UNIVERSITY OF GHANA

CHALLENGES FACING GHANA'S FISHING INDUSTRY

CASE STUDY OF CAPE COAST AND ELMINA FISHERMEN

BY

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DECLARATION

I hereby declare that this dissertation is my own work produced from research undertaken under supervision and that it has not been presented and will not be presented to any other University for a similar or any other award.

All references have been acknowledged.

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DEDICATION

This work is dedicated to Mr. Samuel Kwaku Owusu-Manu, Miss Diana Owusua, my parents and all my friends.

God richly bless you all.
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I'm most grateful to the people who have assisted me in developing this work, in particular, I would like to sincerely thank Professor Maxwell Assimeng of the University of Ghana, who supervised this work, for his useful criticism, comments and proper guidance during the time I was compiling and writing this report.

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Special appreciation goes to all the fishermen in Cape Coast and Elmina. I also appreciate the help obtained from my research assistant.
ABSTRACT

The fishing industry in Ghana have had challenges that include pair trawling, dangers posed by foreign vessels and unapproved fishing methods by local fishermen. The objective of the research is to identify the challenges facing Ghana’s fishing industry, ascertain the causes of these challenges, the impact of these challenges and to recommend ways to address the challenges.

The main instruments used for the collection of primary data for the study, were questionnaires and interviews. In all 346 respondents were used comprising of 266 respondents from Elmina and 80 from Cape Coast fishing communities. The approach used for the interviews is the purposive sampling and that of the questionnaire is the simple random sampling technique. The results of the finding indicated that, the challenges stated above really exist and have negative impact on the efficiency of the fishing industry.

Recommendations were made as to how the efficiency of Ghana’s fishing industry can be improved. Some of these recommendations are;

Education of fishermen on good fishing practices and the effects of bad fishing practices, thus awareness creation among the fishermen about the existence of the fisheries Act to enable them to be acquainted with the law and report all illegal practices in the territorial waters of Ghana. Also the Navy should be adequately resourced to frequently undertake patrol exercise to check all illegal activities in our territorial waters. Coordination among all stakeholders in the industry is essential, this is to enable the stakeholders to identify any challenges facing the fishing industry and adequately put in place measures to deal with such problems.

The Ministry of Food and Agriculture can organize periodic meetings among stakeholders to outline matters of interest in the fishing industry. The government must also ensure proper
implementation and enforcement of the fishing Act to help deal with some of the challenges.

There must be more training of skilled personnel in the maritime industry to ensure effective implementation of the Fishing Act.
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CHAPTER ONE

INTRODUCTION

Man has exploited the sea for food and other resources from his earliest days. In fact, fishing as a means of procuring food began before man’s existence - a number of animals catch fish for food. Heaps of discarded shells have been discovered at sites of ancient coastal villages in Asia, Europe and South America. The abundance of these bivalve shells suggests these were of primary importance in the diet of early man. Seaweeds was also a staple food in many early coastal societies. Evidence of man as a fisherman has been dated back as far as 8 - 10,000 years ago. At this time harpoons, fishhooks, net, and traps were already being used to capture coastal fish (Borne, 1971).

The fishing industry consists of catching fish, equipment used, fish handling, processing and preservation. For the purpose of this study a fisherman is anyone who derives his or her principal annual income from fishing.

1.1 BACKGROUND OF THE STUDY

The fishing industry is a very important industry because it serves as a source of protein in the diet of the populace and a potential as foreign exchange earner as well as avenue for employment. Ghana's fishing requirement is estimated at about 800,000 metric tons annually and about 74,000 metric tons of fish is imported (GNA, 2011). However, against the background of foreign exchange and balance of payment difficulties it is important to turn inward to meet the fish requirement.

As illustrated in the 2005 Budget Statement, the fishing industry Sub-Sector is on the decline. It declined from 2.8 per cent of the total Agricultural Sub-Sector in 2002 to 2.6 per cent in 2003 fiscal year and remained at 2.6 per cent in 2004 Budget year.
1.1.1 CONTRIBUTION OF FISHERIES TO AGRICULTURE

Agriculture is the dominant sector of the Ghanaian economy employing about 60% of the labour force, Agriculture (predominantly smallholder, traditional and rain-fed) contributes 45-50% of the GDP and about 75% of export earnings of Ghana. The fisheries sub-sector accounts for 5% of the country’s agricultural GDP (GNA, 2005).

With a per capita consumption of about 25 kg per annum, fish is a preferred source of animal protein in Ghana. Fish is expected to contribute 60% of animal protein intake of Ghanaians. About 75% of the total domestic production of fish is consumed locally. The fishing industry in Ghana is based on resources from the marine and inland (freshwater) sectors, coastal lagoons and aquaculture.

The industry in Ghana has the industrialized, semi-industrialized and artisanal. The artisanal sector provides over 70% of the total fish requirements and consequently the bulk of the country’s protein requirements.

The sector also employs over 60% women and links with other sectors in providing raw materials especially the food processing companies and the hospitality industry while employing the services and products of other sectors to operate. The industry according to the Ministry of Agriculture employs an estimated 10% of the country’s population which stands at about 2.2 million people (Amarfio, 2010).

1.1.2 AQUACULTURE

Fish farming is relatively new to Ghanaians but its practice is becoming widespread in many parts of the country. There are various forms of aquacultural practices; currently in Ghana fish are cultured semi-intensively in earthen ponds either as monoculture of tilapia or poly
culture of tilapia and catfish. Cage culture in ponds has recently been introduced and is being practiced on a commercial fish farm on the Volta Lake. Pen culture with tilapia, recently introduced in the Keta lagoon, has been very successful.

Shrimp/prawn farming has not caught on in Ghana even though research conducted by fisheries department of Ministry of Food and Agriculture (MOFA) has shown that there is a great potential for commercial farming of local shrimp species, Penaeus notialis and P. kerathurus. Though not adequate, The Government has taken some measures to accelerate the development of fish farming in Ghana. A crawler dozer has been acquired for the Ashanti Fish Farmers Association (FFA); to be paid for on hire purchase and a modern hatchery has been established near Kumasi to provide good quality fish fingerlings to fish farmers.

The country requires a policy framework to arrest this decline and to reap the immense benefits that could accrue. It is a common fact that the country abounds with numerous dams and dugouts as well as criss-crossing rivers, which make aquaculture fishing not only easy but also countrywide.

Aquaculture fishing makes immense contribution to the economies of Kenya, South Africa, Cote d'Ivoire and Burkina-Faso. These countries export fish particularly tilapia on large scale to many other African countries and to Europe, and this has helped to improve their economies. Ghana stands to benefit from the industry even better, given its landscape and could also easily export to countries north of Ghana and even Europe. If more attention were paid to the sector, not only would the youth find permanent jobs but also the masses would continue to improve on their nutritional status.
1.1.3 TYPES OF FISHERIES

**Marine Fisheries**

The activities in the marine sector range from artisanal canoe operations through inshore to industrial operations. Both pelagic and demersal fishery resources are exploited. Marine fisheries in Ghana are affected by a seasonal upwelling that occurs in Ghanaian coastal waters. During upwelling periods (December/January/February and July – September) biological activities increase in the sea that results in increased production of fish food and abundance of most marine fishes. These are the fishing seasons in Ghanaian waters as the fish becomes more available for catch by the fishers during the upwelling seasons.

**Artisanal Fisheries**

Nearly 10,000 canoes and 123,000 fishermen (with nearly 1.5 million dependants) operate from 304 landing centers in 189 fishing villages located along the coast of Ghana (National Fisheries Association, 2004).

Canoe fishers use a wide variety of fishing gears, including grilling and entangling nets, seine nets (purse and beach seines), cast nets and hand lines, to exploit both pelagic and demersal fish species. The fleet is responsible for over 80% of the total annual catch of small pelagic species (sardinellas, mackerels and anchovies).

**Inshore Fisheries**

The inshore fleet is made up of about 230 vessels, ranging in size between 8 and 37m long, which operate both as trawlers and purse seiners (National Fisheries Association, 2005). They operate from 7 centers only where there are facilities for landing. The fleet exploits both the small pelagic and demersal fish species.
**Industrial Fisheries**

The industrial fleet is currently made up of 40 trawlers, 7 pair trawlers, 6 shrimpers, 23 tuna bait boats and 10 tuna purse seiners. The vessels operate from Tema and Takoradi where there are deepwater ports.

The trawlers and shrimpers exploit demersal and semi pelagic species. The tuna fishing vessels catch mainly yellow fin, skipjack and big eye tunas. Most tuna vessels are operated on joint-venture basis with Ghanaians having at least 50% shares as required in the Fisheries Act 625 of 2002 (National Fisheries Association, 2005).

**Lagoon Fisheries**

There are more than 50 coastal lagoons of various sizes in Ghana. These lagoons provide an important source of protein and other resources for the communities that live around them.

The lagoons also contribute significantly to the diversity and status of fish stocks in coastal waters as many fish species spend part of their life cycle in these lagoons.

1.1.4 **FISH PROCESSING**

Post harvest utilization of landing is a topical issue in Ghana. Efforts are being made to improve the traditional methods of smoking, salting and drying fish. There are two large tuna canneries in Ghana – the Pioneer Food Cannery and the Ghana-Agro Food Company; these are located in Tema. Products from these plants go to European Union (EU) countries, USA, other African countries and domestic markets.

