ILLEGAL UNREPORTED UNREGULATED (IUU) FISHING IN WEST AFRICA (NIGERIA & GHANA)

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EXECUTIVE SUMMARY

West Africa's waters are endowed with one of the world's richest concentration of finfish, crustaceans and molluscs. In contrast, its coastal fishing communities are amongst the most impoverished and therefore vulnerable to IUU fishing by foreign fishing vessels. Reports indicate that fleets of trawlers, most of which are reported to be Chinese and Korean, spend weeks plundering the seas off the Atlantic Coast. They exploit the lax policing situation and land shrimp, lobster, and snapper (among other valuable species) worth over $10,000 per boat per day. IUU fish loss per boat per year is estimated to be up to $3,000,000 in the West Africa sub-region.

In Nigeria, the fisheries resources poached within territorial waters include shrimps, tuna, and sharks, among others. The estimated value of catches exploited by IUU fishing is enormous, up to 30 million US dollars per annum. It is unfortunate that illegal fishing activities, particularly those committed by foreign private fishing vessels, continue unabated and unchallenged due to the lack of an adequate monitoring, control and surveillance structure with regards to both equipment and management systems in the developing West Africa sub-region.

It is suspected/speculated that there are incursions by foreign vessels engaged in IUU within Ghanaian marine waters. In Ghana the estimated fish loss due to IUU fishing, particularly illegally fished tuna, could be much less when compared to Sierra Leone and Nigeria. Based on a report of assets IUU fish loss is estimated at US$100,000 per day, in addition to damage of artisanal fishing equipment in the marine waters of West Africa.

Tuna is the only fisheries resource that can withstand considerable expansion. The maximum sustainable catch of the Eastern Atlantic is estimated at 200,000mt of which about 40% is in Ghanaian waters. The sustainable catch in Ghana is estimated between 90,000mt and 100,000mt, and the annual landings are about 36,000mt. This area has been given a further boost by the construction of a tuna-landing bay by the Japanese Government. The tuna processing facility at the Pioneer Food Cannery (PFC) is expanding and can handle most of the landings and meet the export requirements.

According to measures to combat IUU fishing in Ghanaian waters, it is planned that the Monitoring, Control Surveillance and Enforcement (MCSE) Unit is to be strengthened and enforcement activity will focus on foreign vessel incursions. Also,

additional information on IUU fishing vessels in the area will be obtained from FAO, International Commission for the Conservation of Atlantic Tunas (ICCAT) and other relevant sources.

1.0 INTRODUCTION

Illegal, Unreported and Unregulated (IUU) Fisheries are a global phenomenon which require an international, holistic and coordinated approach in order to stem these distasteful activities. The West Africa Waters are endowed with one of the world's largest concentration of highly cherished fish, crustaceans and molluscs, which are exploited by various categories of fishing groups in the fishing industry. Nigeria and Ghana, with their vast coastlines, are blessed with valuable aquatic resources of commercial interest, particularly in the global market. It would therefore be desirable to undertake a detailed study of IUU activities in order to stop illegal plundering of fisheries resources in the West African Countries of Nigeria and Ghana. It is envisaged that this would contribute to the attainment of sustainable fisheries management in countries of the West Africa sub-region.

For almost two decades, starting in the late 1990s, a number of international fora have called for measures to combat illegal, unreported and unregulated fishing. The FAO Committee on Fisheries (COFI), at its Twenty-third Session in 1999, considered the problem to be a matter of high priority. Information presented to COFI at that time indicated that IUU fishing, particularly by fishing vessels flying "flags of convenience," was a growing threat to achieving sustainable fisheries. In view of the gravity of such information, COFI recommended the elaboration of an International Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing (IPOA-IUU), and the convening of an Expert Consultation and two Technical Consultations. COFI adopted the IPOA-IUU, by consensus, in March 2001.

Consequently, all states were urged by the United Nations General Assembly, as a matter of priority, to coordinate their activities and cooperate directly as well as through relevant regional fisheries management organizations, as appropriate, in the implementation of the IPOA-IUU, including the development of corresponding national plans of action.

Ever since, IPOA –IUU has been receiving a high level attention on the global scene. The World Summit on Sustainable Development (WSSD) in 2002 requested states to urgently develop and implement national and/or regional plans of action so that by 2004 the IPOA-IUU would be in place. Thereafter, supportive United Nation (UN) Resolutions were adopted. In 2003, one Resolution stipulated States should take necessary actions for the IPOA-IUU implementation, involving relevant regional fisheries management organizations (RFMOs). The other UN Resolution from 2003 encouraged States to develop and implement national and regional plans of action, to ensure that the IPOA-IUU was implemented by 2004.

Technical Guidelines to support implementation of the IPOA-IUU have been prepared and published by the FAO Fisheries Department. The Guidelines provide advice on measures required to effectively implement the IPOA-IUU. Also, advice is provided on the possible organization and content of national plans of action for successful implementation of the IPOA-IUU.

At the 25th Session of COFI in February 2003, IPOA-IUU was considered in terms of activity at both national and regional levels. It was therefore requested by members that the FAO should continue to provide technical assistance to facilitate both the development of national plans of action for the IPOA-IUU and its implementation. This document reports the study of IUU fishing and related matters in the West Africa sub-region, with respect to Nigeria and Ghana.

2.0 IMPORTANCE OF FISH AND IMPLICATION OF IUU TO THE ECONOMY

2.1 Protein of animal origin is in short supply in Nigeria due to the reduced population of cattle resulting from diseases (including rinderpest, foot and mouth disease, mouth cow disease etc, and parasites); the reduction of forage grounds due to desert encroachment and drought; shortage of animal feeds; and low genetic potentials of indigenous livestock breeds. Another major factor responsible for meat scarcity is the

increase in human population, which has put tremendous pressure on the limited supply of animal protein.

