

**THE LAW OF THE SEA: IMPACTS ON THE
CONSERVATION AND MANAGEMENT OF
FISHERIES RESOURCES OF DEVELOPING
COASTAL STATES – THE GHANA CASE STUDY**

Theodore KWADJOSSE

**The United Nations-Nippon Foundation of Japan
Fellowship Programme 2008 - 2009**



Oceans and Law of the Sea
Division for Ocean Affairs and the Law of the Sea



The Nippon Foundation

**DIVISION FOR OCEAN AFFAIRS AND THE LAW OF THE SEA
OFFICE OF LEGAL AFFAIRS, THE UNITED NATIONS
NEW YORK, 2009**

DISCLAIMER

The views expressed herein are those of the author and do not necessarily reflect the views of the Government of Ghana, the United Nations, the Nippon Foundation of Japan, or the University of Edinburgh.

© 2009 **Theodore Kwadjosse**. All rights reserved.

Abstract

During the early 1950s through to the late 1970s, Ghana was noted as a leading fishing nation in the West African sub-region, with her fishing fleets ranging as far as the coasts of Angola and Mauritania. Hence Ghana depends quite heavily on her coastal resources for food, human settlements and numerous other benefits. In fact the fisheries sector is known to provide a livelihood for over 2million Ghanaians living along the 538km stretch of Ghana's coastline and further inland.

There is currently a serious scarcity of fisheries resources, disputes over jurisdiction, inadequate conservation and management measures and a high influx of foreign fishing vessels in Ghanaian fishery waters, impacting heavily on the country's ability to meet domestic demand, threatening fish food security and the livelihood of many Ghanaians, as well as the country's economy.

Thus, this research set out to examine the policies adopted by the Ghanaian fisheries administrators before and after the inception of the first Ministry of Fisheries with the objective of identifying the shortfalls that have led to the current state of fisheries in the country and suggesting solutions to them.

An examination of Ghanaian fisheries laws (using the periods before and after Ghana's ratification of UNCLOS as a reference point) revealed that there has been no comprehensive fisheries policy for the management of the sector to date, except one, which is currently in the development stages. This draft policy seems to provide a potentially sound framework though it exhibits shortcomings that include lack of time frames for achieving, and prioritization of policy objectives.

Using some factors contributing to the current poor condition of the fisheries sector as a backdrop, it was recommended that prioritizing and time-framing policy objectives, as well as consideration of other factors stemming from funding, will contribute immensely towards developing a strong fisheries policy.

Acknowledgements

My sincere gratitude goes to the United Nations and the Nippon Foundation of Japan for giving me this opportunity to contribute to my country's development and to the Directorate of Fisheries for choosing me for this programme.

I would also like to show my appreciation to my hosts the University of Edinburgh Law School and the Division of Ocean Affairs and the Law of the Sea (DOALOS) providing me with such beautiful and conducive environments for my research.

To my supervisors Prof. Alan E. Boyle and Dr. Françoise Bailet, I say a heartfelt thank you. I hope I have been able to do some justice to your superb guidance. My appreciation also goes to Prof. Bill Gilmore, Dr. James Harrison and Mr. Papa Yaw Atobrah, Alfred Tetebo, Lionel Awity and Setor Avoke for their constant support, guidance and encouragement.

To my friends at the University of Edinburgh especially Daniela Diz, Pierre Harcourt, Kasey Lowe, Nicholas Gervais and Maiko Hayashi, I cannot express my gratitude enough. You acted as my sounding board, helped me through all those stumbling blocks and made me feel at home where I should have been a stranger. I thank you and wish you all the best in your programmes.

My tenure at DOALOS would not have been successful without the help of the staff, and I would like to thank you all especially Alice Hicuburundi, C. Blanchet, Sirhan Chaudry and Shawn Stanley.

I would also like to show my appreciation to my colleagues the 2008-2009 Fellows. Thanks for all the memorable moments we had together.

Finally to my family and friends, I say thank you for all the sacrifices and for always being there for me.

Acronyms

ADC	-	Agricultural Development Corporation
ANAF	-	Agriculture Network for Africa
CBFMC	-	Community Based Fisheries Management Committees
DFMC	-	District Fisheries Management Committees
DoF	-	Directorate of Fisheries
EEZ	-	Exclusive Economic Zone
EIA	-	Environmental Impact Assessment
FAO	-	Food and Agricultural Organization
FSCBP	-	Fisheries Sub-sector Capacity Building Project
HSTF	-	High Seas Task Force
IACS	-	International Association of Classification Societies
ICCAT	-	International Convention for the Conservation of Atlantic Tunas
IUCN	-	International Union for Conservation of Nature
IEZ	-	Inshore Exclusive Zone
IPOA	-	International Plan of Action
MCS	-	Monitoring Control and Surveillance
MCS D	-	Monitoring Control and Surveillance Division
MRAG	-	Marine Resources Assessment Group
NGAP	-	National Guidelines for Aquaculture Production
NGO	-	Non-Governmental Organization
NPOA	-	National Plan of Action
RFMO	-	Regional Fisheries Management Organization
SADC	-	South African Development Community
SFC	-	State Fishing Corporation
SRFC	-	Sub-Regional Fisheries Commission
UNCLOS	-	United Nations Convention of the Law of the Sea
UNFA	-	United Nations Fisheries Agreement
VMS	-	Vessel Monitoring System
WWF	-	World Wildlife Fund

LOS: IMPACTS ON THE CONSERVATION AND MANAGEMENT OF FISHERIES RESOURCES OF DEVELOPING COASTAL STATES – THE GHANA CASE STUDY

TABLE OF CONTENTS

CONTENTS	PAGE
DISCLAIMER	i
ABSTRACT	ii
ACKNOWLEDGEMENTS	iii
LIST OF CONTENTS	iv
LIST OF FIGURES	viii
LIST OF TABLES	viii
ANNEX	79
Introduction	1
1.0 Overview of the Ghanaian Fishing Industry	3
1.1 Coastal Morphology and Oceanography of Ghana	3
1.2 Brief History of the Industry	3
1.3 Current State of the Industry	5
1.3.1. Marine Fisheries	5
1.3.2. Inland Fisheries	6
1.3.3. Processing	6
1.3.4. Aquaculture	7
1.4 Economic Impacts of the Fisheries Sector	7
2.0 Fisheries Governance in Ghana	9
2.1 Historical Development	9
2.1.1. Introduction	9
2.1.2. Pre-UNCLOS Legislation	9
2.1.3. Post-UNCLOS Legislation	12
2.2 The Fisheries Act 625 of 2002	13
2.2.1. The Fisheries Commission	14

2.2.1.1.	Financing the Commission: The Fisheries Development Fund	17
2.2.2.	Fishery Plans	19
2.2.3.	Licensing	20
2.2.3.1.	Conditions of Licensing	20
2.2.3.2.	The Application Process	22
2.2.3.3.	Renewal and Transfer of Fishing Licence	22
2.2.3.4.	Foreign Fishing Vessels	23
2.2.3.5.	Register of Licences	27
2.2.3.6.	Fisheries Appeals Board	28
2.2.4.	Establishment of Fishing Zones	28
2.2.5.	Fishing Activities and Fishing Gear	29
2.2.6.	Conservation Measures	30
2.2.7.	Monitoring Control and Surveillance	30
2.2.8.	Jurisdiction and Evidence	31
2.2.9.	Conclusion	32
2.3.	The Draft National Fisheries and Aquaculture Policy	33
2.3.1.	General Layout and Description of the Policy	35
2.3.1.1.	Policy Area 1: Management of Fisheries, Conservation of Aquatic Resources and Protection of their Natural Environment	35
2.3.1.2.	Policy Area 2: Promote Value Addition in the Fisheries Sector	37
2.3.1.3.	Policy Area 3: Establish the Basis Required for Aquaculture Development	39
2.3.1.4.	Policy Area 4: Establish an Enabling Environment for Sustainable Fisheries and Aquaculture Development	42
2.4.	International Response to IUU Fishing and Lessons for Ghana	46
2.4.1.	A National Plan of Action on IUU for Ghana	52
2.4.2.	Strengthening Monitoring Control and Surveillance	53

3.0	Concluding remarks and Recommendations	60
3.1.	Recommended Considerations for Policy Development	61
3.2.	Shortfalls and Suggested Solutions	66
	3.2.1. Prioritization	66
	3.2.2. Compliance	68
	3.2.3. Funding	71
	3.2.4. Governance	72

LIST OF FIGURES

Figure 1 Marine Fish Landings in Ghana 1961 to 1987	11
Figure 2 Illustration of types of IUU fishing. Within an EEZ there may be unlicensed fishing (poaching), under- or non-reporting, or unauthorized fishing by area, seasonal, gear, quota or species. Outside EEZs there may be non- compliance with an RFMO, or there may be unregulated fishing outside the area of an RFMO. Note that many RFMOs also cover adjoining EEZ waters, but the primary jurisdiction in these cases remains that of the coastal state.....	47

LIST OF TABLES

Table 1 Overview of international developments of IUU fishing issue	50
Table 2 Some high profile arrests of IUU fishing vessels by Ghanaian fisheries authorities....	54

INTRODUCTION

For many developing coastal States as well as the developed nations, the aspect of the 1982 United Nation Convention on the Law of the Sea (UNCLOS) that has had the most impact is the setting up of the Exclusive Economic Zone (EEZ).

This feature of the UNCLOS puts a huge percentage of almost all known and potential offshore mineral resources, as well as the most lucrative fishing grounds under the jurisdiction of some coastal state. Each coastal State has exclusive rights to the resources in its EEZ, as well as responsibilities and obligations as to their use and exploitation.

Hence for Ghana and other developing coastal States, the major impact of UNCLOS has been largely economic benefits, evident in the gains made since ratification in 1983. However, the responsibilities and obligations that came with these exclusive rights called for formulation of laws and policies to not only meet the requirements of the agreement but also aimed at maximizing and maintaining the economic gains made so far. Most of these policies have been able to live up to expectations to some extent. However certain indicators, especially in the Ghanaian fisheries sector, points to the fact that there are or may be several weaknesses in the policies thus far adopted. Given the current trend in global fisheries, the current state of the Ghanaian economy and the fact that over 2 million Ghanaians depend on the fisheries sector for their livelihood, it is imperative that solutions be found to deal with any shortfalls.

This research attempts to examine the policies formulated for the fisheries sector and identify the shortfalls (in implementation or otherwise) and to suggest solutions to them in a bid to aid in the improvement of the conservation and management of the marine resources of Ghana.

Chapter 1 of this paper gives a brief overview of the Ghanaian fishing industry, beginning with a description of the country's coastline. This is followed by an equally brief history on the development of the fisheries sector from as far back as the 18th century, through to the current state of the various components of the sector. The chapter ends with a short description of the economic aspect of the fisheries sector.

Chapter two forms the bulk of the paper and addresses the legal aspects of the Ghanaian fishing industry. The chapter is divided into three major parts. The first part describes the beginnings of

the legal backing of the industry using UNCLOS as a reference timescale. The second part of Chapter two discusses the current legislative framework governing the fisheries sector, describing some of the provisions and highlighting their significance in relation to international fisheries laws such as UNCLOS and the FAO Code of Conduct for Responsible Fisheries. The third part of Chapter two looks at the policy currently governing the fisheries industry: the Draft Ghana National Fisheries and Aquaculture Policy. This part not an in-depth discussion the policy but it gives highlights of the major contents stated in the draft. The aim here is to give an insight into the issues the policy would be focusing on and enable discussion on certain issues of interest to the author. The subsequent subsections of this part focus on these issues of interest, namely: illegal, unregulated and unreported fishing and monitoring control and surveillance both in the international and Ghanaian context. Broadly, the outline of the discussion on these issues consists of what is being proposed to be done by the international community, the current status in the Ghanaian fisheries sector, the problems being faced by the Ghanaian fisheries administration in relation to these issues and what can be done to solve the problems. All these themes are examined in relation to the draft Ghanaian policy and international fisheries agreements with some recommendations are suggested in the last chapter.

The paper ends with Chapter three outlining final views on the draft policy and recommendations respectively, with the recommendations being based largely on the issues of interest discussed in chapter three.

1.0. OVERVIEW OF THE GHANAIAN FISHING INDUSTRY

1.1. COASTAL MORPHOLOGY AND OCEANOGRAPHY OF GHANA

The Ghanaian coastline, measuring about 538 km long, comprises long stretches of sandy beach interspersed with rocky shores, estuaries and lagoons. These lagoons, estuaries and the many wetlands dotting the coastline form breeding grounds for many marine fish and crustaceans¹.

Fish production in Ghanaian coastal waters is driven by the oceanography of the western Gulf of Guinea, a seasonal coastal upwelling. For Ghana, this consists of a yearly major upwelling of about three month's duration (July – September) and a minor upwelling of about three weeks duration (December – January or February – March). The rich fisheries resources made available by this four-month upwelling is what supports the total fishing industry in Ghanaian waters.

1.2. BRIEF HISTORY

Ghana's fishery industry started as an artisanal fishery using very simple, low-efficiency gear and methods in lagoons, lakes, rivers, estuaries and marine waters very close to shore. Despite the simplicity of their gears and methods, the Ghanaian artisanal fishers were very industrious and adventurous, venturing as far as Liberian and Nigerian waters as early as the 1800s and early 1900s². The fishery was however mostly for subsistence purposes.

The commercial fishery sector did not emerge until later in the 1900s. Demand for fish and associated trade and investment opportunities encouraged the formation of fishing companies, many of which had foreign offices directing the operations of semi-industrial fishing operations

¹ Mensah, M A; Koranteng, K A; Bortey A; Yeboah, D A; The State of the World Fisheries from a Fish worker Perspective: The Ghanaian Situation.

² For more on the history of Ghana fisheries, see Atta-Mills, J; Alder, J; Sumaila, U R; 2004: The Decline of a Regional Fishing Nation- The Case of Ghana and West Africa Natural Resources Forum 28 (2004) 13–21. See also Hernæs, P O 1991: Modernizing Ghanaian Fisheries: The Need for “Social Carriers” of Technology Oslo: Ad Notam 1991.

in distant waters³. In 1946 the Department of Fisheries imported two 30-footer motorized fishing boats into the country for experimental fishing. The success with these boats prompted the setting up of a Boatyard Corporation in 1952 to build similar boats, and several wooden vessels with in-board engines were built within a very short time⁴. This development came two years after outboard motors for canoes were introduced into the country. These motors enabled the artisanal fishers to make bigger catches further out at sea more quickly in fewer hours or days than previously. Hence the combination of these occurrences made Ghana one of the leading fishing nations in the sub-region during the 1950s through the 1960s.

Around this same period a number of other African countries gained political independence. These new Governments viewed the Ghanaian companies in their countries as security risks and many were expelled⁵. This situation created problems for the Ghanaian fishing industry. Accessible fishing grounds within Ghana were already well exploited by both the artisanal and semi-industrial fleets and there were no new inshore fishing areas or fisheries to develop. Further, none of the fishing fleets in that period were equipped to fish in offshore waters.

In 1962 the Tema Boatyard was set up and large fleets of wooden vessels with in-board engines were built for the industry. To further strengthen the fishing industry, the State Fishing Corporation (SFC) was set up in the same year to attract entrepreneurs through the provision of loans⁶. The SFC also imported a large fleet of trawlers whose fishing activities occurred outside the continental shelf of Ghana, fishing off Angolan, Senegalese and Mauritanian coastal waters through bilateral agreements. Commercial tuna fishery also started in 1962 when the Government of Ghana entered into a long-term agreement with Star-Kist International of the USA⁷, paving the way for Ghanaian fishing companies to venture into and develop the tuna fishery. This fishery really took off during the 1970s and 1980s when it was expanded to offshore waters⁸. Unfortunately, a majority of the investments in the fisheries industry were not

³ Ibid

⁴ See Bannerman, P. O. 2001. Management of Conflicts in Tropical Fisheries Ghana Final Report

⁵ Agbodeka F. 1992. An Economic History of Ghana: From the Earliest Times. Ghana University Press, Accra.

⁶ See supra note 1

⁷ See supra note 3

⁸ Overa R. 2002 When sisters become competitors: Coastal women's success and utilization of trawlers' by-catch in Ghana. In: Neis, B., Binkley, M., Gerrard, S., Manesch, C. (Eds.), Gender, Globalization and Fisheries. Fernwood Publishing, Halifax, Canada.

well managed. This led to the collapse of many of the fishing companies, including the State Fishing Corporation during the 1980s and huge sums of money were lost plunging the industry into financial difficulties⁹. Adding to the financial difficulties were the lack of national human resources, lack of supporting infrastructure and the political instability of the late 1970s and 1980s which prevented the industry from recovering. As if these were not enough, the negotiations of United Nations Convention on the Law of the Sea (UNCLOS) and its final adoption in 1982 resulted in most of the other West African nations declaring their EEZs. Thus between 1976 and the late 1980s, Ghanaian fishing vessels were gradually shut out from their foreign fishing grounds and had to return to fish in home waters. By the 1990's inshore marine resources have been overexploited leading to the stagnation of the semi-industrial fleet and a continued decline of the Ghana fishing industry. These major factors and many others in the history of Ghana fisheries have contributed to the current state of the industry.

1.3. CURRENT STATE OF THE INDUSTRY

The fishery sector has two major components: the marine (sea and lagoons) and inland (lakes, rivers and reservoirs). The marine sector in turn is made up of a small-scale sector and industrial sector. The inland fishery is considered as small-scale¹⁰.

1.3.1. MARINE FISHERIES

The marine fisheries resource is exploited by a small-scale fleet of 11,213 dugout canoes, 57% of which are motorized. The fleet operates from 334 landing sites and land about 70% of the total marine fish production.

On the industrial level, the resource is exploited by an inshore (semi-industrial) fleet of 230 locally constructed wooden vessels operating from seven landing sites and land 2% of the total marine fish production. The steel vessels of the industrial fleet are made up of 48 bottom

⁹ Atta-Mills J., Alder, J., Sumaila, U. R. 2004 The decline of a regional fishing nation: the case study of Ghana and West Africa. *Natural Resources Forum* 28 (2004) 13–21

¹⁰ For a more on the current status of the fisheries industry in Ghana see Republic of Ghana Ministry of Fisheries National Fisheries and Aquaculture Policy – Final Draft 2008: “Background and Diagnosis” pp. 8-18. MOFI, Accra.

trawlers, 14 pair trawlers, 2 shrimpers, 33 pole-and-line and 10 tuna purse seiners operating from two landing sites. This fleet lands the remaining 28% of the total fish production¹¹. The industrial sector as a whole is in serious need of modernization, the fleet being relatively old and inefficient.

Thus the marine capture fishery lands an average of about 325,000 tons annually. Both small pelagic and demersal stocks are heavily, if not overexploited. For tuna stocks, the skipjack specie is underexploited while the bigeye and yellowfin are fully exploited. On the whole, the marine fishery resources are showing increasing signs of full exploitation or overexploitation.

1.3.2. INLAND FISHERIES

The inland capture fishery occurs mostly on the Lake Volta as well as other lakes, rivers and reservoirs. The fishery is comprised of 24,000 planked canoes of which 4% are motorized and operating from 1,232 fishing villages. The inland capture fishery lands about 150,000 tons of fish annually with an estimated 80% coming from Lake Volta. However, there is considerable uncertainty as to the exact contribution of inland fisheries to total production as statistical records are thought to considerably underestimate actual production. There are signs of overexploitation of the Lake Volta fishery resources, evident in the lesser number of species and predominance of relatively small-sized fish in catches. Rivers and reservoirs are less heavily exploited.