1.1.5 **FISH EXPORTS IN GHANA**

Fish is Ghana’s most important non-traditional export commodity. In 2002, Export earnings from fish and fishery product amounted to nearly US$ 96million. The export destination is mainly EU countries (Caesar, 2005).

Fish and seafood exports from Ghana are made up of tuna (whole, loins and canned), frozen fish shrimps, lobsters, cuttlefish and dried/smoked fish.
1.1.6 FISHERIES ADMINISTRATION AND MANAGEMENT

The Directorate of Fisheries of the Ministry of Food and Agriculture is responsible for policy formulation and implementation, management and control of the fishing industry under the general guidance and direction of a Minister of State for Fisheries Commission. The Fisheries Commission advises the Minister in all matters pertaining to the industry.

The Directorate’s mission "is to promote sustainable exploitation and responsible utilization of fishery resources of Ghana through sound management practices, research, and appropriate technological development for culture and capture fisheries, effective extension and provision of other support services to fish farmers, fishermen, fish processors and traders for improved income and fish food security" (MOFA, 2010). The Directorate of Fisheries of the Ministry of Food and Agriculture is to prepare and keep under continual review, plans for the management and development of marine and freshwater capture fisheries and aquaculture.

The current Fisheries Law (Act 625 of 2002) provides for the integration of the Directorate of Fisheries and the Fisheries Commission for the regulation and management of the utilization of fisheries resources of Ghana and coordination of the policies in relation to them.

1.1.7 GOVERNMENT INVOLVEMENT AND INVESTMENT:

Currently, the attention of the Government towards the fishing industry now seems to have been shifted to the oil and gas industry.

The announcement that Ghana has discovered oil in commercial quantities seems to have rendered all other activities very irrelevant and in all workshops organized, the subject had been oil revenue. The oil will not employ even 5% of the country’s population and it is certainly not an infinite resource (Amarfio, 2010). It is therefore very sad to watch as
everything is happening in the oil and gas industry except for real and genuine measures to protect the fishery and livelihood that had depended on the fishing industry.

Recently a $1.3 Billion loan had been acquired from China to be invested in the oil and gas industry, an industry whose whole life period of existence cannot employ more than 800 men (GNA, 2012).

1.1.8 OIL VERSUS FISH

Though it’s not been openly admitted by Ghanaians, Ghana’s fisheries is in serious quagmire, competing for survival in the wake of the love and preference of oil over fish, with state institutions and politicians alike, breaking every single law just to allow oil triumph over our fishery. It all started when all the oil exploration companies with impunity totally disregarded the provision in the Act 625 section 93 captioned Fisheries Impact Assessment (FIA).

Which States that;

"1) A person or government departments or other agency planning to conduct any activity other than fishing, which is likely to have a substantial impact on the fishery resources or other aquatic resources of Ghana, shall inform the Commission (FISHERIES-mine) of the plans prior to the commencement of the planned activity with the view to the conservation and protection of the resources."

"2) The commission may make or require reports and recommendations by those conducting the planned activity regarding the likely impact of the activity on the fishery resources or other aquatic resources of Ghana and possible means of minimizing adverse impacts, which shall be taken into accounts by persons, government department or agency in the planning of the activity and in the development of the means of preventing or minimizing the adverse
impacts.”

“3) The requirement under this section shall be in addition to any other requirements of the Environmental Protection Agency (EPA).”

The provision did not subject the FIA under the belly of the Environment Impact Assessment (EIA) which is purely a requirement under the EIA regulation 1999, a law that predates the Act 625 of 2002. The supervising agency of the FIA is also not EPA but the Fisheries Commission, which is why it is not acceptable for the Jubilee Partners to claim that their hurriedly prepared EIA, which is so copiously conducted, completely integrates fisheries impact.

That position of the jubilee partners is against the provision in section 93.1-3 and this must be rectified. It must be acknowledged that the competencies required for the total analysis may not all be available at the EPA and that is why the two requirements must be handled separately with some coordination.

The fisheries sector requires a lot of expertise, apart from fisheries scientists, there are fisheries economist, statistician and a lot more experts that work with and for the commission. At least Kwame Nkrumah University of Science and Technology (KNUST), University of Ghana, Legon and the University of Cape Coast have departments with research biases for fisheries and marine science.

To ignore this section of the Act 625 and assume wrongly that EPAs requirement under EIA regulation 1999 is enough to manage the oil impact on fisheries is very unfortunate. These, therefore beg the argument that the so called integrated EIA conducted by the Tullow led Jubilee partners, for which we are experiencing destructive impacts on fish landing was enough to cover impact on fisheries.
The provision requires that the commission is informed, and by my understanding of informing a statutory body such as the EPA, one has to follow due diligence and provide a well written out document stating all major activity and then availing ones competencies for discussion with the commission. Unfortunately, in the entire discussion from the planning, seismic activities, test drilling, mounting of rigs and actual drilling and laying of pipelines, the Fisheries Commission was not informed nor involved in any decision making process.

Even in the process of the collection of data to form baseline for analysis, the commission and its departments were not properly involved and only an historical data rather than a trend data was used.

When Kosmos spilled the mud in 2010, we had a huge challenge as a country holding them to the impact because we do not as a country consider the Fisheries Act as part of the set of laws governing the entire natural resource sector. It was obvious that there were damages to fishery; however, we refused to consider impact of that damage to the fishery. Besides, the competent body by Act 625 to deal with the issue according to section 92 (2) of Act 625 should be the Fisheries Commission.

There have been many cases when pollution of fisheries habitat and its damage to the fishery has been handled exclusively by the Environmental Protection Agency. These issues go just beyond EPA because the Fisheries Commission is supposed to be a competent body constituted by law with departments and units to effectively measure impact. If, as a state, we have not upheld the Fisheries Commission well enough then the time is now.
1.1.9 THE EFFECT OF SHIPPING ON FISHERIES

The aspect of shipping where ballast water is filled at different places and discharged at different places had serious depleting effects on the fish species in the sea. Ships fill their ballast tanks with sea water to boost their stability; during ballasting, different fish species are taken into the tanks of the ships for voyage and upon arrival the ship pumps out the sea water which contains the fish species into different territorial waters which may not be conducive for their survival.

1.1.10 PROTECTION OF THE FISHERY FROM OUR IMPACT;

It is sad observing how frantic efforts are made to protect oil facilities from fishermen denying them access to places considered sensitive oil areas. Much as it is important to protect investment as well as life and properties, the rights of others to sustained livelihood must not be tempered with.

Beyond the Section 93 which seeks to ensure that minimal damage is done to the marine biodiversity by activities unrelated to fishery, section 91 also places responsibility on the Fisheries Commission to advice the Minister on which areas should be marine reserves, thus excluding those areas from not just fishing related activities but any activity whose impact will have effect on the fisheries.

1.2 PROBLEM STATEMENT

The fishing industry in Ghana has gone through several developments, such as the transition from the use of small canoes and paddles to the use of large fishing boats. These developments have in turn introduced several challenges in the fishing industry.

For instance the modern system of fishing has over-shadowed the old way of fishing, thus the change from artisanal to commercial fishing. There is a difference, taking into consideration the storage capacity an artisanal fisherman will need to store his fish compared to the storage
capacity a commercial fisherman will need. Also the focus of the Government on the fishing industry has changed, compared to other industries such as the oil and gas industry. It is against this background that the study will be conducted to ascertain the various challenges facing fishing in Ghana especially in Cape Coast and Elmina fishing communities.

1.3 RESEARCH QUESTIONS

- What is the impact of oil exploration on fishing?
- What are the fishermen's perspective of a challenge to the fishing industry?
- What effect do foreign vessels and boat have on the operations of the fishermen?
- Should the Government allow light fishing?
- How do you store excess fish when there is a good harvest?
- What suggested solutions do the fishermen have regarding the challenges to the industry?

1.4 OBJECTIVES

General objectives

- To assess the actual challenges the fishermen in Cape Coast and Elmina are facing in their operations.

Specific objectives

- To determine the impact of oil exploration on fishing.
- To determine the impact of foreign vessel activity on fishing activities in Ghana.
- To determine how the political influence on premix fuel have affected fishermen.
• To determine the effect of banned light fishing on the fishermen.

• To investigate the effectiveness of existing structures for storing excess fish during a good catch.

1.5 SCOPE OF THE STUDY

• The study is focused on the fishermen in Cape Coast and Elmina captured under the records of Cape Coast fisheries Department of the Ministry of Food and Agriculture.

• The research will focus on Marine Fisheries as there are other types of Fisheries.

1.6 LIMITATIONS AND DELIMITATIONS OF THE STUDY

The findings of the study may not be a true reflection of the situation on the ground because of the reliance on the Cape Coast Fisheries Department records only. Also, the results may not be applicable to other fishing communities.

The focus on only the mentioned category of fishermen is another limitation, this is because there may be other fishermen not captured in the records of the Central Region’s MOFA. The use of the records only is to reduce cost as well as save time.

1.7 THE JUSTIFICATION OF THE STUDY

This study will serve as;

• A guide to the stakeholders, policy makers and those in academia in making decisions in the fishing industry.

