 gross tons in the waters of The Gambia which are past 7 nautical miles. In January 2009, the allowable near-shore fishing limit for industrial boats (less than 250 tons) was extended from 7 to 12 nautical miles. This was amended to 9 miles in February 2009, when it was clear that none of the Senegalese boats would obey because the 12 nautical miles restriction would require costly new fishing technologies. The regulations prohibit vessels of gross tonnage over 250 tons from operating within a 12 nautical mile zone from the shoreline.

Source: Tobey et al, 2009.

However, with the advent of the AFDP and training of fisheries and Navy MCS staff, illegal fishing appears to have been significantly curbed. From 2000 to 2008, a steady decline in the number of vessels arrested was recorded - from about 12 per year to 1 or 2 per year - and this has been attributed to effective surveillance.

There are also restrictions on gear, mesh size and minimum fish size for the artisanal fishery sector; however artisanal fishermen are not restricted to the 9 nautical

mile limit, whereas as industrial trawlers are. In addition, there are no closed areas or seasons for artisanal fishery. The provision to impose fees on the canoe fishery, which existed in the older regulations, was not implemented because it was seen as too cumbersome and expenses associated with its implementation would have been more than revenue generated. There is a licensing fee provision for artisanal fisheries in the new Fisheries Regulations; however it is dependent on the size of boat, and on the gear/technology used. The more a boat can catch, and the higher the value of the fish, the greater the fee. On average, it will amount to about D 500 (about US\$ 16). The artisanal fishery also self-regulates with respect to: rule-making, arbitration and conflict resolution. Conflicts are rare among artisanal fishermen, and when they arise they are usually resolved in a mutually accorded fashion, or arbitrated with the help of a combination of village authorities and respected elderly fishermen.

The only reciprocal fisheries agreement which The Gambia currently has is with Senegal. This agreement has been in existence since 1982; and it covers areas such as fishing, joint research and training. It is reviewed every two years. Under its provisions, artisanal fishers can fish in either country, provided they abide by the laws of the country where they are fishing. For industrial fishing vessels there is a limit on the total

maximum tonnage of fishing catch capacity. However, since The Gambia does not have an industrial fleet, only Senegal benefits in this regard: all the catches are delivered to Senegal and the revenues from these exports are not reflected in the Gambian economy. Gambian-flagged vessels<sup>5</sup> are not registered under the Agreement; and like the Senegalese registered vessels, their entire catch is landed in other ports, mainly in Europe.

Artisanal fishermen operate in the following manner within the Agreement: there is no restriction to enter the fishery, but all catches in the respective waters of The Gambia and Senegal must be landed and sold in the country where they operate. This poses a problem for Gambian fish factories, because very often the catches of The Gambian-based Senegalese canoes are landed and sold in Senegal, especially when the price is better than that offered in The Gambia. This is particularly pertinent since foreign nationals - mainly Senegalese - dominate the most productive Atlantic Coast Stratum, with 249 Senegalese head fishermen as opposed to only 167 Gambians. This study could not ascertain the presence of Gambian artisanal operators in Senegal. However, it is apparent that - as with the industrial sector - the implementation of the Agreement is lopsided, grossly in favour of Senegal.