1.3.3. PROCESSING

The small-scale sector of the marine fishery and inland fishery include a thriving post-harvest sector involving many fish processors (mostly women), wholesalers and retailers. Post-harvest activities in the industrial sector are associated more with the wooden fleet. Fish from the steel vessels is destined for the three large cannery companies, transshipment or cold stores, although some (especially pair trawlers) sell directly to fish processors and retailers.

¹¹ Directorate of Fisheries (DoF) 2007: A Summary of Fisheries Statistics in Ghana (Mimeo): Directorate of Fisheries, Accra.

1.3.4. AQUACULTURE

Aquaculture is in a developmental stage in Ghana¹². The sector is dominated by non-commercial systems mostly using earthen ponds. 80% of the species produced in these systems are mainly tilapia, with catfishes (*Clarias* sp., *Heterobranchus* sp.) and *Heterotis niloticus* making up the smaller percentage. The commercial enterprises focus on tilapia and catfish culture for the upscale urban markets. At present, the total production from aquaculture and culture-based fisheries is 3,257 tons (up from the estimated 950 tonnes in 2004), with production rates of small-scale operators estimated at 1.5 tons/ha/yr.

1.3.5. ECONOMIC IMPACT OF THE FISHERIES SECTOR

Overall, Ghana's fisheries sector presently accounts for 4.5% of the national GDP and employs an estimated 2 million people¹³. Fish provides 60% of the animal protein needs of Ghanaians and national per capita consumption is estimated at 23kg, much higher than the global average of 13 kg per capita¹⁴. The three large canneries export over 90% of their products and this coupled with exports of various export species (frozen demersal fish, shrimps, lobsters, cuttlefish, smoked and dried fish) by local companies make up the export sector. Fish exports for 2007 earned a total of US\$ 170 million.

The country's total annual fish requirement is estimated at 880,000 tons while national fish production stands at an average of 420,000 tons. This leaves a deficit of 460,000 tons which is made up for through fish imports. Ghana imported 212,945.418 tons of fish, valued at US\$ 262 million in 2007¹⁵.

As can be inferred from the above, the Ghanaian fisheries sector is in crisis and steps need to be taken to arrest the situation. The question now is where to start looking for the problem arises. However, the answer is quite clear. Every resource has laws that govern the actions of the people involved in its exploitation. Be it the exploiters or conservators, all are governed by

¹² See FAO Fisheries and Aquaculture Department National Aquaculture Overview: Ghana for more on information on aquaculture in Ghana. Available on FAO website http://www.fao.org/fishery/countrysector/naso_ghana/en .

¹³ Ghana Statistical Service 2002: 2000 Population and Housing Census in Ghana - Summary report of final results. Ghana Statistical Service, March 2002.

¹⁴ DoF 2007: A summary of fisheries statistics in Ghana (mimeo) p. 2. Directorate of Fisheries, Accra.

¹⁵ Ibid

laws and regulations with regard to their relationships with the resource and all are expected to abide by these laws. The next section explores the government of the Ghana fisheries resources through the years of its history to the present.

2.0. FISHERIES GOVERNANCE IN GHANA

Fisheries in Ghana has over the years been managed and regulated by a number of laws and regulations. Yet, as noted by many authors and indicated by various research findings¹⁶, the status of fisheries management cannot be said to be satisfactory.

2.1. HISTORICAL DEVELOPMENT

2.1.1. INTRODUCTION

In order to well understand the development of fisheries governance in Ghana, it is important to identify a milestone to serve as a standard for indicating progress. For this purpose UNCLOS was selected because it represents an important milestone in international fisheries law, as well as a source of various important instruments that have served to shape the way fisheries is governed worldwide. Hence, this section examines fisheries governance in Ghana by examining legislation in two eras: the pre-UNCLOS and the post-UNCLOS eras.

A look at the Ghanaian legislation reveals that there have been four fisheries related legislation before the adoption of UNCLOS in 1982, and a further five¹⁷ since Ghana ratified in 1983.

2.1.2. PRE-UNCLOS LEGISLATION

The pre-UNCLOS legislation are as follows:

1. Fisheries Regulations LI 364 of 1964;
2. NRCD 87 of 1972 (Fisheries Decree 1972);
3. Fisheries (Amendment) Regulations 1977; and
4. AFRD 30 of 1979 and the accompanying regulation, Fisheries Regulation 1979 LI 1235.

¹⁶ See for example Rijavec L. 1980. A Survey of the Demersal Fish Resources of Ghana. CECAF/TECH/80/25 (En) pp. 28; Koranteng K. A. 1984. A Trawling Survey of Ghana. CECAF/TECH/84/03 pp. 72; Oliver P., Miquel J. 1987. Report on the Survey Carried out by the R/V Cornide de Scavedra in the Gulf of Guinea in 1986. Instituto Espanol de Oceanografia, Palma de Mallorca, Spain; Braimah, L. I., 1995 Recent developments in the fisheries of Volta Lake (Ghana). In: Cruz, R. R. M., Roest, F. C. (Eds.) Current Status of fisheries and fish stocks of four largest African resources. CIFA Technical Paper 30 pp. 111—34.

¹⁷ Some of these documents were not available for the author at the time of writing.

A study of these legislations reveal that major sections were dedicated to the building and importation of fishing craft and manning of the craft, with very little or no attention to means of effective conservation of the fisheries resources for which the craft were meant. This lackadaisical attitude towards conservation is actually a reflection of a worldwide mindset of the industry of that period, the perception that the fisheries resource was infinite. This was however more evident in the developing coastal States. For example, Ghana had a Wholesale Fish Marketing Act passed in 1963 before passing a fisheries regulation in 1964. Even when this was done, the focus was not on conservation but on the fishing vessels and their manning.

However in order to make a balanced assessment and have a good understanding of these laws, it is important to examine them in the context or environment within which they were passed.

The period from the late 1950s through the 1960s to the late 1980s could be considered the golden years of Ghana's marine fisheries, and in fact, Ghana fishing industry as a whole. The period recorded constant increases in the number of vessels in all sectors of the fishing industry. In 1960, 198 motorized vessels in all were registered, of which 193 were in the inshore fleet. The opening of the Tema Fishing Harbour gave further impetus for growth. As one author noted "there was a rapid expansion in the industrial sector" and by 1974 there were as many as 315 registered in the industry¹⁸. This rapid fleet expansion was followed by increased fish landings, an increase which by far exceeded the numerical growth of registered units. This obviously made the sector one of the most lucrative ventures available for Ghanaians and hence there was a lot of investment (both Government and private) in the sector.

The constant increase in fish landings year after year (refer to table 2 below), and the perception that the fishing resource was limitless, may well have been the reasons for the focus (whereby conservation concerns were sidelined for the regulation control of fishing vessels in the industry) of the fisheries related laws of this period. In fact, in the 1960s, strategies for fisheries development in Ghana were based on the assumption that the sea will set on limit on the amount of fish that can be caught off the shores of Ghana and the belief that Ghana has an

¹⁸ Hernæs, P O 1991 Modernizing Ghanaian Fisheries: The Need for Social Carriers of Technology. Ad Notam, Oslo.

enormous fishing potential¹⁹.

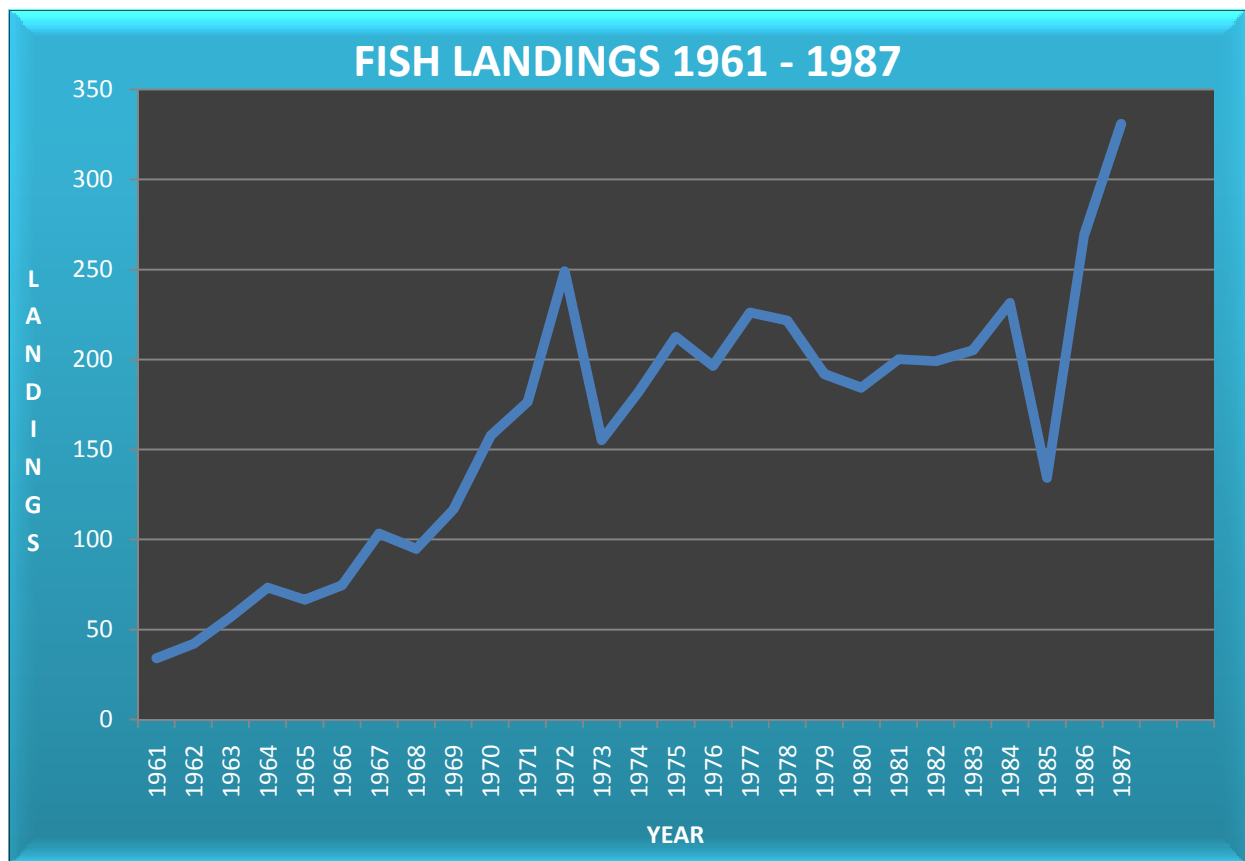


Figure 1 Marine fish landings in Ghana 1961 to 1987

Source: Compiled by author from Hernæs, P O 1991 *Modernizing Ghanaian Fisheries: The Need for Social Carriers of Technology*. Ad Notam, Oslo pp. 159-160

Another important factor to consider is the political milieu of the 1960s and 1970s. This period has been described as the euphoric years of aggressive nationalism and intense struggle for economic opportunity in the wake of Independence. Governments of this period felt under pressure to produce rapid economic results and major social improvements, and hence were unwilling to take any stands that might be considered unpopular or as attempts to frustrate Ghanaian economic enterprise because they wanted to consolidate their power basis. This political environment fostered all kinds of negative practices resulting in gross maladministration and mismanagement, evident especially in the Government enterprises. A

¹⁹ Ibid

typical example is the then Agricultural Development Corporation (ADC) which through its irresponsible administration of the Charter Party Scheme contributed immensely to the uncontrolled expansion of the industrial fisheries sector²⁰. These, combined with the fact that the then Fisheries Department was not endowed with the necessary powers to enforce regulations meant loss of purpose and direction of the industry in general. The industry was thrown open as a field of investment to anyone who could raise the required capital or with the “right connections”. Apparently the few successful ventures created a view of high profit potential and an atmosphere of over-optimism which drew the interest of not only Ghanaian investors but also of foreign investors as well. Thus, the prevailing hodgepodge of political unwillingness and instability, mismanagement and the impotence of the Fisheries Department contributed to the wild expansion of the fisheries industrial sector and may have necessitated the focus of the above mentioned laws since 1964 when the first Fisheries Ministry was created.

2.1.3. POST-UNCLOS LEGISLATION

There have been five fisheries related laws since Ghana ratified UNCLOS in 1983. These are:

1. Fisheries Regulation 1984 LI 1294;
2. Maritime Zones (Delimitation) Law, 1986;
3. PNDC Law 256 of 1991;
4. Fisheries Commission Act of 1993; and
5. Fisheries Act 625 of 2002.

These post-UNCLOS legislation show an increasing awareness of the need for conservation, with later ones going to greater lengths to achieve this objective.

The trend began with the passing of the Maritime Zones (Delimitation) Law. This law established jurisdiction over the EEZ, making it possible to determine (to some extent) exactly what is to be conserved and in what areas these measures are needed²¹.

²⁰ Ibid p. 33

²¹ In accordance with UNCLOS Article 56 which permits coastal states to claim exclusive rights over all natural resources, including fish stocks, located within 200 nautical miles of its baselines.

See also Brown, E. D.: “EEZ not a zone *ab initio* and *ipso jure*: the need to claim” in International Law of the Sea

The PNDC Law 256 of 1991 was then passed to begin the process of the conservation effort. It tried to do this through licensing, a widely used and recommended method to control access to the resource. In effect the major aim of the PNDC Law 256 was to manage or conserve the fishery resources by controlling access through licensing, establishment of fishing zones and restrictions on fishing gear to be used within and without these zones and in the industry as a whole, and establishment of Monitoring Control and Surveillance (MCS).

The PNDC Law 256 was followed by the Fisheries Commission Act of 1993. Defined as “an Act to establish a Commission, provide for its composition and functions relating to the regulation and management of the utilization of the fishery resources of Ghana and for connected purposes”, this law can be considered a major step in the efforts to manage the fisheries resources. With its main function of being responsible for the regulation and management of the utilization of the fisheries resources and co-ordination of policies in relation to them, the Commission had duties that included *inter alia* the establishing of systems to manage, protect and effectively use the fish resources to achieve the most productive use; foster international co-operation and collaboration in fisheries for the benefit of the nation within the framework of Ghana’s foreign policy and international commitments; and advise the Minister on the importation of fish as a supplement to local fish production. Hence, the Commission when established would be the mainstay of the whole fisheries management and conservation effort.

2.2. THE GHANA FISHERIES ACT 625 OF 2002

This is the regulation currently governing the fisheries sector. It amends, consolidates and attempts to streamline all the existing fisheries laws to address chronic and emerging issues whilst conforming to national and international fishery resource development and management strategies. By its very definition, the Act sets out to integrate international fisheries agreements into Ghanaian national legislation²². It emphasizes the importance of the Fisheries Commission by strengthening the legislation establishing the Commission.

Vol. 1: An Introductory Manual. p. 218.

²² The definition is quoted as follows “an ACT to consolidate with amendments the law on fisheries; to provide the regulation and management of fisheries; to provide for the development of the fishing industry and the sustainable exploitation of fishery resources and to provide for connected matters.”

2.2.1. THE FISHERIES COMMISSION²³

Due to the crucial role it is to play in the development and management of the fishery resources of Ghana, it is important to have an understanding of the makeup of the Commission and the provisions made for it under the Fisheries Act.

Specifically, Section 1 of the Act establishes the Fisheries Commission, and subsequent Section 2 states the main object of the Commission as “to regulate and manage the utilization of the fishery resources of Ghana and co-ordinate the policies in relation to them”.

Considering the interdependence of the various sections and the role of the fisheries sector in the economic growth of the country, the composition of the Commission is such that it must include the most important stakeholders in the sector. Thus, Section 4 (1) establishes the composition of the Commission as

1. A chairman (appointed by the President of Ghana in consultation with the Council of State);
2. One representative of the Ministry responsible for Transport;
3. One representative of the Ministry responsible for Defence;
4. One representative of the Ministry responsible for Environment;
5. One representative of the Ghana Marine Fishing Officers Association;
6. One representative of the Water Research Institute;
7. One representative of the Ghana Irrigation Development Authority;
8. Two representatives of the National Fisheries Association of Ghana – one representing artisanal fishermen and the other representing industrial fishing vessel owners;
9. One other person with requisite knowledge of the fishing industry or natural resources renewal management; and
10. The Director of the Commission.

Clearly the composition of the Commission as dictated by the Fisheries Act in including this wide scope of institutions not only ensures full participation of all the players in the fisheries sector (transport, environment, defense, research, fisheries, etc.), but also fulfills the duties of a coastal State as required by the UNCLOS with respect to, *inter alia*, exploring and exploiting,

²³ Part I, Section I, Ghana Fisheries Act 2002

conserving and managing natural resources²⁴, duty to conserve living resources²⁵, protection of shipping, marine scientific research²⁶ as well as pollution control and response²⁷.

The members of the Commission are to be nominated by the bodies concerned and are to be persons not below the rank of Deputy Director in the Civil Service, or in the case of a functional group in the private sector, not below the rank of a Vice-Chairman or its equivalent. By this measure, the Act aims to ensure that members of the Commission are competent high level decision makers with a wealth of experience in their fields of expertise, as well as ensure fair representation through democratic processes (with all its implications). Hence the requirement for nomination of persons by members of the bodies concerned. To further ensure transparency in all the dealings of the Commission, the Act provides that any member of the Commission who has a personal interest, directly or indirectly in any matter being considered by the Commission or a committee of the Commission shall disclose verbally or in writing the nature of the interest at a meeting of the Commission or committee and shall not take part in any deliberations or decisions of the Commission or committee with respect to the matter²⁸. Any member who fails to do so shall be removed from the Commission or committee.

With the exception of the Director of the Commission, each member has tenure of four years and may be reappointed on the expiration of the period²⁹. This provision is obviously aimed at ensuring a constant infusion of fresh ideas as well as a continuity of policies that are paying dividends.

The Fisheries Act 625 empowers the Commission to appoint committees it considers necessary for the effective implementation of its functions³⁰. Specifically, the Commission is urged to appoint:

²⁴ See UNCLOS Article 56

²⁵ Ibid article 61

²⁶ Ibid Part XIII

²⁷ Ibid article 40

²⁸ See Ghana Fisheries Act 625, Section 8.

²⁹ Ibid Section 5

³⁰ Ibid Section 9

1. Fisheries Settlement Committee³¹ to be composed of members of the Commission and charged to hear and settle complaints from persons aggrieved in respect to matters arising from or related to the fisheries industry³²; and
2. Fishing Licence Evaluation Committee³³ to be composed of technical officers of the Commission charged with evaluating applications for fishery licenses referred to it and to make recommendations on the application to the Commission within a specified period of time.

Bearing in mind the importance of and the need for consultations in all its workings, the Commission is empowered by the Act to co-opt any person as an advisor in its meetings³⁴. However such persons are not entitled to vote at meetings on which they serve. The Act goes further to provide that the Commission co-operate fully with all Government departments, agencies and other public authorities in performing its functions³⁵. Both of these provisions are designed to ensure that the Commission makes very well informed decisions and always has the full support of the Government agencies due to its relationship with them and also make it easier to harness resources of these agencies for its own purposes when the need arises.