• The basis for further research.
1.8 DEFINITION OF TERMS:

Aquaculture- also known as aqua farming is the farming of aquatic organisms such as fish, crustaceans, molluscs and aquatic plants.

Light Fishing- is fishing with artificial light to attract fish.

Oil exploration- is discovering or finding the oil.

Oil exploitation- is drilling the oil for sale.

Saeiko – a name given to the foreign fishing vessels operating in Ghana’s territorial waters.

Fishing vessel or vessel means any ship or boat, of any nature whatsoever, irrespective of the form of ownership, used or intended to be used for the purpose of commercial fishing.

Trawler – a vessel used in trawling.

Trawling – fishing by pulling/towing a dredge net through the water.

ILO - International Labour Organization.

Connection – illegal.

1.9 ORGANIZATION OF THE STUDY

- The report would be written under five chapters:
- **Chapter one:** This introductory chapter includes: the background information, problem statement, objective of the study, scope and limitation, justification of study, operational definitions of concept and the Organization of chapters,
- **Chapter two:** This chapter presents the review of related literature on challenges facing the fishing industry.
• **Chapter three:** This chapter deals with the methods and techniques or instrument for collecting data, and this includes the population and sample sizes, sampling procedure, Data collection technique, field problems, data processing.

• **Chapter four:** Data analysis and presentation of findings. This section interprets and discusses the data collected from the field.

• **Chapter five:** Summary of findings and conclusions as well as recommendations are dealt with in this chapter.
CHAPTER TWO

LITERATURE REVIEW

2.1 DEFINITION OF FISHING

Fishing is the activity of trying to catch wild fish (Schrage et al., 1992). Fish are normally caught in the wild. Techniques for catching fish include hand gathering, spearing, netting, angling and trapping.

Ronnie Garrison (2012), in his article 'Fishing Is A Recreation for All' defines fishing as the act of catching fish in a variety of ways. Commercial fishing is taking fish for sale. Recreational fishing is catching fish for personal use or for the sport of catching fish.

Fishing is a common human activity which pertains on getting fish from certain bodies of water. Fishing can be done either on aquatic or marine bodies of water like the ocean/sea, rivers, lakes, and a lot more (NDFHC, 2010).

Fishing is the act, occupation, or sport of catching fish (Willis, 2004).

Fishing is the act, practice, or art of one who fishes (Dave et al., 2002).

The term fish is used to refer to any aquatic vertebrate that has a skin covered with scales, two sets of paired fins, some unpaired fins, and a set of gills (Klappenbach, 2012).

The term fishing is the technique, occupation, or diversion of catching fish. The sport or business of catching fish.

The catching or trying to catch fish, typically by using a net or hook and line is fishing (Landbeck, 2005).
According to Schrage et al. (1992), the term fishing may be applied to catching other aquatic animals such as molluscs, cephalopods, crustaceans, and echinoderms. The term is not normally applied to catching farmed fish, or to aquatic mammals, such as whales, where the term whaling is more appropriate.

According to the Food and Agriculture Organization (FAO) statistics, the total number of commercial fishermen and fish farmers in the world is estimated to be 38 million. Fisheries and aquaculture provide direct and indirect employment to over 500 million people worldwide. In 2005, the worldwide per capita consumption of fish captured from wild fisheries was 14.4 kilograms, with an additional 7.4 kilograms harvested from fish farms. In addition to providing food, modern fishing is also a recreational pastime.

2.1.1 HISTORY OF FISHING

According to Schrage et al. (1992), fishing is an ancient practice that dates back to, at least, the beginning of the Paleolithic period about 40,000 years ago. Isotopic analysis of the skeletal remains of Tianyuan man, a 40,000 year old modern human from eastern Asia, has shown that he regularly consumed freshwater fish. Archaeological features such as shell middens, discarded fish bones and cave paintings show that sea foods were important for survival and were consumed in significant quantities. During this period, most people lived a hunter-gatherer lifestyle and were, of necessity, constantly on the move. However, where there are early examples of permanent settlements (though not necessarily permanently occupied) such as those at Lepenski Vir, in the ancient Sri Lanka they are almost always associated with fishing as a major source of food.
Figure 2.1, Egyptians bringing in fish, and splitting for salting.
Source (www.wikipedia.org)

The ancient river Nile was full of fish; fresh and dried fish were a staple food for much of the population. The Egyptians had implements and methods for fishing and these are illustrated in tomb scenes, drawings, and papyrus documents. Some representations hint at fishing being pursued as a pastime. In India, the Pandyas, a classical Dravidian Tamil kingdom, were known for the pearl fishery as early as the 1st century BC. Their seaport Tuticorin was known for deep sea pearl fishing. The paravas, a Tamil caste centred in Tuticorin, developed a rich community because of their pearl trade, navigation knowledge and fisheries. Fishing scenes are rarely represented in ancient Greek culture, a reflection of the low social status of fishing. However, Oppian of Corycus, a Greek author wrote a major treatise on sea fishing, the Halieulica or Halieutika, composed between 1177 and 1180. This is the earliest such work to have survived to the modern day. Pictorial evidence of Roman fishing comes from mosaics. The Greco-Roman sea god Neptune is depicted as wielding a fishing trident. The Moche people of ancient Peru depicted fishermen in their ceramics. One of the world’s longest trading histories is the trade of dry cod from the Lofoten area of Norway to the southern parts of Europe, Italy, Spain and Portugal. The trade in cod started during the Viking period or before, has been going on for more than 1,000 years and is still important.
2.1.2 TYPES OF FISHING

COMMERCIAL FISHING

Commercial fishing is the capture of fish for commercial purposes. Those who practice it must often pursue fish far into the ocean under adverse conditions. Commercial fishermen harvest almost all aquatic species, from tuna, cod and salmon to shrimp, krill, lobster, clams, squid and crab, in various fisheries for these species. Commercial fishing methods have become very efficient using large nets and sea-going processing factories. Individual fishing quotas and international treaties seek to control the species and quantities caught.

A commercial fishing enterprise may vary from one man with a small boat with hand-casting nets or a few pot traps, to a huge fleet of trawlers processing tons of fish every day.

Commercial fishing gear includes weights, nets (e.g. purse seine), seine nets (e.g. beach seine), trawls (e.g. bottom trawl), dredges, hooks and line (e.g. long line and hand line), lift nets, gillnets, entangling nets and traps.

According to the Food and Agriculture Organization of the United Nations, total world capture fisheries production in 2000 was 86 million tons (FAO, 2002). The top producing countries were, in order, the People's Republic of China (excluding Hong Kong and Taiwan), Peru, Japan, the United States, Chile, Indonesia, Russia, India, Thailand, Norway and Iceland. Those countries accounted for more than half of the world's production; China alone accounted for a third of the world's production. Of that production, over 90% was marine and less than 10% was inland.

A small number of species support the majority of the world's fisheries. Some of these species are herring, cod, anchovy, tuna, flounder, mullet, squid, shrimp, salmon, crab, lobster, oyster and scallops. All except these last four provided a worldwide catch of well over a
million tonnes in 1999, with herring and sardines together providing a catch of over 22 million metric tons in 1999. Many other species as well are fished in smaller numbers.

ARTISAN FISHING

Artisan fishing is a term used to describe small-scale low-technology, commercial or subsistence fishing practices. This term particularly applies to coastal or island ethnic groups using traditional techniques such as rod and tackle, arrows and harpoons, throw nets and drag nets, and traditional fishing boat. It does not usually cover the concept of fishing for sport, and might be used when talking about the pressures between large-scale modern commercial fishing practices and traditional methods, or when aid programs are targeted specifically at fishing or near subsistence levels.

Artisan fishing is often, but not always, less intensive and less stressful on fish populations than modern industrial fishing techniques. It is subject to difficulties in the export process due to inadequate investment in refrigeration and processing facilities. However, the most important goal of artisan fishing is domestic consumption, as it is often an important source of inexpensive and accessible protein in poor coastal areas.

RECREATIONAL FISHING,

Recreational fishing, also referred to as sport fishing, is fishing for pleasure or for competition. It can be contrasted with commercial fishing, which is fishing for profit, or subsistence fishing, which is fishing for survival.

The most common form of recreational fishing is done with a rod, reel, line, hooks and any one of a wide range of baits. Other devices, commonly referred to as terminal tackle, are also used to affect or complement the presentation of the bait to the targeted fish. Some examples
of terminal tackle include weights, floats, and swivels. Lures are frequently used in place of bait. Some hobbyists make handmade tackle themselves, including plastic lures and artificial flies. The practice of catching or attempting to catch fish with a hook is known as angling.

The Big-game fishing is conducted from boats to catch large open-water species such as tuna, sharks and marlin. Nodding and trout tickling are also recreational activities. One method of growing popularity is kayak fishing. Kayak fishing is fishing from a kayak. Kayaks are stealthy and allow anglers to reach areas not fishable from land or by conventional boat.

2.2 RELEVANT EARLIER WORK DONE

Challenges facing the fishing industry in Ghana had been looked at by Honu (2009) in his unpublished dissertation. He used a case study of Kpone fishing community and came out that the lack of Navy patrol is a major cause to the problems of the challenges facing the fishing industry in Ghana, his findings are that illegal fishing occurs on our waters thereby deleting our fishing stock. He suggested that the Navy should be adequately resourced to check all illegal fishing practices on our territorial waters.