2.2 The short supply of animal protein and increase in human population have the combined effect of focusing attention more seriously than before on fish production and supply. The Nigerian situation strongly emphasizes the need to supplement animal protein with fish protein to a great extent. Fish is good source of sulphur and is particularly rich in essential amino acids such as *lysine, leucine*, *valine* and *arginine*. It is therefore suitable for supplementing diets of high carbohydrate content. Fish is also a good source of thiamine, riboflavin, preformed vitamins A and D, phosphorus, calcium and iron. For medical and health reasons many Nigerians now eat fish in preference to other forms of animal proteins (beef, mutton, chicken, etc) as it contains high levels of poly-unsaturated fatty acids (including Omega III fatty acids) which lower blood cholesterol level.

Of all the sub-sectors of Agriculture in Nigeria, fisheries ventures rank among those yielding very high revenues. Shrimp landings are mainly exported to Europe and the United States, contributing over US $29 million to the foreign exchange earnings of Nigeria. The marine fisheries resources made up of demersal, pelagic and shellfish stocks are of high economic importance. The total annual value of the known resources is estimated at US $233.57m--$531.64m. The known shrimp resources have an estimated annual value of US $29.6m--$46.66m. There are other marine resources yet to be identified and exploited. The Federal Department of Fisheries (FDF) generates an average of a total sum of over ₦40.0m (forty million Naira) annually from licensing trawlers.

2.3 The annual demand for fish in Nigeria is about 1.5 million tonnes. Unfortunately, local production is not more than 0.4 million tonnes, a deficit of 1.1million tonnes. In order to fill the gap, Nigeria has to import fish. Nigeria is the largest importer of frozen

fish in the world. Annual fish import bills exceeded ₦27 billion in the year 2000 (Table 1). The high import bill affects the growth of the fishing industry.

*** TABLE 1: NIGERIA FISH IMPORTS AND VALUE (1992-1999)**

YEAR	QUANTITY (MT)	VALUE US ($)	NAIRA EQUIVALENT
1992	225,590	267,211,201	
1993	356,217	267,156,521	
1994	229,244	150,947,991	
1995	266,448	140,308,752	
1996	403,273	290,351,310	
1997	382,442	158,632,744	
1998	373,043.7	190,098,052	
1999	466,596.60	209,958,638	23,851,301,276.80
2000	557,884	241,066,537	27,385,158,603.20

* Source: Federal Department of Fisheries

2.4 Nigeria has not developed her tuna fisheries. Information available from the Nigerian Institute for Oceanography and Marine Research indicates that tuna fisheries resources are abundant off the Nigerian coast. Some foreign boats are actively fishing for tuna in these areas, with an estimated catch of 10,000m.t per annum.

The Ghanaian fisheries sub-sector accounts for about 5% of the agricultural GDP. Fish is the major source of animal protein for Ghanaians. *Per caput* consumption of fish is about 26kg which represents 60% of all animal protein. In 1966, fish and fish products, including shrimps, tuna loins and canned tuna contributed US$ 56million which is about 21% of the total non-traditional exports of Ghana. In total, the industry supports up to 1.5 million people, about 10% of the total population.

3.0 THE STRUCTURE AND FEATURES OF THE FISHING INDUSTRY IN NIGERIA AND GHANA

3.1 The Nigerian fishing industry consists of two main components: the artisanal (small scale) and the industrial fisheries. The artisanal sub-sector is characterized by low capital outlay and technology application, low operational costs, intensive labour, cheap fish distribution network, and orientation to local markets. In spite of the low technological development this sector has remained the backbone of domestic fish

production in Nigeria. It has an average contribution of over 70% to total fish production (Table 2). Over 600,000 families are currently engaged in the small-scale (artisanal) exploitation of the marine fisheries resources.

3.2 The industrial sub-sector, on the other hand, is characterized by factors opposite of those in the artisanal sector with its high capital outlay and advanced technology application. Its contribution to total domestic fish production is about 3.7% on the average. Its major strength lies in its capacity to generate foreign exchange through the exports of frozen shrimps worth an estimated value of over US $20 million per annum. The industrial fisheries sub-sector has in its employment over 20,000 members of staff and about 500,000 fish retailers. The industrial sub-sector operates a total of 226 trawlers. The sub-sector is over capitalized in the procurement of trawlers.

3.3 Type of fisheries in Nigeria

The resource base available to Nigeria can support the development both of offshore, inshore, brackish-water and inland capture fisheries, and of aquaculture.

The offshore resources located between the 30 nautical mile territorial limit and the 200 nautical mile exclusive economic zone consist mainly of tuna, forming part of the large Gulf of Guinea stocks. Despite this natural endowment, Nigeria is not actively participating in the exploitation of this resource due to technical constraints. Whereas a virile industry and transhipments exist for the Gulf of Guinea tuna under the management of ICCAT, no tuna vessels are based in Nigeria. Nevertheless, in the last two to three years, landings of 1-2000t annually from vessels operating in the EEZ have contributed to domestic supplies.

The inshore resources, in contrast, support a very active industrial fleet of fish and shrimp trawlers as well as a huge artisanal canoe fleet. The industrial fleet consists of small-and medium-sized vessels in the range of 9- 25m LOA and 20-150 GRT. They trawl for finfish and shrimps along the entire 850km coastline, but are concentrated in the eastern portion because of the higher productivity of the waters off the delta region and the wider continental shelf. Oceanographic conditions, including poor upwelling, limit

the productivity of the waters off the Nigerian coast. This is compounded by the generally narrow continental shelf, and the result is a limited potential yield of demersal finfish stock. Potential yield estimates for demersal fish are 27,000-38,000t and 4,500-5,000t for shrimps.

The species composition is dominated by croakers (*Pseudotolithus spp.*), grunts (*Brachydeuterus spp.*), various soles, catfish (*Arius spp.*), and shrimps (*Penaeus spp.*).

Fishing effort is high, with 40 fishing and 266 shrimping vessels licensed in 1997, and 62 fishing and 162 shrimping vessels in 1998. These vessels landed a total of 27,703t in 1997 and 29,475t in 1998. The trawling industry is well developed and organized under the Nigerian Trawler Owners' Association (NITOA). There are about 40 trawling companies in Nigeria, most of which are members of NITOA. Most individual company fleet sizes are low (less than 4) and are mostly owned by Nigerians.

The larger companies, with fleet size of 4 or more, are mainly partnerships with foreign investors. NITOA is working with government to address the numerous problems of the Nigerian industrial fishery sector, including a limited resource base; inadequate infrastructure; unfavourable fiscal policy; inefficient resource management; and environmental concerns.