The second part of the Ghana Fisheries Act 625 establishes a secretariat for the Fisheries Commission. The secretariat is to be headed by the Director of Fisheries appointed by the President of Ghana in accordance with the advice of the Commission given in consultation with the Public Service Commission³⁶. The Director shall be responsible for *inter alia* ensuring the efficient and effective implementation of the functions and directives of the Commission, the day-to-day management and administration of the units of the Commission and supervision of the Divisions of the Commission.

The Divisions of the Commission are established under Section 15. This section gives the Commission the power to establish such divisions in the secretariat as it considers necessary for the effective achievement of its objects and functions. The Divisions established are

1. Marine Fisheries Division;

³¹ Ibid section 10

³² This is in line with Article 297 dealing with dispute settlement. In this case it has been adapted to serve on a national dimension as well as international dimension.

³³ Section 11

³⁴ Section 7

³⁵ Section 13

³⁶ Section 17

2. Inland Fisheries Division;
3. Fisheries Scientific Survey Division (i.e. Fisheries Research);
4. Monitoring Control and Surveillance Division; and
5. Finance and Administration Division.

However, the Commission is also empowered to re-organize these Divisions as it considers appropriate³⁷.

The Divisions listed above cover every sector of the Ghanaian fishing industry and are in effect the policy-making, administration and enforcement structures of the Commission and are hence integral for the effective implementation of policies made regarding management of the fisheries resources of Ghana. In terms of human resources, each Division is to be headed by a Deputy Director and staffed with qualified public officers. The Heads of Division answer to the Director of Fisheries (to whom the Commission has delegated the function and that of drawing up the service charter of each Division) in performance of their duties.

To complete the setup, the Act establishes a planning and evaluation unit, a legal unit, internal audit unit, information management unit and empowers the Commission to establish such other units as it may determine as necessary³⁸. The importance of these units cannot be overemphasized as they cover the very basic aspects of every organization.

2.2.1.1. FINANCING THE COMMISSION: THE FISHERIES DEVELOPMENT FUND

Another important aspect that the Fisheries Act 625 deals with in the establishment of the Fisheries Commission is the matter of money for the Commission³⁹.

Finance is arguably one of the most important factors affecting natural resources management, especially in the developing coastal States, and for that matter, Ghana. This is actually one of the major forces behind the United Nations Convention of the Law of the Sea and other international conventions and explains the huge considerations given to developing countries party to them.

³⁷ Section 15 (2)

³⁸ Section 16

³⁹ Section 36

The Act establishes funds to meet expenditures of the Commission as consisting of money approved by the Ghanaian Parliament for the Commission⁴⁰, and such proportions of the monies in the Fisheries Development Fund as Parliament may direct as payable towards the expenditures of the Commission. In addition to these, the Commission is vested with borrowing powers by the Act⁴¹, empowering the Commission to obtain loans and other credit facilities on the guarantee of the Government from such banks and financial institutions as the Minister may approve, all of these subject to the provisions on loans as contained in the Constitution of Ghana⁴². Furthermore, the Act establishes a Fisheries Development Fund⁴³ and states the sources of monies for the fund as:

1. Fees for licenses, permits and other authorizations for fishing issued under the Act;
2. Damages and costs granted by the courts to the State in respect of any action under the Act or Regulation made under the Act;
3. Sums of money received from compounded offenses;
4. Proceeds of sale of forfeited items collected, imposed or received by or under the Act;
5. Such amounts of money that Parliament may approve for payment into the Fund; and
6. Loans and grants.

The overarching objective of this Fund is toward the promotion and development of fisheries in the country⁴⁴. It is also intended to be used to meet liabilities of the Commission in respect to the monitoring, control and surveillance of the fishery waters, provide assistance to small scale fishery co-operative enterprises, promote research studies of the fishing industry and such other purposes as may be determined by the Commission in consultation with the Minister.

Having thus underlined the key factors necessary for achieving objectives set out in national and international management strategies, the Act goes on to provide for several other important factors that also needed to be addressed.

⁴⁰ Section 24

⁴¹ Section 27

⁴² Article 181 of the Ghana Constitution

⁴³ See supra note 37

⁴⁴ Section 38

2.2.2. FISHERY PLANS

The Fisheries Act 625 of 2002 echoes the admonitions of the Code of Conduct for Responsible Fisheries in its provisions on fishery plans⁴⁵. It begins by stating that any fishery plan prepared for the management and development of fisheries should be based on the best scientific information available, ensures optimum utilization of the resources while avoiding over-exploitation and must also be consistent with good management principles. Each fishery plan, irrespective of the target water area or fish species for which it is meant⁴⁶ should:

1. Identify the fishery resource and its characteristics, economic and social values and interrelationship with other species in the ecosystem;
2. Assess the present state of exploitation of each resource and taking into account relevant biological and economic factors, determine the potential average annual yields from the resource;
3. Specify the measures to be taken to promote the development of the local fishing enterprises, both industrial and artisanal;
4. Determine the amount of the fishery resource to be made available to licensed foreign vessels;
5. Specify the conservation measures to be enforced to protect the resources from over-exploitation;
6. Indicate the research necessary to enhance management and development of fisheries; and
7. Take into account relevant artisanal fishery methods or principles.

A close study of these provisions shows they closely follow the suggestions for management measures proposed by the Code of Conduct for Responsible Fisheries.

In the process of formulating fishery plans, the Act directs that the Commission carry out consultations with organizations, authorities and persons affected by the fishery plan⁴⁷. Any person may reasonably be required to furnish relevant data and information on any matter required by the Commission to help recommend appropriate measures for the fishery plan. The consultation process is further enhanced by the provision that each fishery plan and review of such a plan be submitted to the Minister for onward submission to the Cabinet for approval,

⁴⁵ Section 42

⁴⁶ A fishery plan may relate to a specific water area or specified species of fish

⁴⁷ See section 44

after which the plan shall come into force at a time specified in the approval. The Minister is also charged to publish the effective date of implementation of an approved fishery plan in the Gazette and other mass media.

To facilitate sound recommendation on the international aspects of fishery plans, the Act provides that the Minister may and shall, on the advice of the Commission, consult with foreign Governments, either directly with the Governments or persons concerned, or through existing appropriate regional, sub-regional or international agencies⁴⁸. The purpose here is to ensure the closest practicable harmonization or co-operation of their respective fisheries management and development plans and regulations, systems for the collection of statistics, the carrying out of surveys and procedures for assessing the state of the fishery resource in the region. These are very essential, particularly for States sharing the same or interrelated fish stocks. Another important reason for this provision is to facilitate the formulation for sub-regional or regional fisheries management development plans including monitoring, control and surveillance, and for taking sub-regional or regional joint conservation measures.

2.2.3. LICENSING

A major portion of Part IV of the Act is dedicated to licensing. One primary purpose of fishing licensing is for the control of fishing opportunities so that regulations for sustainable fisheries can be met. The Fisheries Act sets out provisions outlining conditions under which licenses are to be issued for any fishing activity, be it in the local industrial or semi-industrial, artisanal or aquaculture sector.

2.2.3.1. CONDITIONS OF LICENCE

The structure of the provisions on licensing for each of the fishery sectors is basically the same, with the primary provision being that no person shall engage in any kind of fishing activity in Ghanaian fishery waters except under a licence issued under the Act⁴⁹. Conditions set out for qualification for licenses cover the issues of ownership, recognition of company or enterprise

⁴⁸ See section 45

⁴⁹ Section 46

by Ghanaian law (registration under Ghanaian law), registration under the Merchant Shipping Act (in the case of industrial vessels), seaworthiness, markings and identity, and crew composition.

Generally in all cases, the law requires that a Ghanaian citizen must own all or part of any fishery venture to qualify for a licence⁵⁰. Specifically, a licence for artisanal fisheries would not be issued unless the vessel is owned by a citizen of Ghana, a company or partnership registered in Ghana under the relevant law in which shares are beneficially held by a citizen. The canoe must be registered with the Commission through the District Assembly of the area where it is to be used and must bear markings of identity allocated it by the Commission. Similarly, a semi-industrial or industrial fishing vessel must be owned or controlled by a citizen of Ghana, the Government, or owned by a company or partnership registered by law in Ghana which has a principal place of business in Ghana and the major share of which is beneficially held by Government, a citizen, a public corporation established by law in Ghana or a combination of any of the above. In the case of a tuna fishing vessel, beneficial ownership by a citizen must be at least fifty percent (50%) of the shares in the vessel or partnership. This provision has its basis rooted in the factors that caused the collapse of many Ghanaian fishing companies during the 70s and 80s⁵¹, and are more or less meant to safeguard against the recurrence of such situations, as well as for other benefits for Ghanaian entrepreneurs.

In addition to the above requirements, the vessel must have been registered under the Ghana Merchant Shipping Act 1963 (Act 183). It must be certified as seaworthy and fit for the purpose of fishing, conform to all requirements applicable to it under any enactment(s) in force, as well as bear identity markings allocated to it by the competent authority. In terms of crew composition, seventy-five percent (75%) of the crew must be Ghanaian, failing of which amounts to an offence liable on summary conviction to fines and forfeiture to the State all catch and gear used in commission of the offence⁵².

⁵⁰ See for example sections 47 and 52

⁵¹ Hernæs P O in *Modernizing Ghanaian fisheries: the need for “social carriers” of technology*, Ad Notam, 1991. The author discusses results of research carried out on the Ghanaian fisheries industry to determine the factors that contributed to its collapse and suggest solutions. Among other suggestions one recommendation expounded the on the need and benefits of having foreign partners in Ghanaian companies.

⁵² Section 50

2.2.3.2. THE APPLICATION PROCESS

Application for fishery licence is similar for all sectors of the fisheries industry. For artisanal fisheries, all applications are made to the Fisheries Commission through the District Assembly of the locality where the applicant intends to operate, and the Act provides that these applications be granted without delay if they meet the requirements for set for the sector⁵³. For local industrial or semi-industrial and industrial licenses, applications are made to the Commission in such a form prescribed, with documents and application fees determined by the Commission⁵⁴. Applications are to be evaluated by the Fishery Licence Evaluation Committee which must return its evaluation within 14 days to the Commission. The Commission makes its recommendations within 14 days of receiving the evaluation to the Minister who then issues a licence based on the recommendations.

A licence issued for operation in any fishery sector is required by the law to:

1. Specify the period of validity of the licence;
2. Indicate the activity for which the licence is issued; and
3. State the markings and identity of the vessel.

2.2.3.3. RENEWAL AND TRANSFER OF FISHING LICENCES

According to the Act, a fishing licence issued under the Act on application to the Commission, may be renewed subject to fulfillment of such conditions as the Commission may determine. Transfer of fishing licenses may be done only if the Director has been notified in writing prior to the transfer by the parties involved⁵⁵ and the Commission approves the transfer on such conditions as it may determine. Specifically for artisanal vessels Section 57 provides the conditions that the canoe to which the license is transferred must be of equal dimensions and characteristics, and is to be operated in the same locality as the one previously licensed. In the case of change of ownership, both new and previous owners must notify the Director of Fisheries of the transfer in writing. The director will endorse the transfer is the conditions

⁵³ Section 53

⁵⁴ Section 48

⁵⁵ See for example sections 57 and 75

above are satisfied.

For industrial and semi-industrial fishing licence transfers⁵⁶, the written permission of the Minister for the transfer will be endorsed on the licence on the additional condition that the transferee qualifies to hold a fishing license as provided in the Act. Otherwise, the Minister, in order to give effect to a fishery management and development plan approved under the Act, may in writing direct that a licence to engage in a fishery may not be transferrable or that the surrender of licenses may not give rise to certain rights to new licenses, or may set other conditions under which permission may be given in respect of transfer of licenses⁵⁷.

To ensure continued compliance with other laws, the Act categorically states in Section 77 that a fishing licence or other authorization issued under the Act does not relieve any licensee, or the master or crew of a fishing vessel of any obligations or requirements imposed by law concerning navigation, health, customs, immigration or any other matter.

2.2.3.4. FOREIGN FISHING VESSELS

Part IV of the Act also deals with the issue of fishing by foreign fishing vessels in Ghanaian fishery waters. First of all, the law controls activities of foreign fishing vessels by stating that:

- “(1) A foreign fishing vessel shall not fish or attempt to fish within the fishery waters of Ghana except
 - a) Under a licence issued under this Act
 - b) As may be otherwise authorized under any agreement between the Government of Ghana and the government of the country in which the fishing vessel is registered or otherwise belongs
- (2) A foreign fishing vessel shall not enter the fishery waters of Ghana unless

⁵⁶ Ibid p.28

⁵⁷ Section 76

- a) Authorized to do so by the terms of a licence or permit issued it under this Act or under any applicable access agreement in force;
or
- b) It is under circumstances recognized by international law

(3) Subsection (2) does not apply to a foreign fishing vessel entering the fishery waters for the sole purpose of innocent passage; or by reason of force majeure or distress or for the purpose of rendering assistance to persons, ships or aircraft in danger or distress or for any other purpose recognized by international law.”⁵⁸

The Act goes on to define the conduct of foreign fishing vessels in Ghanaian fishery waters as follows:

- “(4) A foreign fishing vessel entering the fishery waters for any of the reasons specified in subsection (3) shall
- a) Observe Regulations made under this Act including Regulations on storage of fishing gear
 - b) Not fish, attempt to fish, load, unload or transship any fish
 - c) Return to outside the fishery waters as soon as the purpose for which it entered has been fulfilled or the reason has ceased to be valid.”⁵⁹

The same section further outlines the penalties for any foreign fishing vessels that contravene the provisions in the above subsections.

Activities of crew and other persons aboard foreign fishing vessels are also governed by provisions in Section 62, which states *inter alia*, that “A foreign fishing vessel in a place in the fishery waters shall be operated in such a way that activities of local and artisanal fishermen and fishing vessels are not disrupted or in any other way adversely affected.”

The issue of licensing of foreign vessels is a very important one due to the many related issues

⁵⁸ Section 61

⁵⁹ Ibid

of international dimensions attached to it. Primary among these are the 1995 UN Fish Stocks Agreement, 1993 FAO Compliance and IPOA on IUU fishing. Thus, the Act is guided by both national objectives and requirements of international agreements concerned with these issues of which Ghana is party. Hence, on the issue of licensing foreign fishing vessels, the Act states:

- “(1) A licence shall not be issued under this Act which authorizes a foreign fishing vessel to engage in fishing in the fishery waters except under an access arrangement made under this Act
- (2) Subsection (1) does not apply to a licence issued in the absence of an applicable access arrangement in respect of
 - a) Marine scientific research
 - b) Trial fishing operations”⁶⁰

The above provisions notwithstanding, the law authorizes the Minister, on the recommendation of the Commission, to issue a licence to a foreign fishing vessel authorizing it to be used for such fishing or related operations as may be specified in the licence, or for other purposes in accordance with the Act. However, in order to comply with international requirements as well as safeguard against IUU fishing, the Act provides that *inter alia*

- “(4) The Minister shall not issue a licence to a foreign fishing vessel unless it is satisfied that the vessel
 - a) Is registered in accordance with the law in its flag state; and
 - b) A certificate of seaworthiness has been issued for the vessel by the competent authority or by the International Association of Classification Societies (IACS).”⁶¹

In connection with Section 61 (2), the Act makes provisions for fisheries access arrangements⁶²

⁶⁰ Section 63

⁶¹ Section 64

⁶² This provision is also in connection with Article 62 of the 1982 UN Convention

in Section 64 by the following:

1. The Minister may on the advise of the Commission enter into international arrangement on behalf of the Government with any foreign government, foreign association or other legally constituted foreign body which has power and authority to enforce compliance with the terms of the access arrangement
2. An access arrangement shall provide for the allowable allocation of fish which shall not exceed a level consistent with the conservation and management of fishery resources, provide for the protection of local fishermen and shall also be consistent with any fishery plans
3. Every access arrangement shall include such provisions as may be required to implement minimum terms and conditions of fisheries access in accordance with this Act, including
 - a. Establishing the responsibility of the foreign party to take measures to ensure compliance by its vessels with the terms and conditions of the access arrangement and with all applicable laws, including those relating to fishing and related activities in the fishery waters
 - b. The issuance of licenses and payments of fees for fishing related activities or other activities or operations described in the Act
 - c. Provisions that the owner, charter, operator, master or any other person responsible for the operation of a licensed vessel shall not transship fish at sea except only at designated times and places and in accordance with this Act.⁶³

Finally, to support provisions made under Section 64, the Act makes provisions for another important issue: marine research and trial fishing. Succinctly put, research forms the basis of any management strategy and is hence an integral requirement in duties of member States of all international agreements. Accordingly, the Act makes the following provisions for research:

1. Where there is no applicable access arrangement, the Minister on the advice of the Commission may authorize marine scientific research or trial fishing operations in the fishery waters upon completion of procedures required under this Act
2. An authorization under subsection (1) shall have attached such conditions as the Minister may determine
3. An authorization granted under this section shall be in writing and be in the form as may be determined by the Minister

⁶³ See supra note 59

4. A person authorized in accordance with this section shall comply with all applicable laws of Ghana and the conditions of the authorization
5. The Minister may refuse to issue, suspend or cancel the authorization in accordance with this Act if there is failure to comply with the requirements of this Act or the conditions of the authorization.⁶⁴

Other requirements under the Act for the issuance of licences to a foreign fishing vessel are the appointment of agents and posting of bonds. Section 67 empowers the Minister to require that, prior to the issue of a fishing license to a foreign fishing vessel in which there is no Ghanaian ownership or shareholding, the applicant appoints an agent within Ghana, who is a citizen or non-citizen who has resided continuously with Ghana for a period of at least five years immediately prior to the proposed appointment, with no record of conviction, and the person shall be authorized to receive and respond to any legal process issued in Ghana with respect to the activities of the vessel, its owner, operator, master and crew members.

In relation to the posting of bonds, the law empowers the Minister to require that, prior to the issuer of a fishing licence to a foreign fishing vessel, the applicant or its authorized agent posts a performance bond which may be applied for the payment of any fine, penalty or other determination of any offence under the Act committed by or in respect of that vessel or for any liability in relation to the vessel arising under the Act⁶⁵. Further, the Minister may require that the posting of a performance bond during the period of validity of the license shall be a condition for the licence.

2.2.3.5. REGISTER OF LICENCES

Every licence issued by the Commission under the Act is to be entered into a Register of Licences maintained by the Commission⁶⁶. The register is to contain information on:

1. The vessel

⁶⁴ Section 65

⁶⁵ Section 68

⁶⁶ See section 79

2. Person or project licensed
3. The nature of the activity licensed
4. The period of validity
5. Other additional information relating to the licences as the Commission may determine.⁶⁷

2.2.3.6. FISHERIES APPEALS BOARD

To further facilitate the work of the Commission in respect to licensing, the Act establishes a three member Fisheries Appeals Board⁶⁸. The membership of the board is as follows:

1. One representative of the Attorney-General's Department not below the rank of a Chief State Attorney who shall be the Chairman
2. One person appointed by the Minister
3. One representative of the fishing industry who is not an interested party in the subject matter of the appeal.

The establishment of the Board provides an avenue for persons aggrieved by a decision to refuse to issue or renew a licence or modify, cancel or suspend a licence under to Act, to appeal and seek redress. Such persons are to appeal within fourteen days of being notified of the decision to the Fisheries Appeal Board for redress. The Board may confirm, reverse or vary the decision appealed against. The Act further provides that a person dissatisfied with the Board's decision may seek such redress as that person considers appropriate from the law courts⁶⁹.