Amarfio (2012) also had a look at some of the challenges facing the fishing industry in Ghana. He focused on the Fisheries Act and the impact of oil exploration and exploitation on fisheries.

He also suggested that the Fisheries Commission, EPA, MOFA and all Governmental agencies should rise up and address the impact of oil exploitation and exploration in our territorial waters.

In view of all these findings there are still gaps which have not been researched into and addressed. It is in view of this that this research is done focusing on some of this gaps such as
supply of premix and political influence, the attention of the Government towards the
fisheries sector, ‘connection’ prices in the sale and distribution of premix fuel.

2.3 CHALLENGES FACING GHANA’S FISHING INDUSTRY IN GHANA

A number of issues have been militating against the growth of the industry. These issues include:

- Effective and collaborative management of fisheries resources.
- Marine biodiversity conservation
- Political influences and management of Pre-Mix fuel
- The Legalities in the Fishing Industry
- Light fishing as an alternative in the central region
- Small scale fisheries
- Pair trawling

2.3.1 EFFECTIVE AND COLLABORATIVE FISHERIES RESOURCE MANAGEMENT

In spite of attempts by the Ministry of Food and Agriculture to encourage collaborative
resource management through the establishment of Communities Based Fisheries
Management Committees (CBFMCs), communities are still found wanting in their
participation in sustainable management of the resource and this has been contributing to the
rapidly depleting resource and the current inter-conflicts within the sector. These and other
factors have culminated in the impoverishment of coastal communities.

Fisheries resource management in Ghana particularly the marine resources have been
erroneously deemed to be infinite, and as a nation ignobly supervise the destruction of the

21
marine ecosystem. We had had occasions to have had a very effective traditional management system that recognizes preservation of the sea and the total marine ecosystem that included plants, such as the mangroves and coconut as well as the sea bed and sea sand.

Chief fishermen wield authority and could declare at least a close season for one week to control stock harvesting. This position was further strengthened with the introduction of the community based fisheries management committees with the Chief fisherman as the chairman.

2.3.2 MARINE BIODIVERSITY CONSERVATION

The issue of marine biodiversity conservation remains very challenging for the management of the sector due largely to both institutional and systematic failure in appreciating the enormous challenge in waste management and marine ecosystem conservation. Various legislations and policies have attempted to ensure proper conservation programmes for the marine ecosystem but these have not been the panacea principally due to inadequate enforcement regime. The Fisheries Act prohibits development of any kind within fifty (50) meters of any natural water body; however in Ghana water bodies including lagoons are reclaimed for structural development. We live in a country where no waste whether liquid or solid, is treated and all drains are directed through natural running water bodies and end up in the sea.

The Fisheries Act 625 mandates the Minister responsible for the sector to declare close and open season in order to conserve marine species. It is however a sad commentary that as if there has not been the need for the Act, no Minister has implemented or ever declared a close or open season since the entry into force of the Act in May, 2002. The International Conservation on Atlantic Tuna (ICAT) which Ghana is a member of, allows a quota system,
and basically that is the only quota system we have in Ghana for fishery that abounds in
Ghana to the extent that the ICAT permitted Ghana to exceed her 5000 metric tonnes quota
by 2500 metric tonnes. We do not have any scientific basis for measuring what quantities of
which fish species we harvest; neither do we have any reliable seasonal baseline data or
information on particular fish species in Ghana.

2.3.3 THE LEGALITIES IN THE FISHING INDUSTRY

Section 93 of the Act 625 states clearly the need to present Fisheries Impact Assessment
(FIA) to the fishery commission before any activity other than fishing can take place in our
water bodies. The law at the time it was being promulgated in 2002 had the EPA Act in place
and appropriately makes reference to the EPA Act in the sub-section. The FIA and the
Environmental Impact Assessment (EIA) are therefore mutually exclusive as such it should
be incumbent on the actors in the oil industry to prepare a comprehensive FIA.

There are however a number of challenges that makes it excusable for now why the FIA
might have been incorporated in the EIA because of Inadequate legal provisions; apart from
the mention in the section 93 of the Act 625, there is no legislative instrument or regulation
defining processes for the development of the FIA not to talk about Inadequate Capacity: the
supervising authority, the Fisheries Commission had admitted they do not have the requisite
capacity to handle the very technical document and have made it a policy to work closely
with the EPA, Ghana Maritime Authority and other institutions most of which have
representatives on the commission.
2.3.4 POLITICAL INFLUENCES AND MANAGEMENT OF PRE-MIX FUEL

Ever since premix fuel was introduced, its supply have been influenced by politicians, because it is a sensitive commodity and every politician that will care about the distribution of this product obtains favour in terms of vote from the fishermen that use the product.

The problem of premix fuel and political influences almost died off some years back. Until recently politicians cared least about what happened in the fishing industry, especially the local sector to the extent that a whole publication on premix fuel was published by Mbre (2010) and it was fought fiercely on all campaign platforms.

Premix which is a mixture of 29 parts normal super petrol and one part marine gasoline is 50% subsidized with the Ghanaian tax payer’s money. It was introduced in 1993 by the Provisional National Defence Council (PNDC) Government led by Flt. Lt Rawlings to help reduce the cost of embarking on fishing expedition, and its sales were made a sole responsibility of fishermen. Under the New Patriotic Party (NPP) government, individuals were allowed to be part of the premix sales and that led to flooding the market with the products, and when supply exceeded demand, this time, prices did not fall, opportunity for diversion became rife. Fluctuations in supply of premix fuel have effect on fishing activity.

The fishing industry in Ghana has to meet the demand of the people of this country. In order to achieve this, certain measures must be put in place.

2.3.5 SMALL SCALE FISHERIES

Small-scale fisheries have failed to keep pace with demand for food and employment in developing countries and urgently require attention to technology, health, economics and reform in management and governance.
2.3.6 LIGHT FISHING AS AN ALTERNATIVE IN THE CENTRAL REGION:

Daily data collection on fish landings by artisanal fishers, in shore vessels and industrial vessels in the Marine fish production for 2010 (Jan - June) is reported to be 166,165mt while that of the same period in 2011 is estimated to be 157,956mt. (MOFA, 2011)

If this shortage trend continuous then the country would have to find solutions, usually the Maximum Sustainable Yield (MSY) is noted to be the best among the fishery management tools to correct such shortages in catch. The MSY is a useful tool for fishery management especially for the conservation of fish stocks. Maximum Sustainable Yield is theoretically, the largest yield (or catch) that can be taken from a species' stock over an indefinite period. Fundamental to the notion of sustainable harvest the concept of MSY aims to maintain the population size at the point of maximum growth rate by harvesting the individuals that would normally be added to the population, allowing the population to continue to be productive indefinitely. However strict adherence to this MSY concept will not achieve socioeconomic goals (Crutchfield, 1967). It is in light of this shortage in catch, that fishermen would look for alternative ways to attract more fish into their net as a catch. This has really brought about the issue of light fishing that is, using light to attract more fish in order to catch them.

This practice will help increase the catch yield of the fishermen.

2.3.7 PAIR TRAWLING

It involves 2 fishing trawlers of almost same size and horse power to employ in the process of fishing by dragging of a net over a long distance either along the bottom or mid water of a fresh or marine water body.
2.4 GHANA TERRITORIAL WATERS

LEGAL BACKGROUND

The sovereignty of a coastal state extends beyond its land territory and internal waters and, in the case of an archipelagic state, its archipelagic waters, to an adjacent belt of sea, described as the territorial sea. This sovereignty extends to the air space over the territorial sea as well as to its bed and subsoil. The sovereignty over the territorial sea is exercised subject to UNCLOS 82 and to other rules of international law.

Every state has the right to establish the breadth of its territorial sea up to a limit not exceeding 12 nautical miles, measured from baselines determined in accordance with this Convention. The outer limit of the territorial sea is the line every point of which is at a distance from the nearest point of the baseline equal to the breadth of the territorial sea. Except where otherwise provided in this Convention, the normal baseline for measuring the breadth of the territorial sea is the low-water line along the coast as marked on large-scale charts officially recognized by the coastal state.
Figure 2.2; International coastal boundary showing Baseline, territorial waters, 12 nautical miles from the shore, Contiguous zone, 12 nautical miles from the territorial waters, Exclusive Economic zone (EEZ), 200 nautical miles from the baseline and international waters outside the EEZ.

Source (www.wikipedia.org)

Where the coasts of two states are opposite or adjacent to each other, neither of the two States is entitled, failing agreement between them to the contrary, to extend its territorial sea beyond the median line every point of which is equidistant from the nearest points on the baselines from which the breadth of the territorial seas of each of the two states is measured. The above provision does not apply, however, where it is necessary by reason of historic title or other special circumstances to delimit the territorial seas of the two states in a way which is at variance therewith.

The coastal state may, in the exercise of its sovereign rights to explore, exploit, conserve and manage the living resources in the exclusive economic zone, take such measures, including boarding, inspection, arrest and judicial proceedings, as may be necessary to ensure compliance with the laws and regulations adopted by it in conformity with this Convention. Coastal state penalties for violations of fisheries laws and regulations in the exclusive economic zone may not include imprisonment, in the absence of agreements to the contrary by the States concerned, or any other form of corporal punishment.