In addition to the locally owned fleet, reefer vessels on charter to Nigerian companies are licensed to deliver fish, caught mainly in the eastern-central and south Atlantic, to Nigerian ports to meet the shortfall in local supplies. Categorized as distant-water landings, these amount to about 50% of total fish supplies annually.

The artisanal canoe fleet exploits coastal waters up to 5 nautical miles from shore, and the vast networks of brackish waters of the Niger Delta and other major rivers, estimated to be about 858,000 ha. It is a low-technology, labour-intensive fishery utilizing canoes 6 to 13m long, paddled or motorized. The gear is mainly gill nets, cast nets, hooks, beach seines and various forms of traps in the estuaries. They target small pelagics – *Sardinella spp.* and *Ethmalosa spp.* – which they land in huge quantities in season (November to April).

From their set nets they land demersal species such as croakers, catfish and shinynose, of good individual size. They also target shrimp (Penaeids) in the estuaries at a convenient stage of their maturation cycle, thus curtailing recruitment at sea for the industrials shrimpers. The artisanal coastal and brackish-water fishery is very important, representing a considerable proportion by weight of local fish landings. It is also a major livelihood source for rural communities along the entire coast and expansive estuaries. The official figure of about 500,000 artisanal fishermen (Table 2) is almost certainly a gross underestimation, even for the coastal and brackish-water fishery.

3.4 Profile of Ghana Fisheries

Ghana is a developing coastal State bordering the Atlantic Ocean. The fisheries sub-sector of agriculture in Ghana is based on resources from the marine, inland (freshwater), and lagoon environments as well as from aquaculture. Fishing activities in the marine sector range from artisanal, through semi-industrial fishing, to industrial operations and exploit both pelagic and demersal fishery resources. Volta Lake, reservoirs and fishponds are the main sources of freshwater fish.

3.4.1 The Fishing Industry

The fishing industry in Ghana is based on resources from the marine and, to a lesser extent, inland sector. The fisheries activities in the marine sector range from artisanal to industrial, exploiting both pelagic and demersal fish resources up to 200 nautical miles (EEZ) from shore. The Volta Lake, reservoirs, fish ponds and coastal lagoons are the main sources of inland fisheries.

In 1997 the marine fisheries accounted for about 85% of the total annual fish production. The four categories of fleets exploiting the fishery are: artisanal (canoe), inshore/semi industrial, deep-sea/industrial and tuna fleets. The artisanal fishery has wooden dugout canoes operating from 293 landing beaches in 189 fishing villages. There are about 101,700 fishermen and 150,000 processors and traders. There are 8,895 canoes, of which 56.2% are motorized. The sector produces between 70% and 80% of the total annual marine catch and accounts for over 95% of the annual landings of about 250,000 of small pelagics. The main species exploited are anchovy, sardinella, mackerel and burrito.

The inshore fleet consists of locally built wooden vessels using inboard engines. They are between 8.2m and 37m long and are used for purse seining during the major and minor seasons, and trawling during the off season. The number of vessels has dwindled due to the decline in profits resulting from the lack of fishery resource for exploitation and the high cost of vessel operation and maintenance.

The annual landings for the 149 vessels in 1997 was 4,920 mt. The types of fish predominantly exploited by the inshore fleet are sardinella, mackerels and burrito. The deep-sea fleet consists of imported steel vessels used for trawling and shrimping. These vessels are more than 35m long and have engines of more than 600hp. At present, there are 62 trawlers operational in Ghana.

Fourteen trawler vessels have obtained fishing rights to fish in Senegal, Sierra Leone, and the North Sea. The fish landed by these vessels are regarded as local catches. Some of the landed species are sardinella, chub mackerel and horse mackerel.

The 13 operational shrimpers are limited to 1^{o}499W to 2^{o}20W longitude from Eikwe to Adjua in the Western Region, and 1^{o}14E to 1^{o}5E Ahiwan to Aflao in the Volta Region. About 80% of the fish landed are demersal species. Other demersal species landed as by-catch are sea bream, cuttlefish, cassava fish and burrito. The shrimp landed are mostly exported to Europe and the Far East. Shrimp production has been in decline over the past few years. Some of the companies are converting their shrimp vessels into trawlers.

All tuna vessels are operated on join-venture basis with Ghanaians owing at least 25% of the shares as decreed in the Fisheries Law PNDC Law 256 of 1991. The vessels are over 30.5m long with engines of 400 hp or more. Thirty of the vessels are pole and line and three are purse seine. The main species caught are skipjack, yellowfin and big eye. About 67% of the landed tuna is processed into loins or canned and exported; the rest is sold at the local market. In 1997, estimated tuna landings were 36, 044 mt.

3.4.2 The marine sector

The fisheries activities in the marine sector exploit both pelagic and demersal fish resources. The marine fishing industry in Ghana consists of three main sectors, namely, small scale (or artisanal), semi-industrial (or inshore) and industrial sectors.

3.4.3 The Artisanal Sector

The fishing craft for the artisanal sector is the dug-out canoe. The canoes range in size between about three and 18m long and from 0.5 to 1.8m wide depending on the type of fishery that it is used for. The canoe is propelled by an outboard motor of up to 40hp, or sail and oars depending upon the fishing operation that it is used for.

The nearly 10,000 dugout canoes used in the marine artisanal sector operate from 304 landing centres in 189 fishing villages located in 17 coastal administrative Districts of Ghana. In the latest canoe frame survey conducted in 2001, the number of marine artisanal fishermen was listed at over 123,000.

In the artisanal fishery several types of fishing gears are used; these include a wide variety of gilling and entangling nets, seine nets (purse and beach seines), handlines, and castnets.

3.4.4 The Semi-industrial or Inshore Sector

The semi-industrial or inshore fleet consists of locally built, wooden-hulled vessels, which measure between 8 and 22m long (at present). They are used for purse seining during the upwelling (or sardinella fishing) seasons, and trawling during the off-season. The vessels are powered by inboard engines of between 90 and 400hp. They operate from seven coastal landing centres, namely: Tema, Apam, Mumford, Elmina, Sekondi, Takoradi and Axim. The number of inshore vessels decreased over the past 15 years due to the decline in the stock size of target species and high cost of operation and maintenance.