2.2.4. ESTABLISHMENT OF FISHING ZONES

In accordance with international management strategies, the Fisheries Act establishes fishing zones and sets out prohibitions of fishing inside these zones. Section 81 of the Act establishes a

⁶⁷ Ibid

⁶⁸ Section 78

⁶⁹ Ibid (4)

fishing zone declared as the Inshore Exclusive Zone (IEZ) of Ghana⁷⁰. This zone is to be used exclusively by the artisanal fishery sector, small-industrial vessels and recreational fishing vessels. No canoe support vessel or towing gear are to be used in this zone. Industrial and semi-industrial vessels are prohibited from this zone. Any such vessel passing through the zone must ensure that it does not destroy the fishing gear of artisanal fishermen. The Act spells out penalties for offenders (particularly industrial and semi-industrial fishing vessels) which include, in cases where artisanal fishing gear is destroyed, full compensation for the destroyed gear either in cash or in kind and adequate compensation for lost fishing time⁷¹.

These provisions notwithstanding, the Commission may at such periods it considers appropriate permit large semi-industrial vessels to enter the IEZ to capture cephalopods. The Director may also, on written guidelines by the Commission, exempt in writing a research or any other fishing vessel from these provisions.

2.2.5. FISHING ACTIVITIES AND FISHING GEAR

The Act empowers the Commission to declare closed seasons for fishing in specified areas of coastal waters or riverine systems. Such declarations are to be well publicized if possible well in advance of the closed season. The Act also provides that any closed season declared by any international body of which Ghana is a member shall be regarded as a closed season under the Act⁷².

The Commission is directed to by Regulation prescribe gear restriction for the fishing

⁷⁰ The IEZ is essentially a narrow band of coastal waters along the Ghanaian coast extending from the point of low or high tide to a depth of 30meters offshore.

⁷¹ Section 83

⁷² Section 84. For example there has been recent calls for ICCAT (to which Ghana is party) to establish an extended closed season on the bluefin tuna fishery in the East Atlantic and Mediterranean Sea. This measure if implemented would in turn be implemented in Ghana by Section 84 of the Ghana Fisheries Act 625, 2002. It is however interesting to note that many groups claim this call, along with those for a moratorium for the bluefin fishery for 2008, is being ignored by ICCAT. This was especially after ICCAT increased, rather than reduced the quota for the fishery at the 16th ICCAT Special Meeting of the Commission held in Marakesh from the 17th – 24th November, 2008. See for instance OCEANA, Oceana Position Paper 16th ICCAT Special Meeting of the Commission Marakesh 17-24 November 2008 available at www.oceana.org; WWF News Archive, Tuna Commission comes up with a “disgrace, not a decision” published November 24, 2008 available at www.panda.org/tuna and WWF International Background Briefing: Pretending to be guided by science – timeline of a fishery failure Eastern Atlantic and Mideterranean bluefin tuna, November 2008. Available at www.panda.org/media. Accessed 22 December, 2008.

industry⁷³. The Act sets out conditions for use of submerged stationary fishing gear, prohibits driftnet fishing activities and sets out penalties for offenders. Furthermore fishing methods such as those involving the use of explosives, poisons or other obnoxious substances and possession of such substances on vessels or within a prescribed distance of a waterbody, as well as landing or sale of fish taken by means of these methods of fishing are made offences punishable by heavy fines under the Act.

2.2.6. CONSERVATION MEASURES

Conservation measures prescribed by the Act cover the following areas⁷⁴:

1. Protection of gravid and juvenile lobsters, other crustacean and juvenile fish as well as marine mammals
2. Protection of the fishery waters from pollution
3. Inclusion of fisheries impact assessments as part of EPA requirements of EIA for any activity other than fishing that is likely to have a substantial impact on the fishery resources or other aquatic resources of Ghana.

2.2.7. MONITORING, CONTROL, SURVEILLANCE AND ENFORCEMENT

Another important provision of the Fisheries Act is the establishment of an Enforcement Unit. According to the Act the Unit will be responsible for⁷⁵:

“Monitoring, control and surveillance of all fishing operations within the fishery waters by whatever appropriate means, including the management and running of a satellite base station for using satellite communications for data transmission relating to the activities of

⁷³ See Sections 85 to 88

⁷⁴ See sections 89 to 93

⁷⁵ See section 94

foreign fishing vessels licensed to operate within the EEZ and the enforcement of the Act, Regulations made under the Act and any other enactment relating to the regulation of fishing activities.”

The Act empowers the Minister to request personnel from other Departments, agencies of State and other competent bodies or organizations to assist the Enforcement Unit, which is basically to be comprised of personnel from the Ghana Navy, Ghana Air Force and the Secretariat of the Fisheries Commission. These personnel are given Police and other powers under the Act both within the Ghanaian EEZ and beyond the limits of the EEZ when the need arises⁷⁶. They are also given full insurance coverage for the duration of their sea duties, as well as indemnity from prosecution for acts done in good faith in the performance of their functions under the Act⁷⁷. Duties of authorized officers of the Enforcement Unit towards masters and crew of vessels and vice versa, the compliance of masters and crew with directives of authorized officers, as well as penalties for contraventions to the directions are set out by the Act⁷⁸.

The issue of detention, sale, release and forfeiture of property where offences are committed are also dealt with by the Act, which makes provisions for issues such as court’s power of forfeiture, application of bond, disposal of forfeited goods and liability for loss, damage or deterioration of items in custody⁷⁹.

2.2.8. JURISDICTION AND EVIDENCE

The Act establishes jurisdiction of the law courts over acts or omissions in contravention of a provision of the Act by a person within the fishery waters, or outside the fishery waters by a Ghanaian citizen or a person ordinarily resident in Ghana, or by a person on board a local fishing vessel. According to the Act, “such matters shall be dealt with in such a court as the

⁷⁶ Section 97

⁷⁷ Sections 104 and 105

⁷⁸ For example Section 101 stipulates that an authorized officer or observer forced by circumstances to stay onboard a vessel for a prolonged period of time shall be provided for by the operator of the vessel at no expense to the officer, failing of which amounts to an offence which on summary conviction attracts a fine not exceeding \$1 million.

⁷⁹ Sections 106 to 114

Chief Justice may determine.”⁸⁰ In the case of a foreign fishing vessel, the matter shall be dealt with by the High Court⁸¹. The jurisdiction of the courts also cover contraventions to directions of authorized officers exercising powers conferred on them in accordance with the Act even outside the fishery waters of Ghana. Provisions are also made by the Act on issues such as compounding of offences and evidence. The provisions on evidence cover certificates of evidence, their validity and procedures, designated machines and photographic evidence and presumptions, onus of proof and destruction of evidence⁸².

Section 125 touches on the liability of masters and officers of companies. The Act makes the masters of vessels liable for offences committed by crew members and companies liable for offences committed by masters of vessels belonging to the company.

2.2.9. CONCLUSION

To sum up, the Ghana Fisheries Act 625 of 2002 practically covers every aspect of the fisheries industry and is consistent with the current global fisheries management and development strategies, making provisions to draw on other laws that address issues it does not cover⁸³. It is thus a comprehensive piece of legislation with an international character and dimension, a sound foundation on which to base a national fisheries policy.

⁸⁰ Section 115

⁸¹ Ibid

⁸² Sections 117 to 124

⁸³ The Act in Section 77 maintains the integrity of other laws in stating that the granting of a fishing license or other authorization does not relieve a licensee, or the master or crew of a fishing vessel of any obligations or requirements imposed by law concerning navigation, health, customs, immigration or any other matter. While not stating exactly which laws to draw on, Section 139 paves the way for enactment of regulations concerning fisheries and related areas (such as transport and communications) that have direct bearings on fisheries.

2.3. THE DRAFT NATIONAL FISHERIES AND AQUACULTURE POLICY⁸⁴

The National Fisheries and Aquaculture Policy is structured around four major policy areas⁸⁵.

These are:

1. management of fisheries, conservation of aquatic resources and protection of their natural environment;
2. promotion of value addition and improving the livelihood of fisheries communities;
3. development of aquaculture; and
4. improvement of services provided to the sector by the Ministry and other institutions.

These four strategic areas stem from the vision the Ghana Government has for the sector over the next 15 years, the mission of the Ministry of Fisheries, and strategies for the sustainable development of the sector.

The vision for the sector takes into consideration its characteristics, potentials and constraints and aims to contribute significantly to socio-economic development through food and nutritional security and poverty reduction in a sustainable and economically efficient manner within the natural limits of capture fisheries resources and environmental protection requirements and with strongly established bases for accelerating growth in aquaculture production⁸⁶.

With respect to making significant contributions to economic development, the policy aims at making contributions that would be recognized, measurable and attributable to the sector, while the emphasis on sustainability and environmental protection imply recognition by the policy of the current global shift towards these views.

The mission of the Ministry of Fisheries is to promote sustainable fisheries and aquaculture through research, technical support services, regulations, institutional building for co-management and stakeholders' participation, provision of statistical and economic intelligence information, MCS services, regional co-operation and the active promotion of livelihood

⁸⁴ The final draft of this document has been prepared with close collaboration between MOFI and FAO and is to form the basis of consultations with stakeholders before finalization by MOFI.

⁸⁵ Republic of Ghana Ministry of Fisheries National Fisheries and Aquaculture Policy, Final Draft, 2008 p. 21

⁸⁶ Ibid p. 19

improvement in fishing communities⁸⁷.

Of the three objectives of the Ministry of Fisheries, i.e. making significant contributions to economic development, ensuring food security and poverty reduction, food security is the key reference for action by the Ministry and underlies the drive to achieve sustainable outcomes through effective fisheries management.

The following national development priorities and general principles inform and guide the National Fisheries and Aquaculture Policy⁸⁸:

1. Poverty reduction: consideration is given to the national agenda for poverty reduction in connection with actions undertaken in the sector ;
2. Decentralization: in line with current practice, decentralized and community-based institutions play a key role in co-management and development ;
3. Divestiture of government function: involvement of government in activities that can be carried out by the private sector is avoided ;
4. Gender: the very active participation of women and youth in the sector is recognized and accounted for ;
5. Code of Conduct: Actions are guided by the FAO Code of Conduct for Responsible Fisheries, its supporting international fisheries instruments and related technical guidelines ;
6. Stakeholder participation: the Policy supports stakeholder participation at community level and industry level with regards to fisheries management and sector development ;
7. Sustainability: the Policy seeks to avoid the overexploitation of fisheries and detrimental environmental impacts. In case of uncertainty, a precautionary principle is applied and effective action is taken to reduce the risk of serious harm to fish stock, habitats and the environment in general ;
8. Conservation: the policy seek to ensure wise use of fish and fishery resources to conserve genetics and biodiversity
9. Research: the policy seek to ensure that scientific research should be the basis to drive development and management of the fisheries sector
10. Education, Training and Public Awareness: will ensure education and training of all stakeholders and also public awareness creation of the fisheries sector
11. Equity: Equity guides Government action in general and in relation to the specificities of the sector. Intergenerational equity is sought through resource management and environmental protection. Gender-related equity is sought in participatory and co-management processes. The user pays principle is applied whereby users of common property natural resources such as fisheries pay access fees and contribute towards the cost of managing fisheries for the benefits of future generation ; and

⁸⁷ Ibid p 19. See also Government of Ghana Ministry of Fisheries Mission Statement at http://ghana.gov.gh/ministry_of_fisheris

⁸⁸ Ibid p. 20

12. Transparency and accountability. These general principles of good governance also guide Government action.

2.3.1. GENERAL LAYOUT AND DESCRIPTION OF THE POLICY

Each of the four strategic areas on which the policy is structured is referenced to a strategic goal for which a course of action is drawn up, with the aim of achieving a specific set of operational objectives for the area in focus.

2.3.1.1. POLICY AREA 1: MANAGEMENT OF FISHERIES, CONSERVATION OF AQUATIC RESOURCES AND PROTECTION OF THEIR NATURAL ENVIRONMENT

The main goal of the policy with respect to this area is the effective implementation of fisheries management and conservation measures to ensure the long term contribution of fisheries to the national economy and to allow the present generation to meet its needs without compromising those of future generations⁸⁹. Hence the objectives set for this area are designed to address the problems of over-exploitation, environmental degradation and unsustainable fisheries in general through the strengthening of the regulatory framework to ensure effective implementation of conservation and habitat protection measures.

The operational objectives are as follows⁹⁰:

1. To establish advise on specific management and conservation measures based on regular assessments of the status of fisheries and their aquatic environment.
2. To ensure the sustainability of commercial fisheries through appropriate regulations.
3. To protect biodiversity and habitats of the aquatic environment.
4. To improve the effectiveness of stakeholder institutions and mechanisms for co-management.
5. To combat IUU fishing through more appropriate regulations and more effective monitoring, control and surveillance.

⁸⁹ Ibid p. 22

⁹⁰ Ibid p. 22

6. To promote national and international collaboration for coordinated fisheries management and conservation.

In short, the objectives stated above tackle issues of monitoring and assessment, adaptation of management measures, protection of aquatic environments, promoting co-management, strengthening MCS and enhancing regional collaboration. In line with these, courses of action drawn up for each of the above objectives.

For the first objective, the courses of action include the assessment and streamlining of statistical monitoring to improve on the quality of information regarding fishing units, catch and data effort. Another course of action is to conduct a cost benefit analysis of a lesser reliance on the routine collection of data and a greater emphasis on periodic frame surveys and catch-effort surveys⁹¹.

The course of action for adaptation of management measures include periodic assessment of fisheries management measures, their relevance in a changing environment, the degree to which they are implemented and their effectiveness. Those measures that are of very limited use to the purpose for which they were introduced or are very difficult to implement, are to be expressly deleted from the regulatory framework⁹².

The protection of aquatic environments, according to the policy document, will involve actions such as monitoring aquatic biodiversity and key habitats through periodic assessments so as to identify critical changes and their origin, identify vulnerable marine and freshwater ecosystems and advise on steps that could be taken to prevent adverse effect on these ecosystems⁹³.

Promoting co-management, the fourth objective, will involve actions such as pursuing efforts to establish decentralized and community-based fisheries management through the establishment of Community Based Fisheries Management Committees (CBFMCs) and District Fisheries Management Committees (DFMCs), as well as promoting the involvement of NGOs in supporting the process of fisheries co-management⁹⁴.

To strengthen the MCS, the policy document proposes the elaboration and adoption of a

⁹¹ Ibid p. 23

⁹² Ibid p. 23

⁹³ Ibid p. 24

⁹⁴ Ibid

national plan of action to combat IUU fishing, in line with the FAO International Plan of Action. Another action is to strengthen and increase the coverage of observer programmes.

Finally, enhancing regional collaboration will involve pursuing collaboration with the West Africa Sub-Regional Fisheries Commission (SRFC) and the World Bank with the aim of improving governance and MCS for fisheries management, and collaborating with the International Convention for the Conservation of Atlantic Tunas (ICCAT) for the management of tuna fisheries with emphasis on managing existing fisheries and promoting further development of the Ghanaian fishery within allocated quotas.

2.3.1.2. POLICY AREA 2: PROMOTE VALUE ADDITION IN THE FISHERIES SECTOR

The goal here is to promote the concept of adding value to products throughout the production of chain, from harvesting to marketing, with due consideration being given to better exploit the economic potential of fisheries within the biological limits imposed on production⁹⁵.

This goal takes into consideration the fact that there cannot be any significant increase in fish production given the current fully or over-exploited status of the nation's fishery resources. However, further economic gains can be made by the sector by producing better, in terms of increasing value addition at the harvesting, processing and marketing levels for products destined for major national and international markets. Hence the operational objectives for achieving this goal are:

1. To monitor and assess value added creation in the fisheries sector as a way to inform the policy making process.
2. To enhance net returns from small scale fishing operation through cost reduction approaches and improvements in the the quality of landings.
3. To enhance net returns from semi-industrial and industrial vessels through fleet modernisation and improvements in the quality of landings.
4. To improve the economic contribution of post harvest operation through loss reduction, enhanced quality of fisheries product, and market development.

⁹⁵ Ibid p. 27

5. To promote exports and increased value addition in the supply of remunerative foreign markets.

The course of action for achieving the value chain analyses (objective 1) include conducting value chain analyses for main fisheries products and markets with the view of acquiring better understanding of the origin and allocation of value added and the documenting and building awareness of best practices relevant to fishing, landing, processing and marketing, starting with small scale operation⁹⁶.

Enhancing net returns from small scale fishing operations will involve actions such as streamlining the management of landing sites with emphasis on co-management and promotion of best practices, seeking financing nationally or through development partners to pursue efforts already undertaken to equip major landing sites with modern facilities, and encouraging the establishment of equitable and efficient linkages between fisheries and post harvest operators to ensure greater value added creation and equitable allocation of added benefits⁹⁷.

Similarly the objective to enhance net returns from semi-industrial and industrial fishing will involve actions such as ensuring effective collaboration between institutions and stakeholders to streamline the management of fishing facilities in major ports with a view of creating a more appropriate working environment that reduces delays and loss in fish quality⁹⁸.

The operational objective concerning post-harvest activities will involve promotion and facilitation of financing the equipment of all landing sites, processing areas and markets with hygienic and sanitary facilities and creating awareness on the importance of cleanliness for fish quality, as well as facilitating the establishment of modern fish processing facilities in major small scale landing sites in collaboration with relevant institutions and encourage the production of upscale traditionally processed products through market differentiation and labeling⁹⁹.

The final operational objective for policy area 2, safe fish products for local and export markets, will employ actions such as promoting eco-labeling for selected export-oriented fisheries for

⁹⁶ Ibid. Paragraphs 1 and 3. pp. 27-28

⁹⁷ Ibid. paragraphs 1, 4 and 6. p. 28

⁹⁸ Ibid p. 28

⁹⁹ Ibid pp. 28-29

both small and large scale fisheries sectors and assisting the processing industry in improving quality and hygiene standards in relation to HACCP requirements and facilitating their approval as exporters to key market such as the EU market¹⁰⁰.

2.3.1.3. POLICY AREA 3: ESTABLISH THE BASIS REQUIRED FOR AQUACULTURE DEVELOPMENT

The goal for this policy area is to promote aquaculture by establishing strong basis for its accelerated development, with emphasis on commercial aquaculture and access by farmers to markets¹⁰¹.

The importance of this policy area stems from the recognition of the limitations of the Ghanaian fisheries sector, imposed by its current fully exploited or over-exploited state. With aquaculture looking like the potential choice to play the key role of bridging the deficit gap between demand and supply, the most pressing priority at present is to build a strong aquaculture basis for future development. Again recognizing that the subsistence approach to fish farming, while socially appealing, faces severe objective constraints, the policy aims to encourage commercial farming on a scale that is appropriate to profitability requirements and for markets for which aquaculture can compete with capture fishery products.

In line with this goal, the operational objectives for the policy area are as follows:

1. To ensure appropriate inputs for aquaculture operation, especially with regard to the quality of fish seeds or fingerlings and fish feed.
2. To recognize the complementary role of private and public sector at this stage of development.
3. To provide education and training.
4. To strengthen extension and outreach services for fish health and research.
5. To build strong partnerships among public institutions and farmers.
6. To promote appropriate production system in appropriate locations while ensuring that conflicts on land or water use do not occur.