In cases of arrest or detention of foreign vessels the coastal State shall promptly notify the flag state, through appropriate channels, of the action taken and of any penalties subsequently imposed (UNCLOS, 1982).
2.4.1 COASTAL FISHING AREAS

The coastline of Ghana measures 758km², with a continental shelf of 18,095km². The Territorial sea (12 nautical miles) measures 11890km² where we claim Exclusive Economic Zone (EEZ) of 216,867 km² (MOFA, 2002).

The fisheries Act 2002 Act 625, as well as the Territorial water and continental shelf Act of 1977 establishes an inshore Economic Zone (IEZ) which comprises the coastal waters between the coastline and 30 meters depth contour of 6 nautical mile (nm) offshore from the baseline, is reversed for artisanal and canoe fishing and the law of the use of fishing gears for operation.

This gives the local fishermen in Cape Coast and Elmina the authority to claim territorial right from the baseline to 6 nautical miles offshore automatically.

2.5 FISHERIES MANAGEMENT

In order to find ways to protect fishery resources and to achieve a sustainable exploitation, fisheries management is required. It is the integrated process of information gathering, analysis, planning, consultation, decision-making, allocation of resources and formulation and implementation, with enforcement as necessary, of regulations or rules which govern fisheries activities in order to ensure the continued productivity of the resources and the accomplishment of other fisheries objectives.

Modern fisheries management is often referred to as a governmental system of appropriate management rules based on defined objectives and a mix of management means to
implement the rules, which are put in place by a system of monitoring control and surveillance.

According to the FAO, fisheries management should be based explicitly on political objectives, ideally with transparent priorities. Typical political objectives when exploiting a fish resource are to:

- maximize sustainable biomass yield
- maximize sustainable economic yield
- secure and increase employment
- secure protein production and food supplies
- increase export income

Such political goals can also be a weak part of fisheries management, since the objectives can conflict with each other.
CHAPTER THREE

RESEARCH METHODOLOGY

3.1 INTRODUCTION

Miles and Huberman (1984) stressed that, knowing what you want to find out leads inexorably to the questions of how you will get that information. This chapter describes the approach used to conduct the research. The findings from the literature review form the basis of the research methodology. It also discusses the methods and tools used in this research.

3.2 METHOD TO BE APPLIED IN THIS RESEARCH

The simple random sample method was used to select respondents to respond to the questionnaire. This is to give equal opportunity to each and every fisherman to respond. This method was used because of the large nature of the sample size from the population and the ability to give any of the sample unit to have an equal chance to contribute to this work.

The basic instrument that was used for this research is the questionnaire; this is because the questionnaire is less expensive.

For the purpose of clarity and understanding of the questionnaire to obtain good results, the self-administered type of questionnaire was used.

3.3 STUDY AREA

The Central Region is made up of a population of about 1,580,047 representing (8.6%) of Ghana’s population size (Census, 2000).

The target groups for this study in this region will be Elmina and Cape Coast fishermen. The fishing equipment usually used cannot be compared to modern day fishing equipment as well as their catch methods. Cape Coast fishermen do not have a legalized association formed but
they usually come together to have meetings as and when there are matters affecting them and their areas of operations. And as a result of such meetings, they have a chief fisherman who coordinates with the fisheries department on their behalf to send their grievances to the Government.

But in the case of Elmina, the fishermen have an association; they usually understand and meet to protect their economic interest.

3.4 POPULATION AND SAMPLE SIZE;

POPULATION

Population means the total number or aggregate concern, which may lead to obtaining relevant data required for the study.

The population for the research comprised of fishermen in Cape Coast and Elmina fishing communities, but attention would be given to the fishermen captured in the records of the Central Region’s MOFA fisheries department.

Fishermen according to estimation is taken to be 1600 for Cape Coast and for Elmina it is estimated at 5325. This figure was reached by taken into account the number of fishermen operating in Cape Coast and Elmina which are captured in the records of the MOFA fisheries department.

SAMPLE SIZE;

The sample size for Cape Coast fishermen will be 80 and that of Elmina also 266, this sample size will be chosen to enable the researcher to compare the data.

The researcher would distribute 80 questionnaires to Cape Coast and 266 to Elmina fishermen.
3.5 DATA COLLECTION

This section reveals the type of information acquired and the relevant instrument used for the data collection.

3.5.1 Source of data

The data for the study is categorized into two major types, which are primary and secondary.

The required secondary data were collected from the internet, and other text books and journals.

In the case of primary data, they were strictly obtained from the identified research sample of the study.

3.5.2 Instrument for data collection

Questionnaire and interview was the main instrument that was used to collect the primary data. The questionnaire was done by hand delivery by the researcher to the targeted respondents who were assured that their responses given would be treated with utmost confidentiality and would be used specifically for the objective of the study.

Though delivery of the questionnaire was done in person, the questionnaire was not given and left to the respondents to fill all by themselves but the researcher assisted by self-administering the questions to the respondents for them to answer. This is because, preliminary survey conducted by the researcher proved that most of the target group could not read and write well. So for the purpose of clarity and good data the researcher self-administered the questions and undertook the task of form filling based on the answers that was provided by the respondents.
3.5.3 Summary of data collected

Table 3.1 Summary of data collected

<table>
<thead>
<tr>
<th>Data collection</th>
<th>Questionnaires sent</th>
<th>Questionnaires completed</th>
<th>Interview guide</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cape Coast</td>
<td>80</td>
<td>80</td>
<td>3</td>
</tr>
<tr>
<td>Elmina</td>
<td>266</td>
<td>266</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>346</td>
<td>346</td>
<td>6</td>
</tr>
</tbody>
</table>

The researcher sent 346 questionnaires to the field. 80 of which went to Cape Coast the other 266 were taken to the Elmina fishing community respectfully. After applying the simple random approach and self-administered approach the researcher was able to complete all the 346 questionnaires sent to the field.

6 people in top position were interviewed by the researcher by the help of the Interview guide, and the outcome analyzed in the next chapter.
CHAPTER FOUR

DATA ANALYSIS AND PRESENTATION

4.1 INTRODUCTION

In chapter 3, the details of the data collection process was presented, the findings presented in this chapter follows the analysis of the data and documented evidence collected through administration of questionnaires and interviews.

Information gathered from the field consisted of background information such as gender, age, ethnicity, educational level and religion. Information gathered also consisted of knowledge, attitude and practice and finally possible suggestions to the study.

4.2 RESULT FROM QUESTIONNAIRES

On the whole 346 questionnaires were administered to the sample population. The level of respondents is satisfactory as the entire 346 questionnaires administered were obtained representing a 100 percent respondent rate.

This 100 percent level of respondent rates was achieved because of the self-administered approach the researcher used, so the level of response will be regarded as reasonable enough for the purpose of the study and the outcome believed to offer a clearer picture on the challenges facing the fishing industry of Ghana.

4.3 DATA ANALYSIS

An analysis of the background of respondents has covered five parameters being gender, age range, ethnicity, educational level and religion.

A summary of the analysis follow in the form of tables and charts with a brief elaboration on the respondent’s representation.
Table 4.1 Gender of respondents

<table>
<thead>
<tr>
<th>Respondents</th>
<th>Males</th>
<th>Females</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cape Coast</td>
<td>80</td>
<td>0</td>
</tr>
<tr>
<td>Elmina</td>
<td>266</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>346</td>
<td>0</td>
</tr>
</tbody>
</table>

In analyzing the data on gender, the study reveals that the gender distribution indicated in the table shows only male fisher respondents, indicating a 100 percent representation of respondents. This representation portrays stronger male presence domination in the fishing activity.

Table 4.2 Age range of respondents

<table>
<thead>
<tr>
<th>Age Range</th>
<th>Cape Coast</th>
<th>Percentage (%)</th>
<th>Elmina</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-24</td>
<td>7</td>
<td>8.75%</td>
<td>15</td>
<td>5.64</td>
</tr>
<tr>
<td>25-29</td>
<td>9</td>
<td>11.25%</td>
<td>42</td>
<td>15.79</td>
</tr>
<tr>
<td>30-34</td>
<td>10</td>
<td>12.50%</td>
<td>30</td>
<td>11.28</td>
</tr>
<tr>
<td>35-39</td>
<td>14</td>
<td>17.50%</td>
<td>27</td>
<td>10.15</td>
</tr>
<tr>
<td>40-44</td>
<td>18</td>
<td>22.50%</td>
<td>36</td>
<td>13.53</td>
</tr>
<tr>
<td>45-49</td>
<td>12</td>
<td>15.00%</td>
<td>83</td>
<td>31.20</td>
</tr>
<tr>
<td>50-54</td>
<td>8</td>
<td>10.00%</td>
<td>15</td>
<td>5.64</td>
</tr>
<tr>
<td>55-59</td>
<td>2</td>
<td>2.50%</td>
<td>16</td>
<td>6.02</td>
</tr>
<tr>
<td>60-64</td>
<td>0</td>
<td>0.00%</td>
<td>2</td>
<td>0.75</td>
</tr>
<tr>
<td>Total</td>
<td>80</td>
<td>100.00%</td>
<td>266</td>
<td>100.00</td>
</tr>
</tbody>
</table>
In analyzing the data majority of the respondents in Cape Coast are in the age range of 40-44 years representing 22.50 percent of the respondents, in Elmina majority of the respondent falls within the age range of 45-49. None happens to fall within the age range of 60-64 in Cape Coast unlike in Elmina that 2 people happens to falls within the age range of 60-64.