3.4.5 The Industrial Sector

The industrial sector comprises large, steel-hulled foreign-built trawlers, pair trawlers, shrimpers and tuna pole-and-line vessels (baitboats) and purse-seiners. They operate only from Tema and Takoradi where there are suitable berthing facilities.

The first industrial trawlers were acquired about four decades ago principally for fishing in more productive distant waters (mainly off Angola and Mauritania). From mid-1970s these vessels started fishing in home waters when countries claimed 200 miles of

exclusive economic zone in accordance with relevant provisions of the Third United Nations Convention on the Law of the Sea (UNCLOS III).

In 1986, commercial shrimping was resumed in Ghanaian waters nearly 12 years after the collapse of an earlier fishery. The numbers of vessels increased rapidly reaching a peak of 17 vessels in 1995 and declining thereafter. The earlier fishery collapsed around 1975 for various reasons including over-exploitation and the impact of the Volta dam at Akosombo on the hydrology of the Anyanui estuary and the Keta lagoon. It is believed that the operation of the shrimp vessels, especially in shallow waters, is not conducive to the sustainability of the resources and conflicts with activities of artisanal fishers.

Industrial tuna fishing in Ghanaian waters started in 1962 by Messrs Star Kist Foods Inc. of USA. Until 1996, the tuna fishing fleet was made up of pole-and-line vessels, some of which were of foreign nationality. Since 1986, no foreign-flag vessels have operated in the tuna fishery. All tuna vessels are operated on joint-venture basis in which Ghanaians are to have 50 per cent shares as required in the Fisheries Act 625 of 2002. The vessels are all registered in Ghana. The Fisheries Act also allows licences for foreign fishing vessels to be issued if there is an access arrangement, but so far none have been issued in this manner.

3.4.6 Number of Vessels and Areas of Operation of Fishing Fleets

Table 3 shows the number of operational vessels in each fleet in 1997-2003. With the exception of the tuna fishing fleet, all vessels operate in about the same area in Ghanaian waters and target similar species. This generates conflict among the fleets, especially between the artisanal and industrial sectors with the latter often destroying nets set by the former. Tuna baitboats use anchovy as bait, thus competing with the artisanal fishers for the same resource.

3.4.7 Tuna Processing and Production

About 40 per cent of the sustainable annual tuna catch of the Eastern Atlantic can be taken in Ghanaian waters. Tuna processing and preparation of fishmeal from tuna offal are the main industrial fish processing activities carried out in Ghana. The quantity of deep frozen tuna exported from Ghana was drastically reduced when Star Kist established the Pioneer Food Cannery (PFC) in Tema in 1994. PFC purchases and processes all exportable tunas landed in Ghana into loins and fully-canned products. PFC and Ghana-Agro Foods Company (GAFCO), the other major tuna cannery, process tuna both for export and the domestic market. About 70 per cent of the landed tuna is processed into loins or canned and exported.

4.0 IUU AND RELATED MATTERS

Illegal, unreported and unregulated (IUU) fishing has many facets and motivations, although the most obvious underlying motivations are driven by economic considerations. Other considerations likely to contribute to IUU fishing include the existence of excess fleet capacity, the payment of government subsidies (where they maintain or increase capacity), strong market demand for particular products, weak national fishery administration (including weak reporting systems), poor regional fisheries management, and ineffective monitoring, control and surveillance (MCS) including the lack of vessel monitoring systems (VMS). A key consideration in addressing IUU fishing is the need to achieve effective flag State control over the operations of fishing vessels.

The international community now ranks IUU fishing as being one of the most significant issues impeding the achievement of sustainable fisheries. In recent years IUU fishing has been part of all major discussions relating to fisheries.

Despite the international focus on IUU fishing in marine industrial fisheries, it should be noted that IUU fishing occurs in all capture fisheries. IUU fishing is not confined to certain types or categories of capture fisheries—to a greater or lesser extent it is to be found in both marine and inland fisheries. IUU fishing has achieved crisis

proportions in some fisheries because it seriously undermines efforts to conserve and manage fish stocks and inhibits the rebuilding of stocks where overfishing has already occurred. In the extreme, IUU fishing can render national and regional management efforts futile as gains from management are eroded by fishers who act solely in self-interest outside national and regional management parameters.

To promote concerted and coordinated efforts against all forms of IUU fishing, in 2001 the FAO adopted the International Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing (IPOA – IUU). A voluntary instrument concluded within the framework of the 1995 FAO Code of Conduct for Responsible Fisheries (Code of Conduct), the IPOA – IUU seeks to galvanize international action to confront the root causes of IUU fishing in a transparent and innovative manner, providing flexibility for States and RFBs to adopt measures that most suit their particular circumstances and needs.

The IPOA – IUU foresees action against IUU fishing by States categorized by function. The four categories, which are not mutually exclusive in character, consist of :

- all States (that should undertake certain fundamental activities irrespective of their geographic location and role in the fisheries sector);
- flag States (that have direct responsibility for the operation of their flag vessels);
- coastal States (that should implement measures to discourage and prevent IUU fishing in their EEZs) and
- port States (that should exercise their rights to prevent IUU caught product from being landed or transshipped in their ports).

In addition, the IPOA – IUU encourages States to implement internationally agreed market-related measures as a means of trying to block, or at least impede, trade in IUU caught products. This is an important issue because if trade in IUU caught product is thwarted then revenue flows to IUU fishers will be reduced, along with the incentive to engage in such fishing.

A fundamental aspect of the IPOA – IUU is the need for states to cooperate regionally to prevent IUU fishing by promoting the implementation of sound region-wide standards and practices. It has been noted in many cases that a failure to promote and agree on regional approaches and measures to combat IUU fishing has created gaps that enable IUU fishing to flourish.

It is interesting and noteworthy that in the West Africa sub-region Ghana has developed a National Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated fishing (NPOAs-IUU) in the country. The basic terminology of IUU fishing, as defined in the IPOA-IUU, is given below.