¹⁰⁰ Ibid

¹⁰¹ Ibid p. 30

7. To establish quarantine and certification measures and develop guidelines for introduction of exotic fish species
8. To develop guidelines on culture based fisheries
9. To develop guidelines in collaboration with relevant institutions on Environmental Impact Assessment (EIA)
10. To define regulatory framework on Aquaculture Development

The course of action to achieve the objective related to inputs for aquaculture operation will involve compiling periodic information on seed and feed producers or intended producers, estimate potential supply on this basis. Fish seed facilities are also to be promoted through greater awareness of need, tax relief for inputs or production and through other means, such as facilitating negotiation of contracts between fish fed producers and public institutions with tested fish seed formations consisting mainly of agro-industrial by-products¹⁰².

In recognition of the complementary role of the private and public sector in aquaculture, the courses of action to be taken include enhancing collaboration between public and private stakeholders to identify and further specify their existing and potential role in promoting sustainable aquaculture, encourage private sector institutions (farmers, fish farm associations, agro-industry and financial institutions) to take up roles in aquaculture development, including for the provision of inputs and extension services. Regulations and standards regarding aquaculture operations and products are also to be developed as code of practice to be widely disseminated to existing and potential operators, as well as any relevant institutions¹⁰³.

To achieve the education and training objective, formal collaborations are to be established between training institutions to develop and assist in the implementation of key training programmes in support of demands expressed by aquaculture operators, training needs assessments are to be carried out for public institutions, farmer associations and other operators and finally, training institutions are to be encouraged to use private and public sector facilities and involve experienced personnel in their training programmes¹⁰⁴.

The extension and research objective would be achieved through actions such as promoting

¹⁰² Ibid p. 31

¹⁰³ Ibid pp. 31-32

¹⁰⁴ Ibid p. 32

quality in extension services rather than quantity and focus extension services on targeted production systems, regularly assessing the cost effectiveness of extension services and ways to increase it through various means such as focus on specific geographic area and on progressive farmers. Another course of action is to initiate a programme of intensive training and retraining of extension personnel starting with the assessment of needs, the training of trainers, the development of adequate material and the establishment of formal collaborative arrangements with farmers associations and other operators in the industry. The policy also calls for the establishment of an information support unit that encourages reporting on experiences as well as collect, package and disseminates information. Such a unit is to be complemented by a Research Extension Linkage system that ensures the timely dissemination of key information and research findings¹⁰⁵.

Building partnerships will involve courses of action including ensuring that aquaculture related public institutions work in a coordinated manner within the same understanding of the National Policy and develop some specialization in offering support services, and active participation in the Aquaculture Network for Africa (ANAF) for the exchange of experience, documentation and expertise in aquaculture the purposes ranging from training to research or policy development¹⁰⁶.

The appropriate production systems objective calls for actions such as establishing clear and unequivocal national guidelines on the type of commercial aquaculture systems and approaches that should be promoted as a matter of priority, full indication of the inputs required to achieve financial viability and related principles, as well as disseminating the national guidelines on aquaculture promotion (NGAP) and seek partner adhesion to such guidelines. NGAP should also acknowledge non-commercial aquaculture and provide guidance on such activities. Establishing procedures for the acquisition by investors of suitable land and water for aquaculture production is another course of action. Parties acquiring property or access should involve local and traditional authorities and take steps to avoid any eventual conflicts¹⁰⁷.

To establish quarantine and develop health certification procedures, courses of action to be taken include compiling periodic information on source of fish fingerlings and movement of

¹⁰⁵ Ibid pp. 32- 33

¹⁰⁶ Ibid p. 33

¹⁰⁷ Ibid pp. 33-34

live fish, establishing a fish quarantine station and developing guidelines for farm certification, shipment inspection and quarantine procedures¹⁰⁸.

Guidelines for introduction of exotic fish species will involve enhancing collaboration between public and private stakeholders to see the need for concerted action on the introduction of exotic species and preparing regulations to guide the introduction of exotic fish species into Ghana¹⁰⁹.

To develop guidelines for culture based fisheries, the policy calls for the development and promotion of species suitable for culture based fisheries, and development of regulations and standards to govern the construction and size of reservoirs with a view to enhancing the profitability of culture based fisheries, and ensuring that communities which own reservoirs manage them appropriately to ensure increased fish production¹¹⁰.

Collaboration with the Environmental Protection Agency to ensure that the Environmental Impact Assessment (EIA) statement enhances good aquaculture practices by fish farmers is one way to help develop guidelines for EIA. In addition establishing an evaluation procedure of the negative effects of fish farms on the environment with a view to ensuring that aquaculture practices do not endanger the environment will facilitate the development of the guidelines¹¹¹.

Finally, defining a regulatory framework on aquaculture will involve making the regulations to govern the conduct of aquaculture and establishing a legal basis for the implantation of the regulatory framework and the enforcement of the provisions with the assistance of the appropriate provisions¹¹².

2.3.1.4. POLICY AREA 4: ESTABLISH AN ENABLING ENVIRONMENT FOR SUSTAINABLE FISHERIES AND AQUACULTURE DEVELOPMENT¹¹³

The goal of this policy area is to create an enabling environment through institution and capacity building and through the development of partnerships and outreach services, which allows the Ministry of Fisheries to better perform its functions and effectively implement the

¹⁰⁸ Ibid p. 34

¹⁰⁹ Ibid p. 35

¹¹⁰ Ibid

¹¹¹ Ibid

¹¹² Ibid

¹¹³ Ibid p. 36

present policy framework.

The new challenges of the Ministry are the promotion of sustainable and responsible fisheries and the development of commercial aquaculture. In addressing these challenges, the Ministry faces significant constraints that require reviewing of its legal and regulatory framework as well as a significant effort to improve staff capabilities. The Ministry needs to play a catalytic role in providing for livelihood improvements in fisheries communities. New partnerships need to be developed and appropriate financing is required.

Hence the operational objectives of this policy area are:

1. To adjust institutions, laws and regulation to the requirements for effective implementation of the Policy.
2. To enhance capacities and capability of staff that provides administrative, managerial and technical support to the sector.
3. To improve the livelihood of fishing communities through a catalytic approach, in collaboration with all relevant institutions.
4. To develop partnerships with national institutions, donors, and NGOs for the implementation of the Policy.
5. To mobilize financial resources in support of development and investment.

The review of the institutional framework of the Ministry will involve developing and adopting a new set of regulations to govern the implementation of the Fisheries Act, adopting formal collaborative arrangements with other Government institutions as per the requirements of the policy, as well as conducting external assessments of some key Ministerial Departments such as Research and MCS, to enable advise on ways these Departments can better serve their functions with relevance to the Policy. Further, procedures are to be put in place to ensure periodic review of the Policy and also to draw up detailed plans of action for each of the main policy areas or relevant components to complement the National Fisheries and Aquaculture Policy¹¹⁴.

The second operational objective aims at enhancing the capacity of the Ministry's staff. This objective calls for an assessment of the training needs of the Ministry of Fisheries and its major

¹¹⁴ Ibid pp. 36-37

departments, as well as other relevant institutions. Based on such assessments, training plans can be designed for higher and lower level personnel in relation to training needs and the requirements and priorities of the Policy. The objective also calls for moves to develop and support capacity building programmes for fisheries and aquaculture operators for both small and large scale operations, with due attention being paid to ensuring provision of high quality of advice through focus on very specific programmes, periodic assessment of the quality and usefulness of services provided and periodic retraining of extension personnel¹¹⁵.

For the objective of outreach to improve livelihoods, it would be important to identify areas and means to improve the livelihood of small scale fisheries communities by collaborating effectively with other relevant Ministries and institutions as well as NGOs at national and decentralized levels in the provision of selected services that are not directly within the scope of the Ministry of Fisheries. Special attention is to be paid to priority areas, namely income diversification, gender dimension of community development, education with emphasis on alphabetization, health with special attention to sensitizing fisher folk on HIV-AIDS and STIs, and safety at sea for all fishing craft and vessels¹¹⁶.

The course of action for operational objective to develop partnerships will involve promoting partnership arrangements with national institutions and NGOs in providing specific support to sustainable fisheries and aquaculture as well as to livelihood development for the benefit of small scale fisheries communities, promoting partnership arrangements with specialized foreign and international institutions in the area of research, education and training for sustainable fisheries and aquaculture development, and seeking donor support for the implementation of the Policy based on further identification of needs and priorities¹¹⁷.

Towards achieving the operational objective to mobilize financial resources, courses of action will include developing an effective collaboration between national fisheries and aquaculture institutions and national financing institutions to support sustainable development in the sector. It also calls for a review of the investment code with a view to make amendments to the code which would be in line with the provisions of the Policy, and to create an enabling environment

¹¹⁵ Ibid p. 37

¹¹⁶ Ibid

¹¹⁷ Ibid p. 38

and incentives for local and foreign sustainable investments into the fisheries and aquaculture industry. Yet another course is to provide low interest micro finance credit facilities for small scale operators in line with sustainability and gender requirements of the sector¹¹⁸.

Finally, the courses of action to achieve the objective of capacity building for research, according to the policy document¹¹⁹ will involve actions such as reviewing and assessing research needs in connection with the key requirements of the Policy, and involving main stakeholders in the process. It would also involve seeking cost efficiency and policy relevance in selecting research priorities and programmes, as well as developing synergies and cooperation with related national and international institutions.

In conclusion, it is evident that the objectives of the policy cover almost every aspect of the Ghanaian fisheries industry. Even though it lacks detailed specifics and needs more elaboration, the policy indicates the realization of the weaknesses in fisheries administration and the need to manage for a sustainable fisheries resource base for the future.

The lack of specifics makes it very difficult to make a detailed analysis of the objectives set out in the policy and how they are to be achieved. This notwithstanding, two areas of interest relating to the management of fisheries, conservation of aquatic resources and protection of their natural environment merit discussion due to their international dimensions and direct impact on the current status of Ghanaian fisheries and would be the main focus of the research henceforth.

Specifically, these issues are:

1. To combat IUU fishing through more appropriate regulations and more effective monitoring, control and surveillance; and
2. To promote national and international collaboration for coordinated fisheries management and conservation.

¹¹⁸ Ibid

¹¹⁹ Ibid

2.4. INTERNATIONAL RESPONSE TO IUU FISHING AND LESSONS FOR GHANA

Illegal, unreported and unregulated fishing has been defined variously by different studies, each depending on the exact focus of the study. In general, IUU fishing is commonly understood to refer to fishing activities carried out in a manner that is inconsistent with or in contravention of, the conservation and management measures in force for a particular fishery. However, the most suitable for the purpose of this study is that given by the FAO International Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated fishing (IPOA-IUU) ¹²⁰.

According to this document, illegal fishing refers to 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.¹²¹

Hence, this can apply to national vessels licensed to fish in an adjacent area that have crossed the boundary to fish in an area where they are not licensed; and to vessels fishing on the high seas that cross the boundary for the same purpose

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 organization¹²².

Unregulated fishing refers to fishing activities

¹²⁰ This definition has a more holistic nature and many of the other definitions are based on it.

¹²¹ FAO. International Plan of Action to prevent, deter and eliminate illegal, unreported and unregulated fishing. Rome, FAO. 2001. p.24

¹²² Ibid. Note that there are views that this also constitutes illegal fishing, especially where vessels are required to report catch or data by the conditions and terms of their fishing licences. See for example MRAG 2005: Review of impacts of IUU on developing countries – Final Report

1. in the area of application of a relevant regional fisheries management organization that are conducted by vessels without nationality¹²³, 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 law¹²⁴.

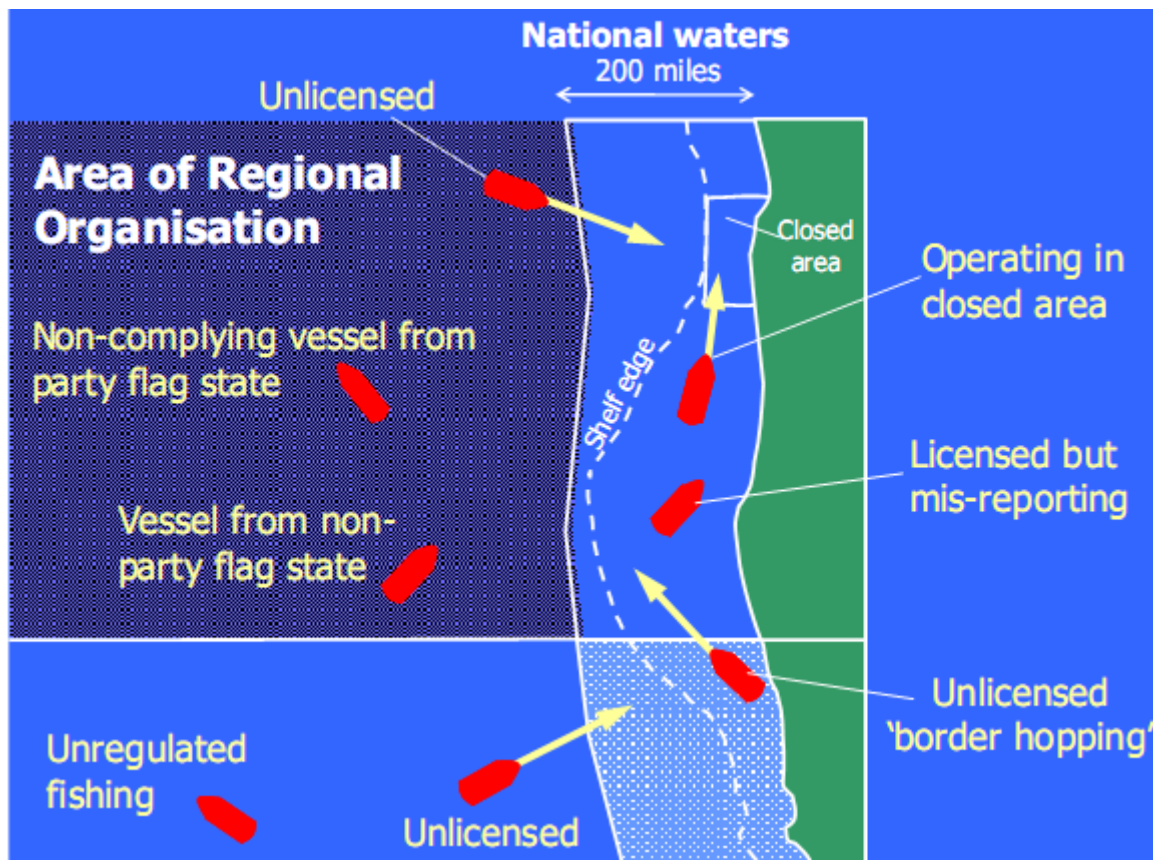


Figure 2 Illustration of types of IUU fishing. Within an EEZ there may be unlicensed fishing (poaching), under- or non-reporting, or unauthorized fishing by area, seasonal, gear, quota or species. Outside EEZs there may be non-compliance with an RFMO, or there may be unregulated fishing outside the area of an RFMO. Note that many RFMOs also cover adjoining EEZ waters, but the primary jurisdiction in these cases remains that of the coastal state

Source: MRAG 2005 Review of IUU fishing and developing countries

¹²³ These vessels are usually referred to as free riders.

¹²⁴ FAO. International Plan of Action to prevent, deter and eliminate illegal, unreported and unregulated fishing. Rome, FAO. 2001. 24p.

Thus by its very definition, IUU fishing involves, affects and is engaged in by all types of fishing vessels both domestic and foreign irrespective of size or gear at any given time. This worldwide problem has been around for a long time¹²⁵ but has only until recently gained international concern, brought about by the recognition of the international community of its significant contribution to the global downward trend of fish stocks¹²⁶. IUU fishing threatens the target fish species and their surrounding ecosystems, wreaks havoc on conservation and management goals on both national and international levels and undermines the sovereignty claims of coastal States¹²⁷.

IUU fishing has far reaching impacts. These impacts are discussed by a number of publications in terms of the economic, social and environmental dimensions of affected coastal states, the most prominent of which are the developing coastal States of Africa¹²⁸. Economic impacts could be direct or secondary. Direct economic impact refers the loss of the value of the catches that could be taken by the coastal state if the IUU fishing were not taking place and includes loss to gross national product (GNP) and loss of actual revenue that could accrue to the coastal State in the form of landings fees, licence fees, taxes and other levies which are payable by legal fishing operators. Also included are other macroeconomic effects such as implications for Government budgets and employment within the fishing and fish processing sector. In this regard, IUU is known to be causing losses of nearly \$1bn annually in sub-Saharan Africa alone¹²⁹. The secondary economic impacts are induced and include impacts resulting from loss of income and employment in other industries and activities in the supply chain upstream and downstream from the fishing operation itself.

¹²⁵ De Gallic B., Cox A.: An Economic Analysis of IUU: Key Drivers and Possible Solutions. *Marine Policy* 30 (2006) 689 – 695

¹²⁶ IUU has been noted as being a significant contributor to the downward trend of stock status observed since the 1950s. The phenomenon has been the focus of a host of international organizations including the UN, IUCN, WWF and other organizations for a many years and some major international agreements, such as the UNFA are indirectly geared towards fighting IUU though their objectives may not directly state so.

¹²⁷ Diane Erceg 2006 Detering IUU Fishing Through State Control of Nationals in *Marine Policy* 30 (2006) 173 – 179

¹²⁸ See for example MRAG 2005 Review of IUU and Developing Countries and <http://www.ejfoundation.org/page163.html>

¹²⁹ McConnell T. 2008 Fishing an Offshore Free for All in *The Africa Report* No. 12, August – September 2008

Fish is consumed by all groups of society as a daily staple throughout Ghana. It is recognized as the most important source of animal protein and the national per capita fish consumption is estimated at 25kg, much higher than the global average of 13kg per capita¹³⁰. IUU activities reduce the productivity and biodiversity of ecosystems as well as the ability of exploited target species to recover. This implies a reduction in food security for the people who depend on fish as a major source of animal protein hence creating a social problem, notably for the over 110,000 artisanal fishers and their dependants living in the coastal communities.

There are many serious conflicts existing between fishers in all the three sectors of the fisheries industries in the West African Sub-Region and for that matter Ghana¹³¹; i.e. within and between the artisanal and industrial, and between the two, the semi or local industrial sector. These conflicts are heightened by the activities of IUU fishing because they undermine the efficiency of the legal fishers. Furthermore, these legal fishers, most often the artisanal fishers, do not get compensated for losses incurred through damage of their gear and vessels and accidents caused by IUU fishing activities. All these and other contributing factors prejudice the interest of fishers and the fishing industry as a whole forcing a majority of these legal fishers to disregard fisheries laws and regulations and resort to any (often illegal) means of fishing in order to compete with the IUU fishers on the market. Those who get arrested have to pay penalties, which goes to aggravate their already dire circumstances, escalating the social impacts of IUU fishing.

The environmental impacts of IUU fishing cannot be overemphasized. Fishing in general has the capacity to damage fragile marine ecosystems and regulation of legitimate fisheries is aimed at mitigating such impacts. IUU fishers do not comply with any conservation and management measures or rules on fishing and they more often than not use inappropriate gears and equipment in sensitive areas, inflicting serious damage to marine ecosystems. Global fish stocks are declining at an alarming rate and IUU fishing is contributing significantly by inducing overfishing, which has led to over-exploitation and depletion of stocks. Quantifying the impact of IUU fishing¹³² on marine ecosystems is undoubtedly a highly speculative task due to the illicit nature of the activity, very much unlike the case of legitimate fishing where it is to some extent

¹³⁰ DoF 2007 A summary of fisheries statistics in Ghana (Mimeo). Directorate of Fisheries, Accra

¹³¹ For the full discussion on conflicts in Ghana fisheries, see Bannerman, P. O. 2001: Management of Conflicts in Tropical Fisheries-Ghana Final Report

¹³² Despite the difficulty and speculations involved in making such quantifications, some commendable attempts have been made by some researchers. See for example MRAG & UBC 2008 The Global Extent of Illegal Fishing

possible to do so with respect to seabirds, marine mammals, sea turtles and marine biodiversity as a whole. One can only imagine the amount of IUU by-catches of non-target fish species, let alone their interactions with other marine organisms in areas where IUU activities are rampant¹³³, especially Africa.