This indicates that from table 4.2 there are some fishermen still in active service at their pension age.

Table 4.3 Ethnicity of respondents

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>Cape Coast</th>
<th>Percentage (%)</th>
<th>Elmina</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Akan</td>
<td>78</td>
<td>97.50</td>
<td>266</td>
<td>100</td>
</tr>
<tr>
<td>Ewe</td>
<td>2</td>
<td>2.50</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Other</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>80</td>
<td>100.00</td>
<td>266</td>
<td>100</td>
</tr>
</tbody>
</table>

In analyzing the data from table 4.3 the Akans have dominated the fishery expedition in the Central region as compared to the other ethnic groups. In Cape Coast majority of the fishermen happen to belong to Akan with only few being Ewe and in the case of Elmina the entire respondents happened to be Akan representing 100 percent.
Table 4.4 Religions of respondents

<table>
<thead>
<tr>
<th>Religion</th>
<th>Cape Coast</th>
<th>Percentage (%)</th>
<th>Elmina</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traditionalist</td>
<td>12</td>
<td>15.0</td>
<td>30</td>
<td>11.28</td>
</tr>
<tr>
<td>Christian</td>
<td>56</td>
<td>70.0</td>
<td>203</td>
<td>76.32</td>
</tr>
<tr>
<td>Muslim</td>
<td>2</td>
<td>2.5</td>
<td>18</td>
<td>6.77</td>
</tr>
<tr>
<td>None</td>
<td>10</td>
<td>12.5</td>
<td>15</td>
<td>5.64</td>
</tr>
<tr>
<td>Total</td>
<td>80</td>
<td>100.0</td>
<td>266</td>
<td>100.00</td>
</tr>
</tbody>
</table>

Data for Cape Coast and Elmina indicated that majority of the fishermen are Christians, followed by the traditionalist, also there are some which do not belong to any of the religious group.

The data from table 4.4 depicts that there are more Christians than any other religious group plying their trade as fishermen in the Central Region.

Table 4.5 Positions held onboard

<table>
<thead>
<tr>
<th>Position</th>
<th>Cape Coast</th>
<th>Percentage (%)</th>
<th>Elmina</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Captain</td>
<td>12</td>
<td>15.0</td>
<td>42</td>
<td>15.79</td>
</tr>
<tr>
<td>Back Captain</td>
<td>15</td>
<td>18.75</td>
<td>36</td>
<td>13.53</td>
</tr>
<tr>
<td>Engineer</td>
<td>19</td>
<td>23.75</td>
<td>69</td>
<td>25.94</td>
</tr>
<tr>
<td>Worker</td>
<td>34</td>
<td>42.50</td>
<td>119</td>
<td>44.74</td>
</tr>
<tr>
<td>Total</td>
<td>80</td>
<td>100.0</td>
<td>266</td>
<td>100.00</td>
</tr>
</tbody>
</table>
There are various positions on board the canoe, some of which are captain, engineer, back captain and worker. The position of a captain is a sensitive position; the captain is the overall leader among the rest. Safety and navigation to fishery expedition is the responsibility of the captain.

From table 4.5 the majority of the respondents in Cape Coast and Elmina happen to be worker, followed by engineers, and the rest respectively.

Table 4.6 Respondents years of work experience

<table>
<thead>
<tr>
<th>Work experience</th>
<th>Cape Coast</th>
<th>Percentage (%)</th>
<th>Elmina</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 - 9</td>
<td>5</td>
<td>6.25</td>
<td>21</td>
<td>7.89</td>
</tr>
<tr>
<td>10 -19</td>
<td>32</td>
<td>40.00</td>
<td>33</td>
<td>12.41</td>
</tr>
<tr>
<td>20-29</td>
<td>22</td>
<td>27.50</td>
<td>69</td>
<td>25.94</td>
</tr>
<tr>
<td>30-39</td>
<td>16</td>
<td>20.00</td>
<td>120</td>
<td>45.11</td>
</tr>
<tr>
<td>40-49</td>
<td>4</td>
<td>5.00</td>
<td>18</td>
<td>6.77</td>
</tr>
<tr>
<td>50-59</td>
<td>1</td>
<td>1.25</td>
<td>5</td>
<td>1.88</td>
</tr>
<tr>
<td>60-64</td>
<td>0</td>
<td>0.00</td>
<td>0</td>
<td>0.00</td>
</tr>
<tr>
<td>Total</td>
<td>80</td>
<td>100.00</td>
<td>266</td>
<td>100.00</td>
</tr>
</tbody>
</table>

In analyzing the data on years of work experience for Cape Coast and Elmina there are more people with more than 20 years of sea going work experience in the industry. None of the respondents happens to falls between the work experience range of 60-64.
The data from table 4.6 depicts some fishermen started going to sea at a very young age. Some even said they started at primary and that lead them to boycott school.

Table 4.7 Deep sea fishing experience.

<table>
<thead>
<tr>
<th>Deep sea fishing</th>
<th>Cape Coast</th>
<th>Percentage (%)</th>
<th>Elmina</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>10</td>
<td>12.5</td>
<td>58</td>
<td>21.80</td>
</tr>
<tr>
<td>No</td>
<td>70</td>
<td>87.5</td>
<td>208</td>
<td>78.20</td>
</tr>
<tr>
<td>Total</td>
<td>80</td>
<td>100</td>
<td>266</td>
<td>100</td>
</tr>
</tbody>
</table>

To ascertain whether the fishermen have been practicing deep sea fishing, they were asked if they have ever fished in the deep sea. Their responses are shown in table 4.7 above.

The fisheries Act 2002 Act 625, as well as the Territorial water and Continental shelf Act of 1977 establishes an Inshore Economic Zone (IEZ) which comprises the coastal waters between the coastline and 30 meters depth contour of 6 nautical miles (nm) offshore from the baseline, is reserved for artisanal and canoe fishing and the law of the use of fishing gears for operation.

This gives the local fishermen in Cape Coast and Elmina the authority to claim territorial right from the baseline to 6 nautical miles offshore automatically. In spite of this law some fishermen go to the deep sea to fish. A further finding reveals that the fishermen fish in the deep sea because their areas of operations have been taken over illegally by foreign fishing trawlers leaving them no option than to find another area.

39
The Data from table 4.7 shows that it is only a minority of the fishermen at both Cape Coast and Elmina that have fished in the deep sea.

Figure 4.1 Payment of respondents

The indicators from Figure 4.1 above show how respondents are paid.

Fishermen manning a particular canoe come together to decide and agree for themselves on how to share their benefits, this can be weekly, bi weekly, monthly, yearly or whenever there is a catch sold.
The Data from table 4.2 shows that the entire fishermen at both Cape Coast and Elmina don’t have any number of hours dedicated for their work, their work hours varies and depends on the catch they will work on for a particular catch trip.

In accordance with Article 13 of International Labour Organization (ILO), Work in fishing convention, administrators have the obligation of ensuring that fishing vessels are sufficiently and safely manned for safe navigation and operation of the vessel and under the control of a competent skipper. In addition to the above, administrators are to ensure that fishers are given regular periods of rest of sufficient length to ensure safety and health.

In addition to the requirements set out in ILO, Article 13, the competent authority shall;

(a) For vessel of 24 meters in length and over, establish a minimum level of manning for the safe navigation of the vessel, specifying the number and qualifications of the fishers required.

(b) For fishing vessels regardless of size remaining at sea for more than three days, after consultation and for the purpose of limiting fatigue, establish the minimum hours of rest to be provided to fishers. Minimum hours of rest shall be less than (i) ten hours in any 24 hour
paid; (ii) 77 hours in any 7 day period. However fishermen in the central Region don’t pay attention to any of these regulations. This is because of the nature of the vessel size they operate, to them their hours of work depends on the type of catch.

Table 4.8 Fishermen involvement in accident on board

<table>
<thead>
<tr>
<th>Involvement in accident on board</th>
<th>Cape Coast</th>
<th>Percentage (%)</th>
<th>Elmina</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>63</td>
<td>78.75</td>
<td>204</td>
<td>76.69</td>
</tr>
<tr>
<td>No</td>
<td>17</td>
<td>21.25</td>
<td>62</td>
<td>23.31</td>
</tr>
<tr>
<td>Total</td>
<td>80</td>
<td>100.00</td>
<td>266</td>
<td>100.00</td>
</tr>
</tbody>
</table>

Fishermen were asked the question; Have you ever been involved in any accident on board?

And the data was computed in table 4.8 above.

Because of the nature of the work of fishermen, they become prone to a lot of risk at sea.

The data obtained from table 4.8 indicates that majority have been involved in accident on board before both for Cape Coast and Elmina.
Table 4.9 Fishermen’s perspective of their work.