ILLEGAL, UNREPORTED AND UNREGULATED FISHING

(Paragraph 3, IPOA-IUU)

Illegal fishing refers to fishing activities:

(1) conducted by national or foreign vessels in waters under the jurisdiction of a State, without the permission of that State, or in contravention of its laws and regulations;

(2) conducted by vessels flying the flag of States that are parties to a relevant regional fisheries management organization but operate in contravention of the conservation and management measures adopted by that organization and by which the States are bound, or relevant provisions of the applicable international law; or

(3) in violation of national laws or international obligations, including those undertaken by cooperating States to a relevant regional fisheries management organization.

Unreported fishing refers to fishing activities:

(1) which have not been reported, or have been misreported, to the relevant national authority, in contravention of national laws and regulations; or

(2) undertaken in the area of competence of a relevant regional fisheries management organization which have not been reported or have been misreported, in contravention of the reporting procedures of that organization.

Unregulated fishing refers to fishing activities:

(1) in the area of application of a relevant regional fisheries management organization that are conducted by vessels without nationality, or by those flying the flag of a State not party to that organization, or by a fishing entity, in a manner that is not consistent with or contravenes the conservation and management measures of that organization; or

(2) in areas or for fish stocks in relation to which there are no applicable conservation or management measures and where such fishing activities are conducted in a manner inconsistent with State responsibilities for the conservation of living marine resources under international law.

4.1 Evidence of IUU in Nigeria

Illegal and unauthorized fishing by foreign fishermen in Nigerian waters has been frequently reported in the last two decades. Some vessels belonging to countries such as Italy, Greece, Russia, Japan, Cameroon and Togo fish in Nigerian waters undeterred. The vessels are larger than the size recommended for fishing in Nigerian waters. They use unapproved sophisticated fishing gears. The major factor that is responsible for IUU fishing in Nigeria's territorial waters is the inability of the relevant agencies to monitor the activity due to lack of necessary platforms such as patrol boats, aircrafts and vessel monitoring systems (VMS). The type of IUU fishing observed in Nigerian coastal waters is that of unlicensed vessels. In the year 2006 one vessel was observed while in 2007 four vessels were observed.

The total number of vessels licensed for fishing in Nigeria was 235 in year 2005, 202 in 2006 and 201 in 2007. In 2007 only one was licensed to fish in the EEZ and it is

yet to start. There is no information on vessels fishing either in the closed areas (non-trawling zone), fishing with illegal gear or fishing illegal species.

Conflicts have been observed between industrial vessels and artisanal fishermen. These conflicts have resulted in the destruction of artisanal fishing gear. There were five instances of artisanal fishing gear being destroyed in 2006, while there were three in 2007. There is no information on destruction of boats, loss of lives or fish catch.

4.2 By-catch fish species

By-catch fish species include the Pseudotolithus species, Cynoglossus species, Arius species, Sphyraena species, Polydactylus quadrifilis, and Sepia. Production figures for these species from 2004 to 2006 are presented below.

Production from 2004 – 2006 (MT)

Species	2004	2005	2006
Pseudotolithus sp.	8.18	3,585	1,918
Cynoglossus sp.	5.44	2,730	1,666
Aruis sp.	0.5	215	144
Sphyraena sp	0.75	292	182
Polydactylus quadrifilis	0.33	151	119
Sepia	0.70	487	253

4.3 IUU fishing fish quantity and value

Illegal and unauthorized fishing by foreign fishermen in the Nigerian waters have been frequently reported in the past two decades. Some vessels belonging to countries such as Italy, Greece, Russia, Japan, Cameroon and Togo fish in Nigerian waters undeterred. The vessels are bigger than the size recommended to fish in Nigerian waters. They use unapproved sophisticated fishing gears. Nigeria loses about US $30 million annually to poachers.

4.4 IUU fishing impact

There are no available information or on target species and on by-catch.

4.5 Identity of major IUU fishing fleet in Nigeria

MFV Mustapha was the vessel identified as being involved in IUU in the year 2006. In 2007 four vessels from one company were identified: L/O DA GAN YU 15011, L/AO DA GAN YU 15012, L/AO DA GAN YU 15031 and L/OA DA GAN YU 15032.

Apart from illegal poaching, the exploitation of Nigeria's marine fishing industry is also characterized by:-

4.5.1 Over-exploitation of the fisheries resources

Along with the attendant problem of poaching is the problem of over-exploitation of the fisheries resources in Nigerian waters. Continuous monitoring and assessment of fish landings in Nigerian waters over ten years shows that there is now recruitment failure in the marine fisheries. Some fish species are disappearing from trawler landings. What is being landed today was considered 'trash' just a few years ago. While juvenile fishes (less than 15cm in Total Length) are constituting about 70-90% of each trawler landing, the sizable commercial fishes such as *Pseudolithus spp*. (croaker), *Polydactylus, spp*. (giant African threadfin, and *Lutjanus spp*. (red snapper) etc are hardly landed by shrimp trawlers. This is an indication of fish species biodiversity erosion.

4.5.2 Use of undersized nets

There are stipulated mesh sizes for fishing and shrimping nets in the Sea Fisheries Decree. It stipulates that trawlers shall not use a cord-end with stretch mesh size of less than 76mm (3inches) when trawling for fish in the inshore waters or with mesh sizes less than 44mm (1¾ inches) when trawling for shrimps in approved areas. Some industrial fishermen use undersized net meshes, which results in the catching of juvenile fishes and consequent depletion of the resource.

4.5.3 Menace by trawlers

There are persistent conflicts between artisanal (small scale) fishermen operating in the near shore waters and trawler operators. Some trawlers operate within the first five nautical miles of the coastline, a place statutorily reserved for artisanal fishermen; and can destroy the fishing nets of the latter. This disturbs the economic activities of the artisanal fishermen.

4.5.4 Pilferage at sea

Crewmembers of trawlers illegally off-load and sell substantial parts of their catch at sea. Some of the crewmembers are encouraged by the trawler owners to use the proceeds of the illegal fish sales to illegally bunker Automative Gas Oil (AGO) at sea. There is a high rate of pilferage in the process.