International response to the IUU threat has been immense and varied. In fact there is a long history of the fight against the IUU threat¹³⁴, following on UNCLOS. Notable among these are the 1993 FAO Compliance Agreement, the 1995 Fish Stocks Agreement and the 2001 International Plan of Action against IUU Fishing. The table below provides an overview.

Table 1: Overview of international developments of IUU fishing issue

Year	Event	Result
May 1992	International Conference on Responsible Fishing (Cancun, Mexico)	Cancun Declaration
June 1992	UN Conference on Sustainable Development	Agenda 21
November 1993	24 th Session of the FAO Conference	Compliance Agreement
November 1994	Entry into force of UNCLOS	
August 1995	United Nations Conference on Straddling Fish Stocks and Highly Migratory Fish Stocks	UN Fish Stocks Agreement
October 1995	28 th Session of the FAO Conference	Code of Conduct for Responsible Fisheries
October 1997	CCAMLR Meeting	First formal mention of IUU terminology
March 1999	FAO Ministerial Meeting on Fisheries	Rome Declaration on Responsible Fisheries
November 1999	UN General Assembly	Resolution 54/32 (reference to combat IUU fishing)

¹³³ In an initiative to develop an international IUU monitoring network, the MRAG and FERR have undertaken a study to determine the global extent of illegal fishing. The study attempts to make a first overall global estimate of illegal fishing based on a number of species and areas that constitute 46% of global catches based on FAO catch statistics.

¹³⁴ See Annex 1 for a short history of the international actions and initiatives to combat IUU as presented by Schmidt C.C. 2004 Addressing Illegal, Unreported and Unregulated (IUU) Fishing. Paper presented at the International Fisheries Compliance 2004 conference, Brussels.

May 2000	Expert Consultation on IUU fishing (Sidney, Australia)	A draft text for IPOA-IUU fishing
October 2000 February 2001	Technical Consultation on IUU fishing (Rome, FAO)	A draft text for IPOA-IUU fishing
April 2001	24 th Session of the FAO Technical Committee	IPOA-IUU fishing (endorsement)
June 2001	120 th Session of the FAO Council	IPOA-IUU fishing (endorsement)
September 2002	The World Summit on Sustainable Development (Johannesburg, South Africa)	Plan of Implementation
November 2002	International Conference against IUU fishing (Santiago, Spain)	Conclusion of Conference

Source: OECD- Addressing IUU Fishing

The fight against IUU fishing has intensified over the last five years, with a number of initiatives including the Ministerial High Seas Task Force (HSTF), various conferences and industry and Non-Governmental Organizations (NGOs) such as Greenpeace, Traffic and WWF joining the fray. Different strategies and measures have been developed and adopted at both the international and national levels for this purpose. Most of these measures are contained in legal instruments falling within the sphere of the Law of the Sea, including fisheries management and conservation. The strategies being employed are centered largely on trade and market measures, international observer schemes and strengthening monitoring and surveillance. How successful these measures have been is currently a major subject of discourse in the international community. In fact, it is evident that there has been no significant reduction in the IUU fishing activity against which these numerous measures are targeted, and it is even known to be on the rise in some regions as is evidenced by recent calls for a review of EU Fisheries Policy¹³⁵.

Different ideas have been propounded as to the best way to tackle this problem. While some writers suggest a shift in emphasis from approaches such as trade and market measures and

¹³⁵ See for instance Times of Malta website, September 17 2008 EU Fisheries Policy not working. Available at <http://timesofmalta.com/articles/view/20080917/world-news/eu-fisheries-policy-not-working> see also Euractiv, September 30 2008 Ministers back EU fisheries reform plans at <http://www.euractiv.com/en/environment/ministers-back-eu-fisheries-reform-plans>. assessed October 10 2008.

enforcement to State control over nationals¹³⁶, others suggest among other things, targeting IUU operations at links where there are fewer possibilities of avoiding regulations and where enforcement can be made in more cost-efficient ways¹³⁷, yet others suggest getting down to the basics to examine the institutional designs and dynamics of fisheries management institutions and embrace a concept of institution that captures the social processes and governance mechanisms that are essential to fisheries management in its broadest sense¹³⁸, and yet again others suggest strategies that focus on the economics of the activity¹³⁹.

While the search for a lasting solution to IUU continues, it is recognized by the international community that there is a need for collaboration by, and at all possible levels, if any solution(s) is to work. It is a given that not all concerned parties have equal standing, especially with respect to economic and/or industrial development and hence financially. However, there must be a meeting point where decisions taken by the international community concerning IUU fishing can be implemented. The level in question here is the national level, where national policies can be formed concerning a State's position with regard to international issues such as IUU fishing. International cooperation can then be built on these national policies to combat the issues of concern. This could be one major reason why the 2001 FAO IPOA-IUU calls for member nations to develop national plans of action¹⁴⁰ to facilitate implementation through elaboration of national plans of action on seven types of measures such as coastal State measures, port State measures and market related measures¹⁴¹. These plans were to be developed by June 2004 on a voluntary basis. According to the FAO, not more than 25 NPOAs-IUU have been elaborated and disseminated worldwide as at November 2005¹⁴². Albeit voluntary, the international community

¹³⁶ See supra note 115

¹³⁷ Msrs Olav Schram Stokke and Davor Vidas in their paper on Regulating IUU Fishing or Combating IUU Operations examine the international community's diagnosis of IUU fishing and review various existing measures to determine their focus based on which they make suggestions for improvement of potential measures.

¹³⁸ Though not directly related to the IUU question, the ideas presented by S. Jentoft in his paper have indirect bearings on the issue under discussion.

¹³⁹ This idea which proposes finding means of either reducing income streams or alternatively increasing the costs of the activity seems to be gaining ground. See for instance Gallic, B. L., Cox A. 2005 An economic analysis of illegal, unreported and unregulated (IUU) fishing: key drivers and possible solutions. *Marine Policy* 30 (2006) 689-695. Available online at www.sciencedirect.com

¹⁴⁰ See specifically FAO IUU-IPOA Para 25-27 p. 8

¹⁴¹ Schmidt C. C. 2004 Addressing Illegal, Unreported and Unregulated (IUU) Fishing. Paper presented at the International Fisheries Compliance 2004 Conference, Brussels, 29-30 September 2004.

¹⁴² FAO Regional Workshop on the Elaboration of National Plans of Action to Prevent, Deter and Eliminate Illegal and Unregulated Fishing – Certain Countries of the Near East Region. p.17

acknowledges the importance of this document as a base upon which other plans action could be built to combat issues of concern and more States are likely to publish their NPOA-IUU in the near future. African coastal States, which are the hardest hit by the activities of IUU fishing¹⁴³, are endeavoring to fulfill their part in the fight against IUU fishing. Notable among these are Namibia and Mozambique who have developed full first drafts of their NPOA-IUU. Two other members of the Southern African Development Community (SADC), Tanzania and Angola, have developed preliminary drafts and are working to arrive at full first drafts¹⁴⁴. It is in this vein that the Ghana Ministry of Fisheries is working to elaborate and adopt a national plan of action on IUU fishing as per the Draft National Fisheries and Aquaculture Policy.

2.4.1. A NATIONAL PLAN OF ACTION ON IUU FOR GHANA

The national plans of action on illegal, unreported and unregulated (IUU) fishing are intended to be the vehicles for the implementation of the FAO IPOA-IUU. However as has been noted by many authorities on the subject, the IPOA-IUU provides a ‘toolbox’ of measures for States and RFMOs to adopt in their fight against IUU fishing¹⁴⁵. The idea here is for each coastal State to select from the measures provided those that are best suited to their particular circumstances. Hence the IPOA-IUU provides measures that can be used as formats on which more effective measures can be modeled to fight IUU fishing activities in a particular EEZ or Sub-Region; there are absolutely no strict rules for the development of the national plans. This flexibility is a very important characteristic that Ghana has to explore when drawing up a NPOA-IUU.

Though experiencing similar problems as other West African developing coastal States, the Ghanaian fisheries industry has its own unique circumstances which require appropriate modifications of the IPOA-IUU measures to address them. For example, Ghana has to cope with more fishing vessels “border hopping” into Ghanaian fishery waters from neighboring countries than these same countries have to deal with Ghanaian fishing vessels due to the better MCS

¹⁴³ See Closing the Net: Stopping Illegal Fishing on the High Seas, Final Report of the Ministerially-led Task Force on IUU Fishing on the High Seas 3p.

¹⁴⁴ SIF Programme Study: IPOA-IUU status for SADC and RFOs Volume 1 Executive Summary p.5. See also www.stopillegalifishing.com/docs/maputo_vol1.pdf for document and www.stopillegalifishing.com/statement_of_commitment.html for related document concerning the SIF programme. See also supra note 132.

¹⁴⁵ See for example IPOA-IUU Implementation status report for the SADC region members and RFBs Vol.1- Executive Summary Paras 2-3 5p

capability of Ghana¹⁴⁶. For this same reason Ghanaian fisheries authorities are to a higher extent, though not very efficiently, better able to detect and act against foreign fishing vessels involved or suspected to be involved in IUU fishing activities¹⁴⁷. Below is a table of some high profile arrests of IUU fishing vessels arrested in Ghanaian fishery waters.

Table 2 Some high profile arrests of IUU fishing vessels by Ghanaian fisheries authorities

VESSEL NAME	OFFENCE
<i>Cidade de Faro</i>	Poaching in the fishery waters of Ghana.
<i>Mirenlux</i> (2004)	Fishing without licenses from any country.
<i>Strombus</i> (2007)	Fishing without authorization
<i>Turbinella</i> (2007)	Fishing without authorization

Source: Presentation on Fisheries Compliance in Ghana by Head of MCS D at NOAA- MOFI Observer Training Workshop, Accra. March 2008

IUU fishing in Ghana is therefore more prevalent within and engaged in by the three sectors (industrial, semi-industrial and artisanal) of the Ghanaian fishing industry¹⁴⁸, and therefore the NPOA-IUU for Ghana must draw on the appropriate measures of the IPOA-IUU to address this situation. To be precise, the focus of a national plan of action is likely to be more intensely on, *inter alia*, solving IUU fishing problems within areas under national jurisdiction, maintaining and strengthening existing MCS programmes and promoting innovative means of approaching

¹⁴⁶ Almost all the industrial fishing vessels flagged in Ghana are fitted with transponders for vessel monitoring purposes and hence their movements can be tracked, serving as a check on their fishing activities both in Ghanaian waters and outside the EEZ.

¹⁴⁷ Ghanaian fisheries authorities have been able to apprehend some fishing vessels known to be involved in IUU operations over the past years. The most recent was in October 2007 but the vessel was ‘released’ before investigations were completed. See also www.allafrica.com/stories/200710251111.html for an account of the incident.

¹⁴⁸ McConnell T. 2008 Fishing An Offshore Free-for-All in The Africa Report No. 12, August-September 2008. The article touches on the threat to future food security posed by the uncontrolled fishing of West Africa’s fishery waters by both IUU and local fishing vessels. The writer gives a brief report on the IUU situation in Ghana as described by a senior fisheries officer in charge of MCS.

MCS in general, and promoting coordination with neighboring States and RFMOs in the sub-Region in relation to harmonizing conservation and management measures and MCS through bilateral or regional arrangements. It has been suggested that the surest way for a State to develop a national plan of action on IUU that could effectively address the IUU situation is to first determine the drivers underpinning the IUU activities particular to the State¹⁴⁹. Policies and other actions can then be developed to form a basis for a NPOA-IUU. This implies that in the case of Ghana, the new National Fisheries and Aquaculture Policy when completed could provide an invaluable solid base for elaborating a National Plan of Action on Illegal, Unreported and Unregulated fishing.

2.4.2. STRENGTHENING MCS (ENFORCEMENT)

Enforcement has become a major priority in global fisheries. Almost every single research or paper on IUU indicates the realization that enforcement of rules and regulations regarding marine or fisheries resources at any level, be it national, regional or global, is an essential element for the survival of the industry. It is an accepted fact that the absence or ineffective implementation of enforcement measures has been a major contributing factor to the high incidence of IUU and hence the present state of global fish stocks. As a result, many countries with high interests in fisheries such as Australia, Canada, the United States of America, New Zealand and Norway have established comprehensive monitoring, control and surveillance measures for their fisheries to ensure compliance by fishers with the rules and regulations protecting fisheries resources. In fact, this is the case for most developed countries, where there is the capacity to put such measures in place. The same cannot be said for the developing countries, where many coastal States lack the resources, are limited in funding and scientific knowledge and therefore lack the general management capacity to effectively manage fisheries within areas under their jurisdiction¹⁵⁰. Only a handful of African coastal States have been able to positively enhance their capacities to fulfill the port State, flag State and coastal State duties as

¹⁴⁹ C.C. Schmidt suggests in his paper on Addressing IUU Fishing that finding drivers of the activity is the starting point for governments for developing policies to alter the incentive structure to undertake IUU. See supra note 126

¹⁵⁰ This is why the FAO IPOA-IUU makes mention of the need to support developing countries. See specifically International Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing Paras 85- 86 p. 23. See also Environmental Justice Foundation Save the Sea project: IUU Fishing- Background Available at <http://www.ejfoundation.org/page162.html>.

required under international law¹⁵¹.

The Monitoring Control and Surveillance Division of the Ministry of Fisheries is the newest divisional addition to be made to the Directorate of Fisheries¹⁵². This, and the fact that it is the first time such an institution was established in the history of the resource, is an indication of its limitations¹⁵³. Established in 1997, the Division only collected statistics on catches and was not effective in enforcing the existing fisheries regulations. It later organized joint patrols with the Ghana Navy on both marine and inland waters but could not sustain the cost of the operations due to limited funding. Currently, MCS capacities remain limited for small-scale fisheries and are largely ineffective, with continued illegal encroachment and poaching in inshore waters by industrial vessels and the use of illegal fishing methods in both marine and inland capture fisheries¹⁵⁴. There has however been significant improvement (though not a high standard) as is evidenced by the level of control it has established over the Ghanaian fisheries industry.

This has been brought about by the strong and comprehensive legal backing provided by the Ghana Fisheries Act 625 of 2002, which clearly spells out the functions of the Division and makes provisions for its activities. Under the Act the functions of the MCS are as follows:

1. Ensure the monitoring, control and surveillance of the fishery waters of Ghana.
2. Monitoring, control and surveillance of all fishing operations within the fishery waters by whatever appropriate means including the management and running of a satellite-based station for using satellite communication for data transmission relating to the activities of foreign fishing vessels licensed to operate with the EEZ.
3. The enforcement of the Fisheries Act, regulations made under the Act and any other enactment relating to the regulation of fishing activities in Ghana.

The main activities currently carried out by the Ghanaian MCS are:

¹⁵¹ The handful of African coastal States which have a more or less comprehensive MCS capability include Namibia, South Africa and some members of the SADC under the EU SADC MCS project, and Mauritania. See supra note 142. See also MRAG 2005 Review of IUU and Developing Countries p. 80

¹⁵² The division was established under the Department of Fisheries (now the Directorate of Fisheries) when it was still under the Ministry of Food and Agriculture. The structure of the Directorate remains unchanged under the newly created Ministry of Fisheries and hence the division remains the youngest addition.

¹⁵³ The MCSD was established under a Fisheries Sub-Sector Capacity Building Project under a loan from the World Bank. An implementation completion report by the World Bank in 2003 considered the division's as being unsatisfactory, citing its young age as one of the reasons. Available at www-wds.worldbank.org

¹⁵⁴ This is the current situation as described in the Final Draft of the Ghana National Fisheries Policy

1. Basic safety inspections to ensure that fishing vessels meet the basic safety requirements and have the competent crew for the safe manning of the vessels. They also ensure that the correct ratio of foreign crew to Ghanaian crew is maintained.
2. Quayside inspections for the enforcement of fisheries act are carried out. The focus is mainly on the mesh size and gear during these inspections.
3. Fish import, export and transshipment monitoring for compliance. This ensures that all catch is landed in Ghanaian ports for the appropriate documentation to be prepared before export is carried out. Transshipment is prohibited unless it is authorized. All authorized transshipment is supervised by the MCS. Import and export permits are required for import or export of fish or fish products. Certificate of origin indicating the catch vessel, consignee, destination address, value, species, permit identification and other relevant information are inspected by the MCS.
4. Observer programmes for collection of scientific and compliance information for the effective management of the resource.
5. Running of a VMS station. The MCS runs two control centers to monitor the operations of fishing vessels both for management and for compliance purposes.
6. When resources are available MCS conducts dedicated fisheries patrols with the Navy for the enforcement of the Fisheries Act and the protection of the fisheries resources.

Thus the tools being used to control fishing activities in Ghanaian fishery waters may be summarized as including the following:

1. Fishing permit requirements
2. Fishing gear and method restrictions
3. Zoning of fishing areas
4. Vessel inspections (quayside inspections)
5. Control of transshipment
6. Vessel marking requirements
7. Fishing permit and vessel registers
8. Vessel monitoring system (VMS) requirements
9. Information management and analysis
10. Observer programme

As can be seen from the above, the current strength of MCS in Ghana lies in its control activities

which aim at ensuring that there are no unauthorized vessels fishing in the fishery waters, and that those vessels authorized to fish are doing so in accordance with the conditions of their license. The monitoring aspect of the MCS is achieved mostly through the fishing permit and vessel registers, the vessel monitoring system requirements, fish import, export and transshipment monitoring and also the observer programme.

The observer programme is used as a multipurpose tool, serving both as a surveillance tool and means of obtaining data for monitoring the fisheries resources and the industry. However, recent development has necessitated the programme to play a major role as a surveillance tool as well as its primary functions for the collection of scientific and compliance data. The combination of vessel monitoring system and observer programmes has gone a long way to improve on the level of compliance of the industry and better understanding of fishing operations by fisheries administrators. Also, valuable information has been obtained during debriefing of observers which has helped improve the reporting formats for some of the operations and has served as important components in the development of fisheries regulations in areas which were hitherto unknown or least understood by the fisheries administrators. Hence, these two tools have been selected as the main pillars for effective monitoring of vessels by MCS in Ghana, the decision being prompted by the following factors:

1. Principles of the fisheries management plan
2. High cost of effective traditional MCS enforcement by the use of patrol boats, considering maintenance and operational cost
3. Area of coverage by vessels
4. Number of vessels to be monitored
5. Limited financial resources
6. National obligation to comply with international conventions

From the combination of these factors, it turns out that effective Vessel Monitoring System (VMS) and comprehensive observer coverage is the best option within the Ghanaian circumstances. In view of this, considerable efforts have been made by the fisheries administration to obtain assistance for training more observers¹⁵⁵. The question still remains as

¹⁵⁵ These efforts have yielded dividends and some amount of training have been conducted for observers, the recent of which was undertaken in collaboration with the National Marine Fisheries Service of the National Oceanic and Atmospheric Administration of the United States Department of Commerce in March 2008.

to whether Ghana could meet the MCS requirements needed to effectively enforce the fisheries regulations to safeguard its fisheries resources against imminent depletion from IUU activities. The answer still remains a no, at least not in the near future because MCS is plagued by serious issues that are militating against its development and contribution towards achieving any meaningful fulfillment of fisheries resources sustainability goals in the near future. These problems have been identified by a number of research papers as being common to the West African sub-region and Africa as a whole¹⁵⁶.