<table>
<thead>
<tr>
<th>Description of work</th>
<th>Cape Coast</th>
<th>Percentage (%)</th>
<th>Elmina</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A hazardous occupation</td>
<td>80</td>
<td>100</td>
<td>266</td>
<td>100</td>
</tr>
<tr>
<td>An occupation like any other</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Safe work</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>80</td>
<td>100</td>
<td>266</td>
<td>100</td>
</tr>
</tbody>
</table>

The data representation from the two fishing communities indicates that the occupation of the fisherman is a very hazardous occupation. In table 4.9 all the fishermen agree to the fact that their work is highly risky, with none of the respondent opting for safe work or an occupation like any other.

Table 4.10 licensed or registered canoes.

<table>
<thead>
<tr>
<th>License</th>
<th>Cape Coast</th>
<th>Percentage (%)</th>
<th>Elmina</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>No</td>
<td>80</td>
<td>100</td>
<td>266</td>
<td>100</td>
</tr>
<tr>
<td>Total</td>
<td>80</td>
<td>100</td>
<td>266</td>
<td>100</td>
</tr>
</tbody>
</table>

The fishermen were asked whether their canoes were licensed or registered to fish.

From table 4.10 the data reveals that all the canoes are not licensed or registered before allowed to fish.
The Ministry of Food and Agriculture (MOFA) representatives only records and update the number of canoes operating at the shoes of Cape Coast and Elmina. On the other hand unlike the canoes, the fishing trawlers are licensed with Ghana Maritime Authority and they pay tax.

Table 4.11 Awareness of Fisheries Act

<table>
<thead>
<tr>
<th>Knowledge of Fisheries Act</th>
<th>Cape Coast</th>
<th>Percentage (%)</th>
<th>Elmina</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>4</td>
<td>5</td>
<td>41</td>
<td>15.41</td>
</tr>
<tr>
<td>No</td>
<td>76</td>
<td>95</td>
<td>225</td>
<td>84.59</td>
</tr>
<tr>
<td>Total</td>
<td>80</td>
<td>100</td>
<td>266</td>
<td>100</td>
</tr>
</tbody>
</table>

The fishermen were asked whether they are aware of the existing Fisheries Act.

The Fisheries Act was enacted to address the issues on fishing but it is very unfortunate that our fishermen do not know of the act and it significance. In table 4.11 the data representations from the two fishing communities indicate that only few fishermen are aware of the Act with the majority being ignorant of the Act.

Table 4.12 Right usage of fishing equipment and gears

<table>
<thead>
<tr>
<th>Right gears</th>
<th>Cape Coast</th>
<th>Percentage (%)</th>
<th>Elmina</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>54</td>
<td>67.50</td>
<td>170</td>
<td>63.91</td>
</tr>
<tr>
<td>No</td>
<td>26</td>
<td>32.50</td>
<td>96</td>
<td>36.09</td>
</tr>
<tr>
<td>Total</td>
<td>80</td>
<td>100</td>
<td>266</td>
<td>100</td>
</tr>
</tbody>
</table>
The fishermen were asked whether they use the right gears and equipment's in fishing

Data from table 4.12 indicates that majority of the fishermen uses the right gears to fish. The remaining minority thinks fishermen in Cape Coast and Elmina do not use the right equipment and fishing gears to fish.

On fishing equipment and gears, fishermen not using the right gears gave reasons for the usage of these gears, as that, their areas of operation have been taken over by the fishing trawlers and foreign fishing boats, so smaller portion of area's is what they have hence the need for other types of gears and equipment to improve catch level.

Table 4.13 Access to storage facility

<table>
<thead>
<tr>
<th>Access to a storage facility</th>
<th>Cape Coast</th>
<th>Percentage (%)</th>
<th>Elmina</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>No</td>
<td>80</td>
<td>100</td>
<td>266</td>
<td>100</td>
</tr>
<tr>
<td>Total</td>
<td>80</td>
<td>100</td>
<td>266</td>
<td>100</td>
</tr>
</tbody>
</table>

The fishermen were asked whether they have access to cold store to store excess fish during good catch.

Fishermen do not have access to any storage facility and becomes vulnerable to their buyer as their product can easily perish if not sold on time.

Data from table 4.13 indicates that both Cape Coast and Elmina do not have access to cold store or what so ever storage facility one can think of.
The fishermen made emphases that because they do not have any access to storage facility; their buyers cheat them at times, worsening their vulnerability situation.

Table 4.14 Light fishing

<table>
<thead>
<tr>
<th>light fishing</th>
<th>Cape Coast</th>
<th>Percentage (%)</th>
<th>Elmina</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes 42</td>
<td>52.50</td>
<td>160</td>
<td>60.90</td>
<td></td>
</tr>
<tr>
<td>No 38</td>
<td>47.50</td>
<td>106</td>
<td>39.10</td>
<td></td>
</tr>
<tr>
<td>Total 80</td>
<td>100</td>
<td>266</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>

The fishermen were asked whether the Government allow light fishing.

Data obtained from table 4.14 indicates that less than half of the fishermen do not agree to the idea of using light to fish.

Some think the Government should allow light fishing and gave their reasons as; light fishing is a modern day practice to harvest fish.

Table 4.15 Acquisition of fishing gears

<table>
<thead>
<tr>
<th>Acquisition of fishing gears</th>
<th>Cape Coast</th>
<th>Percentage (%)</th>
<th>Elmina</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes 68</td>
<td>85</td>
<td>213</td>
<td>80.08</td>
<td></td>
</tr>
<tr>
<td>No 12</td>
<td>15</td>
<td>53</td>
<td>19.92</td>
<td></td>
</tr>
<tr>
<td>Total 80</td>
<td>100</td>
<td>266</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>
The fishermen were asked whether they have any challenge in the acquisition and usage of the right fishing gears.

Data from table 4.15 indicates that majority of the respondent happens to have problems in the acquisition of fishing gears.

Their reasons are that the availability of the gears and other fishing equipment to them is inadequate and the little available are highly priced.

Table 4.16 Supply of premix fuel.

<table>
<thead>
<tr>
<th>Premix fuel supply</th>
<th>Cape Coast</th>
<th>Percentage (%)</th>
<th>Elmina</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>72</td>
<td>90</td>
<td>143</td>
<td>53.76</td>
</tr>
<tr>
<td>No</td>
<td>8</td>
<td>10</td>
<td>123</td>
<td>46.24</td>
</tr>
<tr>
<td>Total</td>
<td>80</td>
<td>100</td>
<td>266</td>
<td>100</td>
</tr>
</tbody>
</table>

The fishermen were asked whether the supply of premix fuel was adequate.

The data obtained from table 4.16 indicates that majority of the fishermen think the supply of premix fuel is adequate.

The minority reveals that the supply of premix fuel is not adequate because of holding activities associated with the supply chain, also because of the presence of fleet of canoes coming in to base each now and then has contribute to ‘connection’ prices in the sale of the premix fuel.
For example 50 gallons of premix fuel on normal Government approve price sell at Gh\text{\textcelsius} 135 cedis but that of the ‘connection’ price goes for Gh\text{\textcelsius} 200 cedis for the same 50 gallons.

Fishermen who happen to buy at the connection prices stand the risk of soaring higher their operational cost as a result of this connection prices.

Table 4.17 Effect from foreign vessels and fishing boat

<table>
<thead>
<tr>
<th>Effect of foreign vessels and fishing boat</th>
<th>Cape Coast</th>
<th>Percentage (%)</th>
<th>Elmina</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>80</td>
<td>100</td>
<td>266</td>
<td>100</td>
</tr>
<tr>
<td>No</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>80</td>
<td>100</td>
<td>266</td>
<td>100</td>
</tr>
</tbody>
</table>

The fishermen were asked whether they are affected by the activities of foreign vessels and boats.

Analysis depicts that 100 percent of the respondents in table 4.17 voiced out the fact that, the activities of the foreign vessels and fishing boats are collapsing their business. Their propellers drag away their fishing gears as well as taking over the areas demarcated by law that the canoe fishermen should use, driving the fishermen out of business.
Figure 4.3 Operational challenges.

Analysis depicts that 100 percent of the fishermen representing the majority of the respondents’ voice out the fact that, they are facing problems in their operations. Some of these problems happen to be that, their areas of operations have been taken over by fishing trawlers and foreign fishing vessels. These foreign fishing vessels popularly known as “saeiko” is disturbing the peace and operations of these canoe fishermen worsening their vulnerability problems.
Figure 4.4 Impact of oil exploitation.

Figure 4.4 shows the impact of oil exploitation on areas of operations of Cape Coast and Elmina fishermen.

In analysis the fishermen in the Central region were not affected by any of the activities in oil exploration and exploitation in the area.

4.4 RESULTS FROM INTERVIEW

The outcome of an interview with the chief fishermen in Cape Coast and Elmina, and four local authorities being two representatives from MOFA and two representatives from the office of the Municipal Assembly in Cape Coast and Elmina are summarized here.

It revealed that Ghana’s fishing industry is facing some challenges some of which are yet to be addressed. It also revealed from the interview that, there exist the Ghana fishing Act which contains all the laws pertaining to the fishing industry, but it is sympathetic to say that most fishermen are not aware of the existence of this Fisheries Act.

A total of 6 people were interviewed. Below is the outcome;
Table 4.18 Results from interview to the question; in your own view do you think fishermen face challenges during fishing?

