


**AN ASSESSMENT OF ACTIVITIES OF  
MULTINATIONAL OIL COMPANIES AND  
THEIR EFFECTS ON THE MARINE FISHERIES  
INDUSTRY IN GHANA SINCE 2007**



**BY  
ABU ISAAC MAHAMA  
(10505026)**

**THIS DISSERTATION IS SUBMITTED TO THE UNIVERSITY  
OF GHANA, LEGON, IN PARTIAL FULFILLMENT OF  
THE REQUIREMENTS FOR THE AWARD OF  
THE MASTER OF ARTS DEGREE IN  
INTERNATIONAL AFFAIRS**

**LEGON**

**JULY 2016**

## DECLARATION

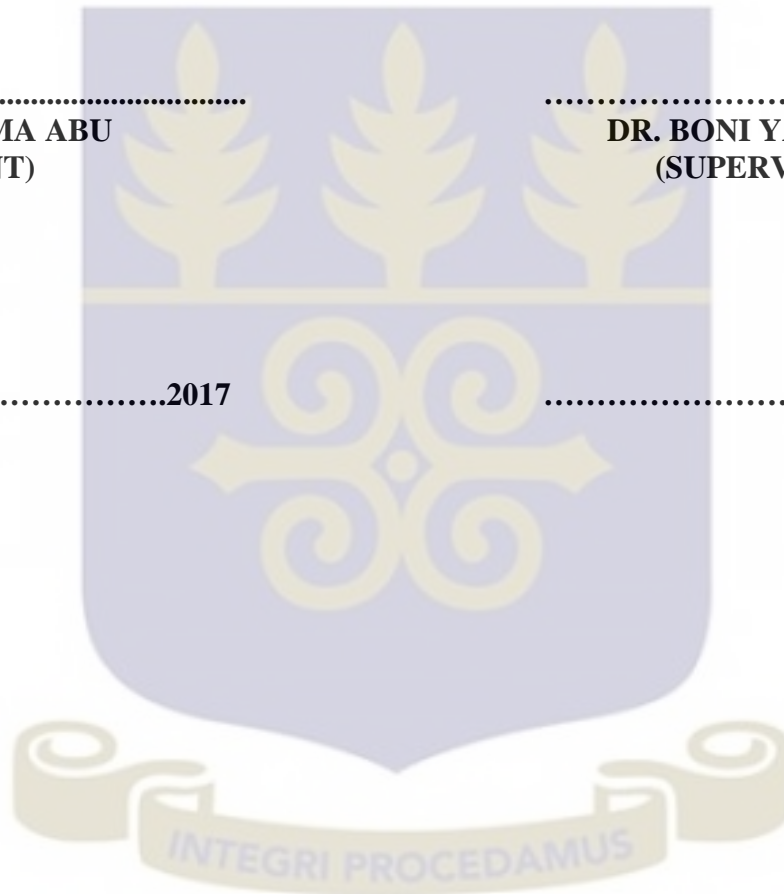
I hereby declare that this dissertation is the result of an original research conducted by me under the supervision of Dr. Boni Yao Gebe and that no part of it has been submitted anywhere else for any other purpose, and that all sources referred to have been duly acknowledged.

.....  
**ISAAC MAHAMA ABU**  
**(STUDENT)**

.....  
**DR. BONI YAO GEBE**  
**(SUPERVISOR)**

.....2017

.....2017



## DEDICATION

*I dedicate this work to my wife and children*



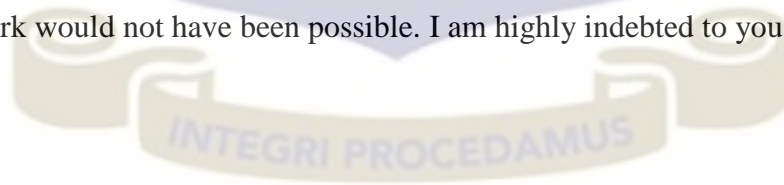
## ACKNOWLEDGEMENTS

I am most grateful to the Almighty God for giving me the strength and courage to accomplish this research work. In spite of all the challenges that came my way while conducting this research, the Almighty God has been merciful to me and I am extremely grateful to Him.

My sincere gratitude goes to my supervisor, Dr. Boni Yao Gebe, for his audience, guidance, advice and meticulous supervision. All your efforts and suggestions have shaped and given me in-depth knowledge into how natural resources can be managed sustainably.

My special gratitude goes to my wife, Michaelina Abu Gati for her encouragement, prayers and support throughout the study. I am also greatly indebted to Dr. Callistus Mahama, Mr. Obasa, Maj AK Awuni and all my friends who supported me in diverse ways throughout the study. May God richly reward and strengthen you all.