4.5.5 Exportation of shrimps at sea

Some crewmembers export their catches at sea or from foreign ports without landing them first in Nigeria. This is contrary to the Sea Fisheries Decree of 1992.

4.5.6 Evasion of duty payment on imported fish

Many importers of frozen fish evade the payment of duty on fish imported.

4.5.7 Rendition of false fisheries data

Most operators of fishing vessels render false fish landing data. This results in giving a false impression of the status of the fish stocks causing the publication of controversial and unacceptable fisheries data.

4.5.8 Piracy

Trawlers no longer have free access to the fishing ground. Pirates, particularly in the Niger Delta, have frequently attacked trawlers at sea. The pirates operate with speedboats

armed with automatic weapons. The pirates demand ransom (money) to release the trawlers. Fishing companies have been forced to pay the ransoms. In all cases of piracies electronic equipment, drums of lubricating oils and cash (money) on board the trawlers are removed. In some cases, trawlers have been damaged when they are forced into shallow river mouths. There have been 88 of such attacks in the last two years. This is a source of very serious concern.

4.5.9 Automotive Gas Oil

Automotive Gas Oil (AGO) is scarce. When it is available, the astronomical price increase (up to 200% on official price) which makes it impossible for fishing boats to break even. Some vessels therefore take bunkers at unspecified locations, allowing a lot of room for malpractice. When the quantities of bunkers are known, the fish landed are grossly below the expected catches from the bunkers. This has become a major concern to the Government.

4.6 Evidence of IUU in Ghana

Unlike some of its neighbours, a major problem in Ghana is not with illegal trawlers but with licensed trawlers and shrimpers using illegal fishing gears and practices, including widespread fishing inside the IEZ. These vessels are required to operate according to strict regulations, but the government does not have the necessary capacity to enforce them.

4.7 Depletion of Marine Fishery Resources

The Ghanaian coastal waters experience a seasonal coastal upwelling and support a number of commercially important pelagic (surface and mid-water dwelling) and demersal (bottom dwelling) fish species. In Ghana, there are fisheries for small pelagic species (e.g. sardinellas), large pelagic species (e.g. tunas) and demersal species (e.g. seabreams and shrimps). Unlike some of its neighbours, a major problem in Ghana is not with illegal trawlers but with licensed trawlers and shrimpers using illegal fishing gears and practices, including widespread fishing inside the IEZ. These vessels are required to operate according to strict regulations, but the government does not have the necessary capacity to enforce them.

Sardinellas, anchovy and mackerels constitute the small pelagic fishery resource in Ghanaian coastal waters. The sardinella fishery is one of the most important economic activities in Ghana. Large variations in landings of these species are experienced and in some years (i.e. between 1973 and 1978) the fishery reached points of near collapse.

The principal tuna species that occur throughout the eastern Atlantic Ocean are yellowfin, skipjack and big-eye. Assessment of tunas in the whole Atlantic is coordinated by the International Commission for the Conservation of Atlantic Tunas (ICCAT). Recent assessments by ICCAT show that yellowfin and big-eye tuna resources in the Atlantic are being optimally exploited but it appears that skipjack is under-exploited.

The important demersal fish species are of the families Sparidae, Lutjanidae, Mullidae, Haemulidae, Serranidae, Polynemidae and Penaeidae. All indications are that there is a high rate of exploitation and excessive fishing pressure, especially on demersal stocks. Several reports have emphasised the need to reduce the fishing pressure on the already depleted demersal stocks, especially those in shallow waters.

The Fisheries Act establishes an Inshore Exclusion Zone (IEZ) which comprises the coastal waters between the coastline and the 30 metre depth contour or six nautical mile offshore limit, whichever is furthest. Large semi-industrial vessels and industrial vessels are not permitted within the IEZ and canoe support vessels are also prohibited, as are all towing gear. The IEZ is reserved exclusively for canoes and small semi-industrial

vessels (the latter are not to use towing gears in the zone). But the Daily Graphics report on Monday, July 23, 2007 stated that small canoe operators are expressing anger over fish trawlers who come so close to the continental shelf in violation of the law, and often destroy their nest.

4.8 Actions of IUU

According to the FAO (2007), when an inspector finds that there is reasonable evidence for believing that a foreign fishing vessel has engaged in, or supported, IUU fishing then the port State should promptly notify the flag State of the vessel and, where appropriate, the relevant coastal States and regional fisheries management organizations.

IUU fishing activities include, but are not limited to, the following:

a) Fishing without a valid license, authorization or permit issued by the flag state or the relevant coastal State;
b) Failing to maintain accurate records of catch and catch-related data;
c) fishing in a closed area, fishing during a closed season or without, or after attainment of a quota;
d) directed fishing for a stock which is subject to a moratorium or for which fishing is prohibited;
e) using prohibited fishing gear;
f) falsifying or concealing the markings, identity or registration of the vessel;
g) concealing, tampering with or disposing of evidence relating to an investigation;
h) conducting multiple violations which together constitute a serious disregard of relevant conservation and management measures;
i) failure to comply with vessel, monitoring systems (VMS) requirements; and
j) taking or landing undersized fish in contravention with relevant conservation and management measures.

The port State should take due note of any reply or any actions proposed or taken by the flag State of the inspected vessel. Unless the port State is satisfied that the flag State has taken or will take adequate action, the vessel should not be allowed to land or transship fish in its ports. The port State may take other actions with the consent of, or upon the request of, the flag State.

5.0 FISHERIES LAWS IN NIGERIA AND GHANA

5.1 Background Information on the Enforcement of Fisheries Laws In Nigeria and Ghana

At the moment, neither Ghana or Nigeria have measures in place which are robust enough to effectively combat IUU activities in their EEZ. Many of the National Fisheries Laws Acts and regulations need to be reviewed to enable enforcement as an effective deterrent to IUU fishing.

5.1.1 Nigeria is a maritime country with a coastline of 853km. The surface area of its continental shelf is 46,300km^2 while the Exclusive Economic Zone (EEZ) covers an area of 210,900km^2, within which Nigeria exercises sovereign rights for the purpose of exploitation, conservation and the managing its fisheries resources. The wide expanse of sea is endowed with abundant fish and shrimp resources.