The major challenges facing MCS operations in Ghana include lack of resources to police the waters, lack of well trained and equipped personnel, lack of comprehensive database on vessels operating in the sub-region, lack of RFMOs and hence information sharing, and finally, limited funding. However, underlying all these are factors that apply to the higher institutions under which MCS exists: lack of political will, weak institutional frameworks and the level of priority accorded to fisheries by African countries. These problems, though being addressed, may prevent the effective functioning of the MCS in Ghana and other African nations as well. These notwithstanding, there is likely to be a marked improvement if solutions targeting the following areas:

1. Finance
2. Capacity building (especially of technical staff, i.e. inspectors and observers)
3. Expanding coverage, improving and enforcing vessel monitoring system requirements
4. Improving land-based enforcement including port state control
5. Establish and maintain a permanent inter-agency collaboration for MCS
6. Expand and make maximum use of observer programmes
7. Seek and establish international collaborations, especially with immediate neighboring states and RFMOs in the West African sub-region

These are the major areas that need immediate attention if there is to be an improvement in the MCS situation for Ghana.

¹⁵⁶ See for example MRAG 2005 Review of impacts of IUU and Developing Countries and FAO Regional Workshop on the Elaboration of National Plans of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing – Certain Countries of the Near East Region

3.0. CONCLUDING REMARKS AND RECOMMENDATIONS

There have been no comprehensive fisheries policies governing the fisheries sector since the inception of the Ministry of Fisheries¹⁵⁷. This has been one major contributing factor for the current state of the Ghanaian fishing industry. Most of the policies adopted have been short term aquaculture oriented policies such as the

The Draft National Fisheries and Aquaculture Policy 2008 provides a commendable framework for fisheries management in Ghana. Its content reflects an in-depth examination of the current state of the fisheries resources and a widespread consultation process in its formulation. However, more needs to be done in terms of consultation in order for the policy to reflect the national orientation towards the purposes for which the policy is being formulated. This is discussed more in detail with respect to monitoring and control of resources in the following sections below.

As stated in its introduction, the policy draws on the relevant tools provided by the various international conventions of which Ghana is party, notably UNCLOS and other related non-binding laws such as the FAO Code of Conduct for Responsible Fishing to address the issues militating against the achievement of sustainable fisheries management goals in Ghana. That aside, it also seems to incorporate much of the traditional systems of fisheries management, an indication of a participatory approach to the solutions that have been found so far and hopefully a higher involvement of stakeholders in the implementation of the policy solutions identified so far.

With regard to shortfalls, which this research proposed to identify, a number of them were identified. One major observation made was that there are no timeframes mentioned in the whole document in relation to when any of the stated policy objectives are to be achieved. As would be discussed in the subsequent section, this is a major shortfall because the commitment by Government to policy depends to a large extent on the timeframes within which the policy will be developed, implemented and more especially roughly how long it will take for the impacts or effects of the policy solutions to be visible.

¹⁵⁷ The first Ministry of Fisheries was established in 1964. See Hernæs P O 1991: Modernizing Ghanaian Fisheries The Need for “Social Carriers” of Technology. Ad Notam, Oslo. p. 37

Another major shortfall was the lack of prioritization of the policy objectives. It is important to prioritize objectives because some problems may need to be solved first in order to solve others. The merits associated with this are discussed in the subsequent section.

Although the policy in question is only a draft, this very fact presents an opportunity to make crucial evaluations in order to ensure an effective policy development process and help shape the resultant policy into a robust and efficient one. This is hence the aim of the discussion below.

The majority of the recommendations are based mainly on the focus of the study i.e. the issues of IUU fishing and MCS in relation to the Draft Ghana National Fisheries and Policy.

The conclusions drawn in the above chapter raise a host of important issues that need to be addressed in order to make the policy document into the efficient tool it is meant to be. But before discussing these issues, a brief look at the major attributes of a policy process may provide some light on what the whole exercise should comprise and aim at¹⁵⁸.

3.1. RECOMMENDED CONSIDERATIONS FOR POLICY DEVELOPMENT PROCESS

A key factor in the development of a good policy is the correct diagnosis of the problems at hand. The understanding and definition of the problem has an important impact on the policy solutions drawn up to address the issues. Hence, it is critical to properly diagnose the problems. To successfully do this, it is essential to make a clear distinction between the symptoms or effects of the problems and the actual problem. This implies looking beneath the manifestations of the problem to find its causes. A clear definition of the problem should also help give focus and direction to the process of developing options to address the problem, enable tracking of the changes the chosen policy solutions will effect over time when they are implemented¹⁵⁹ as well as provide a benchmark¹⁶⁰ against

¹⁵⁸ The steps discussed here are by no means absolutes in policy development and are intended to give an insight into the issues that can be considered during the process.

¹⁵⁹ Office of the Auditor General of Manitoba 2003: A Guide to Policy Development. Manitoba-Winnipeg, Canada. Document available at <http://www.oag.mb.ca>. Accessed on 20 January 2009.

which progress would be measured. There are risks associated with not clearly defining the problems. Apart from not targeting the right problem, there is also the risk of misallocation of resources, a risk Ghana does not have the luxury to take, especially with the current worldwide economic state.

Having thus defined the problem, an analysis of the problem needs to be undertaken¹⁶¹. The aim here is to gain a clear understanding of the issues at hand and hence be able to refine the definition of the problem. This analysis should involve the consideration of the multi-directional aspects of the problem because more often than not, every problem involves a number of concerns. This multi-dimensional nature can best be clarified by considering the problem from different perspectives, especially those of the stakeholders involved and the environment in which the problem is occurring¹⁶². This will lead to getting a good handle on, as well as a greater understanding of the problem.

To further aid the understanding of the problem, there should be a comparative analysis of strategically and selectively collected data wherever feasible¹⁶³. This helps to understand the problem in relative terms – relative to other similar situations and contexts, and also helps to zero in on the precise nature of the problem. In gathering such data, it is important to find out how these problems may have been handled elsewhere and whether the solutions to them have worked. This can be very useful in relation to generating solutions. For these reasons, data should not be collected for the sake of doing so. Rather it should influence the understanding of the problems and hence assist in the decision-making process. As with failure to properly diagnose the problems to be addressed by policy solutions, the risks associated with not properly analyzing the

¹⁶⁰ Benchmark here is understood as a preferred state of being for the fisheries industry by which results of a policy implementation would be measured against to determine progress.

¹⁶¹ It is important to note that policy development is not a linear process. Each step in the process is not discreet. The process is generally iterative and dynamic, with the steps involved being inter-related and inter-dependent on each other. Hence problem definition and analysis are inseparable and there is a flow of information, in both directions, between the two steps. See also *supra* note 145.

¹⁶² This actually equates to situating the problem in a context. A problem does not suddenly crop up on a landscape. There is a need to understand the landscape in which the problem lives in order to fully grasp its dimensions and scope.

¹⁶³ This means obtaining quantitative as well as qualitative data to substantiate the fact that there is a problem. However, time pressures, data availability, cost of data, among other constraints, in many cases will impact on the ability to collect and analyze the kind of data that may be ideally wanted or needed for analysis. Hence the need for selective and strategic data collection.

problems during policy development include making decisions not based on solid evidence, which lead to policy solutions developed on unreliable basis, and unknowingly repeating policies that have not worked well in similar contexts in other jurisdictions.

The next step after defining the problem is to generate solutions. At this stage, having a conceptual framework and a clear sense of the desired outcomes or goals to be achieved by the chosen policy solutions is crucial. The conceptual framework should guide the selection of the policy options¹⁶⁴ to be assessed and must contain working parameters¹⁶⁵, key principles¹⁶⁶ as well as Government or ministerial goals and priorities. In the absence of a conceptual framework to guide option assessment, policy makers run the risk of uncertainty as to whether Government's or department's values and priorities are being furthered by a given policy as well as not knowing what a policy is intended to achieve. The pros and cons of each policy option should be determined according to a set of criteria¹⁶⁷ and each policy option should be systematically evaluated against each to the criteria.

It is not enough to define a problem for policy development. This is because no matter how good the definition may be, questions would still remain as to the type of change expected to occur from the implementation of the policy, and roughly when such a change is expected to occur. Hence, identifying the desired outcomes at the outset is crucial for performance measurement as well as for framing assessment of potential policy options, and facilitating assessment of each option in relation to its potential to

¹⁶⁴ The policy development process starts with the presentation of policy options on which an agreement is reached as to the direction a policy should take. Failure to develop policy options implies that any policy selected may not be the best to meet government or departmental priorities and may not be effective or efficient at all for the problem at hand.

¹⁶⁵ Working parameters here refer to the limitations under which the policy is being developed. For example a selected policy must be one that can be implemented within the framework of existing legislation and should not require renegotiations or amendments to an existing tri-level agreement.

¹⁶⁶ Sometimes there is a very thin line between key principles/values and the actual policy. Sometimes the principles/ values become the policy. Typical examples may be that citizens have a right to universal healthcare, that every child should have access to a safe living environment and that affordable housing is an entitlement of citizens.

¹⁶⁷ The criteria selected will vary depending on the problem at hand. Typically most policy development criteria tend to include factors such as compatibility with the conceptual framework, time frame for implementation of a policy option, impact of a policy option on stakeholders, cost implications, administrative ease of implementation, legal implications and inter-departmental impact.

meet expected outcomes¹⁶⁸. The more specific one can be about expected outcomes, the easier it is to determine the relative merits and limitations of policy options¹⁶⁹.

As stated above, the steps in the policy development process are not discreet but rather are inter-related and inter-dependent. The whole process is permeated by a consultation process which begins even before it is acknowledged that there is a need for a policy. The consequence of poor or limited consultation include limited understanding of the problems or issues which in turn will lead to poor policy solutions¹⁷⁰, negative back-lash from stakeholders in reaction to the policy¹⁷¹, lack of policy coordination and a potential misdirection of funds and resources. The consultation process is not a one-off affair. It has to be tailored to meet important factors such as timeframes, resource availability and nature of the policy issues at hand. Hence, it is important to develop a consultation plan that is realistic under the given circumstances for the development of the policy. For instance, in terms of resource availability, issues that need to be taken into consideration will include cost, staff time, and type of expertise and availability of skills.

The consultation plan should answer questions such as who needs to be consulted¹⁷² (for example ministers, departments, stakeholder groups, etc.), the subject matter of the consultation, when to end the consultations, where to hold them, why it is important to consult such and such persons or groups and determining how to do these consultations i.e. in relation to methods such as public meetings, round table discussions or workshops. Whatever the consultation plan, it is important that consultations within the organization involved (inter-departmental) take precedence over external consultations. This helps to

¹⁶⁸ An outcome may be considered as a significant consequence attributed to the outputs of an organization, policy, program or initiative. Outcomes may relate to a change in behavior, skills, knowledge, attitudes, values, status or other attributes. They may be immediate, intermediate or long term, direct or indirect, intended or unintended.

¹⁶⁹ Office of the Auditor General of Manitoba 2003: A Guide to Policy Development. Manitoba-Winnipeg, Canada. p. 20

¹⁷⁰ Note that issue identification and analysis are intended to promote understanding of the problems at hand. However, without consultation these two are bound to fail.

¹⁷¹ This is especially true for issues such as compliance which may be a key to the success of the Ghana National Fisheries and Aquaculture Policy.

¹⁷² It is critical to also be able to identify the right people or group, particularly in the case where they propose to represent a sector or interest. This will help avoid the situations that arise where discussions are held with such a group which may only be a fragment of a larger one that is not well organized.

forestall any chances of resistance and other difficulties that might ensue from failure to consult internally at the outset of the policy development process.

The plan should also include steps to counter potential fall-out in case there has to be a scaled back consultation process. Finally, it is important to note that informing people about what is going on and how it may impact on them is also part of the consultation process and hence provision should be made to cater for this aspect of the process as well.

Implemented policy solutions need to be monitored in order to determine if there are solving the problems for which they were implemented. Performance monitoring or measurement is an integral part of the policy development process. In the absence of information on how previous policies have worked (which is the case of Ghana) policy development can become an exercise in shooting in the dark and a perpetuation of policy approaches that may not work. The performance measurement step involves monitoring of outputs, impacts and outcomes of implemented policy and evaluating them in relation to the desired outcomes set out at the outset of the policy development process. Thus it provides feedback which helps to refine not only the various components of the policy geared towards achieving desired outcomes, but also the refinement of the expected outcomes as well through improved decision-making. Succinctly put, performance monitoring helps to establish what works and hence contributes to future decision-making. However, before this can be done there is the need to develop performance indicators (as part of the policy development process) by which to measure progress in reaching policy objectives. Difficult though this may prove, meaningful indicators may be found by going back to the problem or issue for which the policy was put in place. The root cause(s) of a policy may provide potential indicators by which progress in achieving policy objectives may be measured¹⁷³.

In the evaluation of policies, it is always prudent to be selective about which policy solutions to monitor and evaluate and the number of performance indicators to use as measures of how well the policy is doing¹⁷⁴. Hence, as part of the policy development

¹⁷³ See supra note 156 p. 28

¹⁷⁴ This is an important consideration especially in cases where policy evaluation needs to be undertaken with

process, it needs to be determined which policy solutions are going to be monitored and evaluated. Once a range of indicators have been selected, an assessment of each one in terms of feasibility and meaningfulness is made. This process should be guided by criteria developed for the purpose. Such criteria could include factors such as level of funding that will be allocated to implementation of the policy solution, degree of risk associated with the policy, the significance of groups impacted and what would be forgone if there is no monitoring and evaluation. The risks associated with not undertaking performance measurement are that the misallocation of funds is potentially perpetuated and policies that may not be working optimally are continued.

3.2. SHORTFALLS AND SUGGESTED SOLUTIONS

With the above view of the attributes of a policy in mind, it is now easier to make recommendations concerning the Ghana National Fisheries and Aquaculture Policy. The recommendations do not concern the shortfalls identified but also concern other issues of the fisheries industry that should be considered by policy makers for the development of the policy.

3.2.1. PRIORITIZATION

The first issue is the fact that this policy document is the first of its kind to be developed for the fisheries sector. The implication of this is mainly that of time, i.e. time for the document to go through all the phases of the policy cycle¹⁷⁵. It is a given that at certain phases of the policy cycle, especially at the implementation phase, the fisheries administration would not be starting from zero because some of the objectives set out in the policy document are already being implemented in some form, and what may need to

limited resources. In such cases it is always prudent to be strategic in selecting performance indicators. Having numerous indicators may not necessarily be a good thing as it may also be an indication of lack of focus and clarity in policy objectives and expected outcomes.

¹⁷⁵ A policy cycle is a tool used for the development and/or analysis of policy formulation and implementation which divides the process into distinct though not independent phases. From all indications the Draft Ghana Fisheries and Aquaculture Policy document is currently going through a consultation process at the decision-making phase of the policy cycle and will undoubtedly take time to go through all the phases, depending on the standardized version of policy cycle adopted at the onset of the policy formulation process.

be done in many cases may only involve fine-tuning the underlying and existing processes to achieve the set objectives. However, several factors, chief among them lack of funding and personnel¹⁷⁶, may come into play and complicate the whole process. Succinctly put, developing and honing the policy into an effective tool cannot be accomplished in a matter of a few years, which is just as it should be if the policy were to be effective at all. It is also important to note another observation drawn from the conclusions: there are no specific timeframes for achieving the objectives set out in the policy document. This is a serious shortfall in the policy that needs to be addressed because a significant amount of the policy development process such as consultations and most of the criteria for selecting options are based on timeframes¹⁷⁷.

Hence time becomes an important factor due to the current state of the resources to be managed, the attitude of most users regarding the resources and the general global economic situation among other things. The questions that first come to mind regarding the management of the resources are: what really happens to the resources while the policy is going through the various phases of development or what is really happening to the resources now? What do the fisheries administrators do while the policy is being developed? At the rate at which the resources are deteriorating, it would be disastrous not to do anything to arrest the slide immediately.

The implementation phase of the policy cycle presents administrators with a possible means of solving this problem. The idea here is to first prioritize the objectives in such a way as to have those objectives aimed at arresting the rate of deterioration of the fisheries

¹⁷⁶ Another important factor that needs to be mentioned is the effect of change of government. This is likely to result in a setback of the policy implantation process if a new Government does not pursue the same ideologies as the current Government with respect to fisheries. In fact, this seems to be the situation at the moment. The new Government of Ghana that took over power in January 2009 has dissolved the Ministry of Fisheries and installed the Directorate of Fisheries back under the Ministry of Agriculture. This move in itself brings into question the status of the Draft Ghana National Fisheries and Aquaculture Policy which is the topic of this work. Will it still be valid or completely scrapped for a new one, if any at all? It is yet to be seen what effects this “re-centralization” will have on the fisheries sector, whether there will be improvement or if fisheries administration will revert back to its former state in the 1990s. See also for instance supra notes 150 and 160.

¹⁷⁷ Without timeframes it would be difficult to commit already scarce resources to a policy implementation process, especially with the specter of uncertainty that surrounds the outcomes of policy implementation. See also supra note 154.

resources at the forefront and being implemented first before or during the implementation phase. Specifically, compliance improvement based objectives should be prioritized to run concurrently with research improvement based objectives, hence increasing compliance of the players in the sector with whatever regulations are in place, while at the same time conducting the much needed research to establish what is there of the resources to be managed. Results obtained from such research programmes can then be fed into the policy process to advice the next round of decisions.

3.2.2. COMPLIANCE

The best way to increase the present state of compliance by users of the fisheries resources is by strengthening MCS¹⁷⁸. However, there are arguments against the manner of application of MCS (and fisheries enforcement in general) to solve problems of fisheries management. These arguments point out that most of the treatments to most fisheries problems, such as IUU for instance, are solutions aimed at symptoms of the problems and not the causes¹⁷⁹. This is an accurate observation, especially in the case of Ghana, and policy makers need to consider this in the bid to save the resource because finding the underlying causes of fisheries problems may lead to the discovery of more cost effective options for dealing with them.

Meanwhile it can still be argued that compliance is a key to sustainable fisheries¹⁸⁰ in Ghana and the surest means available for achieving that at the moment is MCS. This is so because most of the processes needed to improve compliance are already in place. First of all the Section 94 of the Ghana Fisheries Act 625 of 2002 provides the legal backing for the operations of the MCS and makes provisions for enlisting the help of other agencies of State in performing its duties. This provision was employed by the then

¹⁷⁸ Erceg D., 2006: Deterring IUU fishing through state control of nationals. *Marine Policy* 30(2006) 173 – 179. p. 3

¹⁷⁹ Stokke O. S., Vidas D. AGR/FI/IUU (2004)8: Regulating IUU Fishing or Combating IUU Operations. Paper submitted at the IUU Workshop, 19-20 April 2004. p4. The authors argue that the main efforts so far in combating IUU has involved treating symptoms rather than causes; dealing with manifestations of the problem rather than the purposes of those who create it, and this has usually involved among other things, relatively costly means such as enforcement at sea. This view seems to be a quite accurate one that permeates many solutions to many fisheries related problems and merits consideration by fisheries administrators, as does their suggestion that prevailing measures needs to be re-examined.