<table>
<thead>
<tr>
<th>Respondent</th>
<th>Frequency</th>
<th>Percentage %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>6</td>
<td>100</td>
</tr>
<tr>
<td>No</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Total</td>
<td>6</td>
<td>100</td>
</tr>
</tbody>
</table>

The entire 6 respondent went in for ‘Yes’. The data obtained from the respondents to this question represent a 100 percent answer to one side of the situation this clearly shows that the local authorities know the situations on the ground.

A follow up question reveals their reasons being pair trawling, cost of fishing gears, presence of illegal fishing by foreign vessels, presence of high tidal waves, no storage facility allocated to them to assist them in their work.

Table 4.19 shows result from interview to the question; what are some causes that have contributed to some of the challenges of the fishermen.

<table>
<thead>
<tr>
<th>Respondent</th>
<th>Frequency</th>
<th>Percentage %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inadequate patrol by Navy</td>
<td>1</td>
<td>16.67</td>
</tr>
<tr>
<td>Lack of communication among stakeholders</td>
<td>2</td>
<td>33.33</td>
</tr>
<tr>
<td>Foreign fishing trawlers and vessels</td>
<td>3</td>
<td>50</td>
</tr>
<tr>
<td>Total</td>
<td>6</td>
<td>100</td>
</tr>
</tbody>
</table>
Analysis of the data obtained from table 4.19 shows that, inadequate patrol by Navy is a root cause to some of the challenges facing the fishermen; again lack of communication among stakeholders is also a cause to the challenges facing the fishing industry.

The majority of the respondents, have identify the root cause to be the activities of foreign fishing trawlers and vessels in Ghana’s territorial waters.

Table 4.20 shows result from interview to the question; what are the best possible solutions to some of these challenges?

<table>
<thead>
<tr>
<th>Respondent</th>
<th>Frequency</th>
<th>Percentage %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education</td>
<td>2</td>
<td>33.33</td>
</tr>
<tr>
<td>Resource the Navy</td>
<td>1</td>
<td>16.67</td>
</tr>
<tr>
<td>Proper coordination among stakeholders in the industry</td>
<td>1</td>
<td>16.67</td>
</tr>
<tr>
<td>Government intervention</td>
<td>2</td>
<td>33.33</td>
</tr>
<tr>
<td>Total</td>
<td>6</td>
<td>100</td>
</tr>
</tbody>
</table>

Analysis from the result depict that respondents opted for education of the fishermen and the related stakeholders in the industry. Others suggested that the Government have a major role to play and that Government intervention is key to resolve the challenges facing the fishing industry and the fishermen.
Proper coordination among stakeholders in the industry is key to resolve issues and again if the Government adequately resource our Navy to patrol effectively would solve some of the problems in the fishing industry.
CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1 INTRODUCTION

This is the final chapter of this dissertation. In chapter 4, results analysis and discussions of the data was presented.

In this chapter conclusion and recommendations are presented based on the outcome of the findings of the study, so are the suggestions for further research.

5.2 SUMMARY OF FINDINGS

From the questionnaires administered, majority of the respondents confirmed that there were challenges facing the fishing industry. The respondents are of the view that the major problems in the fishing industry are prices of fishing equipment, dangers posed by foreign vessels to fishers, lack of storage facility and connection prices in the sale of premix fuel.

From the interview conducted with 6 top officials, they all confirmed that there are challenges facing the fishing industry. However responses from the interviewees differ on what these challenges are, 3 of the respondents, representing 50 percent said the major problems are the activities of foreign fishing trawlers and vessels operating in our territorial waters. 2 of the respondents, representing 33.33 percent also said there is lack of communication among stakeholders. The remaining 1, representing 16.67 attributes it to inadequate patrol by the Navy and stated this has led to overfishing in the country's territorial water by foreign fishing vessels.
5.3 CONCLUSIONS

From the information gathered from the literature review, interviews and questionnaires administered, it was concluded that the fishing industry in Ghana is faced with challenges among which are overfishing, prices of fishing equipment, dangers posed by foreign vessels to fishers, lack of storage facility and connection prices in the sale of premix fuel etc.

The Fisheries Commission have no genuine link with the fishermen in the Central Region, and that the responses from the fishermen is for the Fisheries Commission to visit them, have meetings with them to know of their problems and assist them.

These challenges could, however, be comprehensively addressed through a collaborative effort by all stakeholders in the fishing industry, also through education thus sensitization programmes of the Fisheries Act, Act 625 of 2002 which serves as a legal framework for the fishing industry.

5.4 RECOMMENDATIONS

In order to achieve the purpose for which this research was conducted to help and addressed the challenges facing the fishing industry. The researcher would like to make the following recommendations;

The fishermen must be sensitized on good fishing practices and the effects of bad fishing practices.

Also there is the need for awareness creation programmes, which should be directed to the stakeholders in the fishing industry and among the fishermen, the need to educate them about the existence of the fisheries Act, Act 625 to enable them to be abreast with the fisheries law
and report all illegal practices in the territorial waters of Ghana. Fishermen should be well informed and abreast with the modern trends in the fishing industry.

There is the need for an active, well organized and serious stakeholder’s coordination in the fishing industry.

Coordination among all the stakeholders in the industry will help the stakeholders to identify the challenges facing the fishing industry and adequately put in place measures to deal with such problems.

The Ministry of Food and Agriculture should organize periodic meetings among stakeholders to outline matters of interest in the fishing industry. There should also be storage facility built along the landing site, which will be accessed by the fishermen.

The government must also ensure proper implementation and enforcement of the fishing Act to help deal with some of the challenges facing the fishing industry. There must be more training of skilled personnel in the maritime industry to ensure effective implementation of the Fishing Act.

The Government must ensure that the Navy patrol teams are adequately resourced to frequently undertake patrol exercise to check all illegal activities in the territorial waters of Ghana.

The government should ensure proper safety standards in the distribution of pre-mix fuel and also at all the pre-mix fuel stations.
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    Marine Poll Vol. 3 No. 3.
Appendix 1

QUESTIONNAIRE

INTRODUCTION

I am a graduate student of the Regional Maritime University researching on the topic challenges facing Ghana’s fishing industry: case study of Cape Coast and Elmina fishermen.

The research is in partial fulfillment of part of the requirement for the award of Masters of Art (MA) degree in Port and Shipping Administration.

The objective of this questionnaire is purely for academic purposes. Your response will be used solely for the purpose of my academic work and will be treated with the utmost confidentiality.

Thank you for your cooperation.

Please answer or tick [ ] where appropriate.

SECTION A: BACKGROUND INFORMATION

1) Socio-economic identification of respondents.

Gender: Male [ ] Female [ ]

Age range: from 18-24 [ ] 25-29 [ ] 30-34 [ ] 35-39 [ ] 40-44 [ ] 45-49 [ ] 50-54 [ ] 55-59 [ ] 60-64 [ ]

Ethnicity: Akan [ ] Ewe [ ] other specify [ ]

Education level: Primary [ ] Secondary [ ] Tertiary [ ] None [ ]
Religion: Traditionalist ☐ Christian ☐ Muslim ☐ None ☐

SECTION B: KNOWLEDGE, ATTITUDE AND PRACTICE

2. How many years of experience in the fishing industry? ...........................................

3. What position do you hold on board the canoe? .......................................................

4. Have you ever fished in the deep sea? Yes ☐ No ☐

5. How are you paid? Weekly ☐ monthly ☐ whenever there is a catch ☐

6. What time do you commence fishing every day?

   Daybreak ☐ Afternoon ☐ Anytime ☐

7. How many hours do you work per day? .................................................................

8. Have you ever been involved in any accident on board? Yes ☐ No ☐

9. How would you describe your work?

   Safe work ☐ An occupation like any other ☐

   A hazardous occupation ☐

10. (a) Are your canoes licensed or registered to fish? Yes ☐ No ☐

    (b) If yes what was the fee charged? .................................................................

11. Are you aware of the existing Fisheries Act? Yes ☐ No ☐

12. Do you think fishermen use the right gears and equipment’s in fishing?

    Yes ☐ No ☐ others please specify.........................................................
13. Do you have access to cold store to store excess fish during good catch?

14. Should the Government allow light fishing?  Yes [ ]  No [ ]

SECTION C

15. a) Do you have any challenge in the acquisition and usage of the right fishing gears as stated in the fishing Act? Yes [ ] No [ ]

b) If yes what are these challenges

16. a) Is the supply of premix fuel adequate? Yes [ ] No [ ]

b) To what extent is the supply of premix fuel affecting your operations?

17. a) Are you affected by the activities of foreign vessels and boats?

b) What effect do foreign vessels and boat have on the operations of the fishermen?

18. Are you facing challenges in your operations? Yes [ ] No [ ]

a) If yes what are some of these challenges?

19. What would you suggest should be then to overcome the challenges in the fishing industry?
20. Are you affected by the impact of oil exploration in your areas of operation?

Yes [ ] No [ ]

21. Any further comment(s)...........................................................................................................
INTERVIEWS GUIDE

1. How do you perceive fishing?

2. What are some of the major challenges facing the fishermen?

3. What are the causes of these challenges?

4. What are the best possible solutions to some of these challenges?

5. How different are the problems in the fishing industry compared to other fishing communities you know.

6. If given the opportunity to suggest measures which would improve the operational conditions of fishermen, what would you suggest?