5.1.2 The marine fisheries resources made up of demersal, pelagic and shellfish stocks are of economic importance. The total annual value of the known resources is estimated as US $233.57m--$531.64m. The known shrimp fisheries (with a total annual value of US $29.6m-- $46.6m) are export oriented. There are other marine resources yet to be identified and exploited.

5.1.3 The principal commercial species comprising the Nigerian marine fisheries resource are at serious risk from over-exploitation by both foreign and domestic fishing vessels. There are no coordinated national fisheries management plans in place yet to

arrest this decline or restore the stocks to the equilibrium necessary to allow for the sustainable development of Nigeria's fisheries for the benefit of future generations.

5.2 Fisheries Laws/ Regulations and Inadequacies

5.2.1 Types of Fisheries Laws/Regulation

Four sets of fisheries laws regulate fishing activities within the territorial waters and the EEZ of Nigeria. These are the Sea Fisheries Decree (ACT) No. 71 of 1992, its supplements; the Sea Fisheries (Licensing), Regulations 1992, the Sea Fisheries (Fishing), Regulations of 1992 the Turtle Excluder Device (TED), Regulations of 1992 and the Exclusive Economic Zone Decree (ACT) 1978.

5.2.2 Agencies Involved

The Federal Department of Fisheries has the overall statutory responsibility for the enforcement of the marine fisheries laws (empowered by Decree No. 71 of 1992). This role is carried out through its Fisheries Resources Monitoring Control and Surveillance Unit (MCSU). Co-opted (by Decree No. 71 of 1992) to collaborate with the FDF in the enforcement of the fisheries laws are agencies such as the Nigerian Navy, the Marine Police and the Customs and Excise Department. These agencies carry out fisheries patrol duties as a secondary task.

5.2.3 Status of the Monitoring, Control and Surveillance Unit (MCSU)

The MCSU of the Department as presently constituted is not properly equipped and not well-funded. The unit was a beneficiary of the World Bank (IDA) credit under the Multi-State-Agricultural Development Programme (MSADP III) credit No. 2035-UNI. Part of the credit proceeds were used for the procurement of works (civil works in the strategic locations of Lagos, Port Harcourt, Warri, and Ebughu/James Town near the Nigerian

Cameroon border to serve as surveillance and monitoring outposts) and goods (including marine radio communication equipment and a radar patrol boat).

5.2.4 Ghana Monitoring, Control, Surveillance and Enforcement Unit

The 2002 Fisheries Act, just like the PNDCL 256 that preceded it, provides for a Monitoring, Control, Surveillance and Enforcement Unit. Personnel for the Unit are designated by the Minister in consultation with the Minister for Defence, and include personnel from the navy, air force and the secretariat of the Commission. Their powers are clearly set out for activities inside areas of Ghanaian jurisdiction, but, as noted above, they may exercise their powers beyond the limits of the EEZ following hot pursuit.

5.2.5 Penalties, Fines, Compounding Process

Management of fisheries can be frustrated due to the fact that penalties and fines in the Act are very steep, and somewhat uneven. They are expressed either in "penalty units" or United States dollars and in most cases there are maximum and minimum fines. Maximum fines generally apply to semi-industrial, industrial or foreign fishing vessels and can be as high as US$2 million, for example in the case of unlicensed fishing by a foreign fishing vessel. However, unlicensed fishing by a Ghanaian industrial fishing vessel attracts a minimum fine of US$1000 with no maximum specified.

There is a provision in the Fisheries Act for compounding an offence, allowing the Commission to accept an amount not less than the minimum penalty for the offence, plus the fair market value for any fish caught illegally, with the consent of the prosecutor.

5.2.6 Evidentiary Provisions

Evidentiary provisions allow for certificate evidence by an authorized officer regarding, *inter alia*, the position of a vessel as identified by position fixing instruments. The certificate can be used as sufficient evidence in the prosecution if there is no objection by the defendant. There is a general provision regarding "designated machines" where the Minister may designate a machine by notice in the *Gazette* and the readings from such

machines are admissible as evidence under certain circumstances. This could apply to Automatic Location Communicators (ALCs) in a Vessel Monitoring System (VMS), but there are no requirements at present regulating the installation and maintenance of ALCs for VMS generally.

5.2.7 Integrated decision-making in Ghana

As noted above, the 2002 Fisheries Act provides integrated decision-making in the Directorate of Fisheries through establishment of the Fisheries Commission, and through a requirement that certain consultation procedures be followed.

In areas related to fisheries, the Ministry of Environment and Science acts as Coordinating Ministry for integrated decision-making in the following areas:

- integrated coastal zone management and sustainable development;
- marine environmental protection;
- sustainable use and conservation of marine living resources (of the high seas and under national jurisdiction).

Other arrangements that facilitate coordination include the Ghana National Committee for the Intergovernmental Oceanographic Commission, the National Committee for the Implementation of Agenda 21 and the Steering Committee of the Guinea Current Large Marine Ecosystem (LME) Project.

5.2.8 Equipment and Activities

The marine radio communication equipment was acquired to enhance the capability of the MCSU in the enforcement of the Fisheries Laws on 24 hours basis with particular emphasis on:

(i) Security patrols of Nigeria's coastal waters against piracy on fishing vessels (including attacks by aggressive communities) which is now a serious cause for concern.

(ii) Commercial fishing (monitoring the departure of vessels to sea, period at sea, and catches on daily basis of all vessels) and

(iii) Search and Rescue Operation (during fire outbreak, leakage of vessels and their possible loss, breakdown of engines that may lead to loss of crew life) etc.

5.2.9 Licence and Registration Requirements for Fishing Vessels

In keeping with the dual management systems, the Act has separate provisions in relation to local industrial and semi-industrial fishing vessels, foreign fishing vessels, artisanal fishing, aquaculture and recreational fishing vessels. Licences are required for fishing in Ghanaian waters by:

- foreign fishing vessels;
- local industrial and semi-industrial fishing vessels;
- canoes;
- artisanal fishing; and
- recreational fishing.