¹⁸⁰ Huack M., 2008: Rethinking small scale fisheries compliance. *Marine Policy* 32 (2008) 635 – 642. p. 1

Department of Fisheries (now Directorate of Fisheries) in 1997 when it contracted the Ghana Navy to implement a fisheries patrol program from 1997 to 2001 in conjunction with the MCS¹⁸¹, a program which helped establish a somewhat strong Government authority presence in the Inshore Exclusive Zone (IEZ)¹⁸² and improved compliance by industrial fishing vessels with the regulations concerning this zone and bolstered confidence of artisanal fishermen in the authorities in the process¹⁸³. Despite the fact that this collaboration was discontinued due to financial constraints, the framework for cooperation has already been established. This framework should be revisited and refined to establish a Memorandum of Understanding (MOU) between the DoF and the Ghana Navy, as well as with other agencies of State that need to be called in to assist in improving fisheries compliance. Such an MOU may then serve as a template for further cooperation between the Ministry of Fisheries and other Ministries were needed, helping to foster the much needed inter-Ministry relationships¹⁸⁴. Moreover, this would be especially beneficial in aspects of compliance such as establishing systems for swift prosecution of fishers who violate management measures. This is critical to effective compliance because any inefficiency in taking action against violators is construed as a weakness of the institution and this completely undermines the very purpose of the whole concept and encourages rather than deters fishers to disregard fisheries management measures¹⁸⁵. The aim here should be to make examples of any fishers arrested for violating the fisheries regulations and send out a clear message to potential offenders that offences would not go unpunished. With such a system in place, compliance would be

¹⁸¹ The World Bank 2003: Implementation Completion Report (IDA-27130) on a credit to the Republic of Ghana for a Fisheries Sub-Sector Capacity Building Project (FSCBP). pp. 8-9. See also supra note 137

¹⁸² See supra note

¹⁸³ Ibid. p. 9

¹⁸⁴ These can be very beneficial as it may open avenues for exploring more avenues for financing fisheries related projects with agencies of State with some stake in aspects of these projects, avenues which are hitherto without the reach of the Ministry of Fisheries. See also “Inter-ministerial liaisons” in FAO1995 “An Introduction to Monitoring, Control and Surveillance Systems for Capture Fisheries” FAO Technical Paper No. 338. FAO. Rome.

¹⁸⁵ It is believed that provisions for appropriate and swift enforcement action will deter fishers from engaging in activities that compromise the implementation of fisheries laws. See for example FAO 1996 Committee on Fisheries Twenty-second Session “Essential Role of Monitoring, Control and Surveillance in Fisheries Management” COFI/97/Inf.6 FAO. Rome. p. 2

even more effective and coverage would be greater, especially with the Ghana Navy being equipped with more ships to patrol the Ghanaian EEZ¹⁸⁶.

However, this may not be possible without exploring the root causes of non-compliance in Ghanaian fisheries, the most visibly obvious of them being poor enforcement of (discussed above), lack of awareness of fisheries laws especially among coastal fishing communities and profitability, to mention a few. Before compliance can be improved, it is important to get the cooperation of the players in the sector. It has been proven time and again that compliance comes not only from strong MCS, but also from a complete buy-in of compliance measures by all stakeholders involved. Some of these stakeholders are aware of the fisheries laws and the consequences of going against them. However, a majority of them, particularly the artisanal fishermen, may not be aware of these laws, largely because they are illiterate. This is where concepts such as Community-Based Fisheries Management Committees (CBFMCs) can make tremendous contributions in terms of education and hence compliance.

The issue of profitability comes into play largely in the commercial fisheries sector. The fishing companies involved know the laws associated with the industry because they have to fulfill conditions before they can acquire licenses to fish. However, unlike the artisanal sector which is mostly for subsistence purposes, commercial fisheries is a capital intensive venture which can only be undertaken if it is profitable. As a result commercial fishers employ any possible means to make profits, sometimes in situations where that may not be possible every time. Ghanaian commercial fishing companies know and understand the weaknesses of the fisheries administration. In fact they depend on these weaknesses to make profit, and they do so with very little regard to the effects their activities may have on the resources. Hence, non-compliance is higher in the commercial fisheries sector than in the artisanal sector. It is this non-compliance that drives the artisanal fishermen into non-compliance as well, as they must now compete with the commercial sector for the same resource¹⁸⁷, which should not have been the case. It then

¹⁸⁶ MyJoyOnline.com News: Ghana Navy being equipped. Published 8/26/2008, Accessed 14/01/2009. According to the story from the website, the Chief Director of the Ministry of Fisheries is quoted by the major Ghanaian newspaper The Daily Graphic as saying that the Cabinet of the Ghana Government has agreed to acquire six ships for the Ghana Navy to enable it to patrol the country's territorial waters. Story available at <http://news.myjoyonline.com/news/200808/19807.asp>

¹⁸⁷ This is also the main root cause of IUU fishing by fishermen in the artisanal sector.

becomes clear that with the artisanal sector forming the larger part of the fisheries industry, the drive towards achieving improved compliance will be more than half-won if win the support of this sector. In short, recognizing the existence of traditional systems and promoting participatory approaches through CBFMCs to harness their potential to be used in terms of monitoring and control of resources, not to mention research, will not only help narrow the focus of the compliance improvement drive but also reduce the cost of the exercise in the long run, making the whole process thus achievable.

Considering the advanced training the fisheries observers of the MCSD have already acquired and would be acquiring from various training programs organized by the Ministry and international bodies such as the National Marine Fisheries Service (NMFS) of the National Oceanic and Atmospheric Administration (NOAA), Africa Partnership Station (APS) and others, such an endeavor to improve fisheries compliance and research could form a veritable launching pad for the implementation of the Ghana fisheries policy and the provide the fundamental blocks for achieving the objective of management of fisheries, conservation of aquatic resources and protection of their natural environment as compliance encompasses all these disciplines.

3.2.3. FUNDING

In developing countries, fisheries management authorities face severe constraints in their ability to fulfill their responsibilities and adapt to the changing fisheries environment. Primary among these is lack of funding due to limited government budget.

In the case of fisheries, this issue is compounded by the fact that there is a surprising lack of recognition of the importance of the sector and therefore adequate funds are not allocated from government budgets for fisheries management¹⁸⁸. As mentioned earlier, funding has been a major factor that has had serious setbacks on fisheries management projects. It may well continue to be, especially with the current state of the worldwide

¹⁸⁸ MRAG and DFID FMSP Policy Brief 5 Fisheries and Governance. MRAG, London. Available at http://www.mrag.org/Recent_Publications.htm

economy, and it goes without saying that the implementation of this policy will be a likely failure if the process is not fortified with adequate funding.

Finding funding for fisheries projects is another discipline altogether which this paper does not explore. It is however recommended that research be initiated into finding viable means of funding, if not all management initiatives, then for the complete development, implementation and evaluation of the fisheries policy.

3.2.4. GOVERNANCE

The issue of governance in the Ghanaian fisheries administration needs to be given a critical look. Governance is fundamental to fisheries in that it determines the manner in which power and influence are exercised over the management of fisheries. The establishment of institutions, policies and processes through which management may be realized is fundamental to effective fisheries governance. For this reason national fisheries management authorities are key governance structures, representing the legal entity with authority of performing specific fishery management functions. These structures provide must provide the appropriate legal, social, economic and political arrangements for the development and implementation of management strategies.

The draft policy gives an indication of impending significant changes with implications for the roles of institutions involved in fisheries management. This is an indication of the dynamism of fisheries, and management must also be dynamic if policies are to be successful. It is interesting to note that the institutions for the management of the fisheries have remained the same in many respects, and over the years it has been observed that prevailing systems of fisheries governance have been largely ineffective at controlling access to fishery resources to ensure their sustainability.

Hence in the attempts to remedy this situation, it would be beneficial to examine critically the institutions of fisheries management, specifically the Department of Fisheries and its divisions because these are the national legal fisheries authorities. The point being brought to bear here is that it is about time to pay attention to the fact that the failures of the fisheries over the past years may well be due to the structure and organization of the national institutions responsible for the sector. It has been evidenced

that centralized governance arrangements have more often than not failed in fisheries management worldwide and has led to developing more devolved and locally accountable management structures, and the development of co-management and community-based management arrangements. In view of this, it may be worthwhile exploring the principles on which the institutional structures national fisheries institutions are based.

Regardless of the principles employed to improve fisheries governance, this following should serve as a point of reference from which to draw inference:

“the most useful intervention to solve the IUU problems in developing countries would be those that tackle, at heart, the issue of governance...unless funding addresses inadequate governance, the potential benefits to fisheries management systems, including MCS, science and management functions will be undermined. If governance remains poor, it is likely that funding for MCS will fail to create the anticipated levels of change within the system and therefore will fail to deliver desired outcomes”¹⁸⁹

¹⁸⁹ MRAG 2005 Review of impacts of illegal, unregulated and unreported fishing on developing countries MRAG, London. p. 84

LIST OF REFERENCES

- Agbodeka, F. (1992). An economic history of Ghana from the earliest times. Accra, Ghana Universities Press.
- Amador K., Bannerman P. O., Quartey R., Ashong R. 2006. Ghana canoe frame survey 2004. Infor. Rep, No.33 pp12. Marine Fisheries Research Division, Ministry of Fisheries, Tema.
- Atta-Mills, J., J. Alder, et al. (2004). The decline of a regional fishing nation : the case of Ghana and West Africa. Oxford, Blackwell.
- Braimah L. I. recent developments on the fisheries of volta Lake. (Ghana). In: Cruz R. R. M., Roest F. c (Eds)l the current status of fisheries and fish stocks offour larges African resources. CIFA Technical Paper 30. 111-134pp
- Brown, E. D. (1994). The international law of the sea – An Introductory Manual. Aldershot, Hants; Brookfield, Vt., Dartmouth
- Delauney, K., 2001. Artisanal Maritime Fisheries in Cote d’Ivoire. In: Overa, R. (Ed.) Institutions, mobility and resilience in the Fante migratory fisheries of West Africa. CMI Working Paper 2001. Christian Michelsen Institute, Bergen, Norway.
- DoF 2007: A Summary of Fisheries Statitics in Ghana (mimeograph). Directorate of Fisheries, Accra.
- Erceg, D. (2006). "Deterring IUU fishing through state control over nationals." Marine Policy 30 173 - 179.
- FAO 1996 Committee on Fisheries 22nd Session: Essential role of monitoring control and surveillance in fisheries management. COFI/97/inf6. FAO, Rome.
- FAO 2001 International plan of action to prevent, deter and eliminate illegal, unregulated and unreported (IUU) fishing. FAO, Rome, 2001. p.24
- FAO Fisheries Report No. 793 Report of the FAO regional workshop on the elaboration of national plans of action to prevent, deter and eliminate illegal, unreported and unregulated fishing – certain countries of the near east region, Cairo, Egypt 11 – 15 December 2005. FAO 2006, Rome.

FAO. "Ghana." National Aquaculture Sector Overview. Retrieved October 10, 2008, from http://www.fao.org/fishery/countrysector/naso_ghana/en.

Foundation, E. J. "Impacts of IUU Fishing." Save the Sea. Retrieved August 15, 2008, from <http://www.ejfoundation.org/page163.html>.

GSS 2002: 2000 population and housing census of Ghana 16pp. summary report of final results. Ghana statistical service, 2002.

Haakonsen, J. M., 2001. Artisanal Fisheries and Fishermens, migration in Liberia. In: Overa, R. (Ed.) Institutions, mobility and resilience in the Fante migratory fisheries of West Africa. CMI Working Paper 2001. Christian Michelsen Institute, Bergen, Norway

Hauck, M. (2008). "Rethinking small-scale fisheries compliance." *Marine Policy* 32(635).

Hernaes, P. O. and u. Universitetet i Trondheim. Senter for (1991). Modernizing Ghanaian fisheries : the need for 'social carriers' of technology. Oslo, Ad Notam.

High Seas Task Force (2006). Closing the net: Stopping illegal fishing on the high seas. Governments of Australia, Canada, Chile, Namibia, New Zealand, and the United Kingdom, WWF, IUCN and the Earth Institute at Columbia University.

Jentoft S. 2004 Institutions in fisheries: what they are, what they do and how they change. *Marine policy* 28 (2004) 131 – 149

Koranteng K. A. 1984 A trawling survey off Ghana. CECA/TECH/84/63, Dakar, Senegal: CECAF Project

Le Gallic B., Cox A. 2006 An economic analysis of illegal, unreported and unregulated (IUU) fishing: key drivers and possible solutions. *marine policy* 30 (2006) 689 – 695

Mensah M. A., Koranteng, K. A., Bortey A., Yeboah D. A. (2006). The State of the World Fisheries from a Fish Worker Perspective: The Ghanaian Situation. Chennai, India. ICFS. Available at www.ifcs.com.

MRAG 2005 Review of Impacts of illegal Unreported and unregulated fishing on developing countries – final report. MRAG, London.

MRAG, DFID FMSP Policy Brief 5 Fisheries and Governance. MRAG, London.

Available at www.fmsp.org.uk

OCEANA. "16th ICCAT Special Meeting of the Commission, Marakesh 17- 24th November." Oceana Position Paper. Retrieved December 20th, 2008, from <http://community.oceana.org/blog/2008/11/iccat-condemns-bluefin>.

OECD 2004 Regulating IUU fishing or combating IUU operations. Unclassified AGR/FI/IUU (2004) 8. Paper submitted to the IUU Workshop 19-20 April 2005 by Stoke O. S and Vidas D. of the Fridtjof Nansen Institute, Norway

Office of the auditor general 2003 A guide to policy development. Manitoba- Winnipeg, Canada.

Oliver P., Miquel J. 1987. Report on the survey carried out by the R/V Cornide de Scavedra in the Gulf of Guinea in 1986. Instituto Espanol de Oceanografia, Palme de Mallorca, Spain.

Overa R. 2002. When sisters become competitors: Coastal women's success and utilisation of trawlers; by-catch in Ghana. In: Neis B., Binkley M., Gerrard S., Maneschy S. (Eds.) Gender, Globalisation and Fisheries. Fernword Publishing, Halifax, Canada.

Republic of Ghana Fisheries Act 625 of 2002. Assembly Press, Accra.

Republic of Ghana Ministry of Fisheries 2008. National Fisheries and Aquaculture Policy – Final Draft, 2008. Ministry of Fisheries, Accra.

Rijavec L. 1980. A survey of the Demersal fish resources of Ghana. CECAF/TECH/80/25 (En) pp 28

Schmidt C. C. 2004 Addressing Illegal, unreported and unregulated (IUU) fishing. Paper presented for the International Fishing Compliance 2004 Conference, Brussels, 19-30 September 2004.

SIF Programme Study: IPOA-IUU implementation status of SADC region members and RFBs. Volume 1, Executive Summary. December 2007

The World Bank 2003 Implementation completion report (ISA – 27130) on a credit to the Republic of Ghana for a fisheries sub-sector capacity building project (FSCBP). Washington DC: World Bank

Annex

History of international actions and initiatives against IUU/FOC fishing activities

Since 1992, the international community has promoted major initiatives and actions for the long- term sustainable management of fisheries resources.

In 1992 International Conference on Responsible Fishing (Cancun, Mexico) adopted the *Cancun Declaration*, which called upon FAO to develop an International Code of Conduct on Responsible Fishing. Following the Cancun conference, United Nations Conference on Sustainable Development (UNCED, Rio, Brazil) adopted *Agenda 21*, programme of action for sustainable development. Among Agenda 21, Chapter 17 pointed out problems of unregulated fishing, vessel reflagging to escape control and lack of sufficient co-operation between States in the management of high seas fisheries.

Based on the Cancun Declaration and Agenda 21, FAO supported technical consultations on high seas fishing that provided technical input for the UN fish stock conference in September 1992. As a result, the Compliance Agreement was approved by the 24 session of the FAO conference (November 1993). The motivation for the negotiation of the Compliance Agreement was directly related to the IUU fishing issue. The Agreement seeks to ensure that flag States exercise more effective control over their vessels while fishing on the high seas by requiring vessels to be authorized to engage in such fishing. In this way the Agreement would deter unauthorized vessels from high seas fishing and from not complying with conservation and management measures that have been agreed by competent organizations.

The United Nations General Assembly considered, for the first time in 1994, the issue of unauthorised fishing in zones of national jurisdiction and its impact on living marine resources of the world's oceans and seas. In so doing the Assembly adopted 'UN Fish Stock Agreement' in 1995. Also in 1995 the FAO Code of Conduct which was adopted. Although voluntary, the Code embrace all fisheries while the Compliance Agreement and UN Fish Stock Agreement, respectively, are more restricted in application in terms of area (high seas) and stocks

(straddling fish stocks and highly migratory fish stocks).

In the evolution of terminology, the first formal mention of IUU fishing appeared during a CCAMLR meeting in 1997. At this meeting the international community showed an interest not only in the illegal fishing but also unregulated and unreported fishing. Since 1997 the term IUU fishing has been used regularly at CCAMLR meetings, and it has subsequently been diffused into other international fisheries discussions such as FAO, IMO, UNCSD and regional fishery bodies (CCSBT, IOTC, ICCAT, NAFO and NEAFC).

IUU fishing was addressed at length in the 1999 Secretary-General's Report to the UN General Assembly on Oceans and the Law of the Sea. In November 1999 the general Assembly adopted Resolution 54/32 which included references to combat IUU fishing. These reports and references to IUU fishing have clearly placed the issue on the international fisheries and oceans agenda. Concurrently, the Seventh Session of the UNCSD in April 1999 underscored the importance of Flag State and Port State issues in combating IUU fishing and invited IMO to develop relevant measures.

The International Plan of Action for IUU fishing was developed as a voluntary instrument, within the framework of the Code of Conduct for Responsible Fisheries, in response to a call from the 23rd Session of the FAO Committee on Fisheries. A draft text for IPOA-IUU fishing was elaborated at an Expert Consultation (in Sydney, Australia, in May 2000) and followed by Technical Consultations (FAO, in October 2000 and February 2001). The IPOA-IUU fishing was adopted by consensus at the 24th Session of FAO fisheries committee in March 2001 and endorsed by 120th Session of the FAO Council on 23 June 2001.

The World Summit on Sustainable Development (September 2002, Johannesburg, South Africa) recognised that protecting and managing the natural resource base for economic and social development are an essential requirements for sustainable development. From the Johannesburg Plan of Implementation, the Summit also set targets and timetables for the management of the natural resource base regarding fisheries activities as follows, including "Put into effect the FAO international plans of action to prevent, deter and eliminate illegal, unreported and unregulated fishing by 2004.

In September 2002, WSSD reaffirmed to put the IPOA-IUU into effect by the agreed dates (June 2004) and have agreed to eliminate subsidies that contribute to IUU fishing for sustainable fisheries management.

In November 2002, the Santiago de Compostela International Conference was held in order to give political impetus and follow up the International Plan of Action against IUU fishing. The Conference formulated initiatives and views as how best to stamp out IUU fishing at regional, national and international level.

Culled from **Addressing Illegal, Unreported and Unregulated (IUU) Fishing** By

Carl-Christian Schmidt Head of the Fisheries Division Directorate for Food Agriculture and Fisheries, OECD, Paris.