Licensed vessels are not allowed to land, tranship or discharge any fish outside Ghana. A licence is required for transhipment or export and, in any case, fish have to be landed first in Ghana. The Fisheries Commission is required to keep a register of fishing licences. Licensed vessels are required to make appropriate reports of catches and related data, and maintain logbooks.

6.0 HOW TO COMBAT IUU IN WEST AFRICA

IUU can be reduced if the problems listed above are solved. Specifically, the following measures should be considered:

- Promote the expansion of industrial fishing from inshore to offshore waters for the exploitation of under or unexploited demersal stocks and the tuna resources.
- Fund the enforcement of all fisheries laws and regulations.
- Capacity building (personnel)
- Documentation of resources

- Controls on fishing vessels and gear
- Management of fisheries resources
- Monitoring Control and Surveillance

7.0 RECOMMENDATIONS

Recommendations for effective control of IUU Fisheries

Countries of the sub-region should invest substantially in fisheries monitoring, control surveillance (MCS) as a panacea against pirate fishing vessels involved in IUU in terms of beefing up operational capacity, increasing budgetary allocation, improving government policies, etc. There is a need for an effective Regional Fisheries Management Organization (RFMO)

In West Africa, the (inactive) Sub-Region Fisheries Commission (CSRP) based in Dakar Senegal should be empowered to effectively perform its vital role of surveillance and control of the seas. The countries should cooperate in combating IUU pirate vessels:

- Considering the poor financial resources in the area it would be beneficial for the countries to pool resources together for enhanced operational capacity, joint-surveillance patrol, arrests and enforcement in the national waters of the sub-region.

- Action should be taken on the implementation of the centralized Regional Infractions Database which should be put into action
- Finally countries in the sub-region should remain focused and relentless in tackling IUU fishing in a concerted coordinated and organized manner to effectively protect the fisheries resources of West Africa.

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The Government of Australia, in cooperation with FAO, organized an Expert Consultation on Illegal, Unreported and Unregulated Fishing, which took place in Sydney, Australia, from 15 to 19 May 2000.

TABLE 2: DOMESTIC FISH PRODUCTION BY SECTORS IN NIGERIA 1991-2004 (TONNES)

NO	SECTORS	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
1	**ARTISANAL SUB-TOTAL**	291,286	283,943	201,176	234,601	320,955	309,200	360,220	433,070	426,786	418,069	433,537	450,965	446,203	434,830
	Coastal & Brackish Water	168,211	184,407	106,276	124,117	159,201	138,274	175,126	219,073	239,228	236,801	239,311	253,063	241,823	227,523
	Inland: Rivers & Lakes	123,075	99,536	94,900	110,484	161,754	170,926	185,094	213,996	187,558	181,266	194,226	197,902	204,380	207,307
2	**AQUACULTURE** (Fish Farm)	15,840	19,770	18,703	18,104	16,619	19,490	25,265	20,458	21,738	25,720	24,398	30,664	30,677	43,950
3	**INDUSTRIAL (COMMERCIAL TRAWLERS)**	36,226	39,365	35,644	30,488	33,479	27,244	27,703	29,955	31,139	23,308	28,378	30,091	33,882	30,421
	Fish (Inshore)	28,768	25,592	22,464	21,886	21,191	15,425	15,326	17,947	14,181	13,877	15,792	16,064	17,542	16,063
	Shrimp (Inshore)	6,200	9,373	8,956	7,884	12,252	9,551	10,807	10,716	15,249	8,0565	12,380	12,797	11,416	12,469
4	**EEZ (OFFSHORE)**	1,258	4,400	4,224	718	36	2,268	1,570	1,291	1,710	1,375	206	1,230	4,924	1,889
	GRAND TOTAL	343,352	343,078	255,523	282,193	371,053	355,934	413,188	483,482	479,663	467,099	486,313	511,720	510,762	509,201

Table 3: SUMMARY OF MARINE FISH PRODUCTION IN GHANA 1995 – 2006 (Metric Tonne MT)

NO	SECTORS	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
1	**CANOE TOTALS**	210,659.30	298,249.00	215,125.44	189,458.60	164,828.98	275,964.69	236,355.26	200,769.19	238,796.34	267,909.98	218,871.85	231,680.63
2	Inshore: Vessels Purseseine Subtotals	4,960.10	5,851.30	4,920.33	3,574.39	3,502.36	7,216.52	5,211.76	4,974.30	11,891.84	5,487.66	6,718.30	8,382.21
3	Trawlers Subtotals	1,410.6	2,501.50	2,373.48	3,563.03	1,647.01	1,451.54	2,393.78	2,810.25	1,426.85	843.69	872.99	1,494.96
4	Total Inshore	6,370.70	8,352.80	7,293.81	6,137.42	5,149.37	8,666.06	7,605.54	7,784.55	13,318.69	6,331.35	7,591.28	9,877.17
5	Industrial (Ghana Waters) Total	20,048.6	25,103.5	17,528.2	16,847.49	13,944.9	15,454.84	19,644.25	13,899.53	9,942.65	14,010.49	12,494.01	17,419.08
6	Industrial (Foreign Waters) Total	62,816.5	76,454.4	17,528.2	16,847.49	63,755.9	25,227.07	13,019.64	-	-	-	-	-
7	Shrimp Vessels Total	2,688.80	2,590.1	1,651.50	652.56	1,409.70	1,224.03	310.2	249.03	295.88	291.96	442.98	297.35
8	Paired Trawls Totals	-	-	-	-	-	-	-	1,259.7	3,905.72	1,119.68	1,163.51	1,090.39
9	Tuna Vessels Total	33,905.00	37,254.7	53,624.80	65,567.6	83,552.13	532.55	88,806.49	66,046.1	65,152.72	62,741.93	82,225.85	63,252.44
10	Total Landings	336,488.90	448,004.50	395,839.95	376,361.88	332,640.98	379,793.69	370,952.92	290,008.10	331,412.00	352,405.19	322,789.48	323,617.06
	Total (Ghana Water)	273,672.40	3,701,550.10	295,223.75	278,663.67	268,885.08	354,566.62	357,933.32	290,008.10	331,412.00	352,405.19	322,789.48	323,617.06

Source: Maine Fisheries Research Division (MRFD) of the Ghana Directed of Fisheries (2007)