Finally, I want to say a big thank you to all the people I interviewed on the field without whose responses this work would not have been possible. I am highly indebted to you all.



## LIST OF ABBREVIATIONS AND ACRONYMS

ABFA	-	Annual Budget Funding Account
BOST	-	Bulk Oil Storage and Transport
CBFMC	-	Community-Based Fisheries Management Committee
CCRF	-	Code of conduct for Responsible Fisheries
DoF	-	Department of Fisheries
EC	-	Energy Commission
ECOWAS	-	Economic Community of West African States
EEZ	-	Exclusive Economic Zone
EPA	-	Environmental Protection Authority
E&P	-	Exploration and Production
EIA	-	Environmental Impact Assessment
EU	-	European Union
FAO	-	Food and Agriculture Organization
FADs	-	Fish and Aggregation Devices
FIA	-	Fisheries Impact Assessment
FSCBP	-	Fisheries Subsector Capacity Building Project
FPSO	-	Floating Production, Storage and Offloading
GDP	-	Gross Domestic Product
GNPC	-	Ghana National Petroleum Corporation
GIS	-	Geographic Information System
IEZ	-	Inshore Exclusive Zone
IFC	-	International Finance Corporation
IMF	-	International Monetary Fund
ISODEC	-	Integrated Social Development Centre



ITOPF	-	International Tanker Owners Pollution Federation Limited
IOC	-	International Oil Company
KITE	-	Kumasi Institute of Technology and Environment
LECIAD	-	Legon Centre for International Affairs and Diplomacy
MNC	-	Multinational Cooperation
MOEN	-	Ministry of Energy
MOFA	-	Ministry of Food and Agriculture
MOFEP	-	Ministry of Finance and Economic Planning
MCS	-	Monitoring, Control and Surveillance
NICFC	-	National Inland Canoe Fishermen's Council
NPA	-	National Petroleum Authority
PNDCL	-	Provisional National Defence Council Law
PCA	-	Petroleum Commission Act
PCB	-	Petroleum Commission Bill
PRMA	-	Petroleum Revenue Management Act
PRMB	-	Petroleum Revenue Management Bill
TOR	-	Tema Oil Refinery
UNDP	-	United Nation Development Programme
UNEP	-	United Nation Environmental Programme
WARFP	-	West Africa Regional Fisheries Programme

**TABLE OF CONTENTS**

<b>DECLARATION</b>	...	...	...	...	...	...	...	...	...	<b>i</b>
<b>DEDICATION</b>	...	...	...	...	...	...	...	...	...	<b>ii</b>
<b>ACKNOWLEDGEMENTS</b>	.....	...	...	...	...	...	...	...	...	<b>iii</b>
<b>LIST OF ABBREVIATIONS</b>	...	...	...	...	...	...	...	...	...	<b>iv</b>
<b>TABLE OF CONTENTS</b>	...	...	...	...	...	...	...	...	...	<b>vi</b>
<b>LIST OF TABLES</b>	...	...	...	...	...	...	...	...	...	<b>x</b>
<b>LIST OF FIGURES</b>	...	...	...	...	...	...	...	...	...	<b>xi</b>
<b>ABSTRACT</b>	...	...	...	...	...	...	...	...	...	<b>xii</b>
<b>CHAPTER ONE: INTRODUCTION</b>										
1.1	Background	...	...	...	...	...	...	...	...	1
1.2	Statement of the Research Problem	...	...	...	...	...	...	...	...	4
1.3	Research Questions	...	...	...	...	...	...	...	...	6
1.4	Research Objectives	...	...	...	...	...	...	...	...	6
1.5	Scope of the Research	...	...	...	...	...	...	...	...	7
1.6	Rationale of the Research	...	...	...	...	...	...	...	...	7
1.7	Hypothesis of the Study	...	...	...	...	...	...	...	...	8
1.8	Conceptual Definitions	...	...	...	...	...	...	...	...	8
1.9	Theoretical Framework	...	...	...	...	...	...	...	...	10
1.10	Literature Review	...	...	...	...	...	...	...	...	12
1.11	Sources of Data	...	...	...	...	...	...	...	...	17
1.12	Research Methodology	...	...	...	...	...	...	...	...	18
1.13	Limitations of the Study	...	...	...	...	...	...	...	...	18

1.14	Organisation of Chapters	...	...	...	...	...	...	...	19
	Endnotes	...	...	...	...	...	...	...	20

**CHAPTER TWO:  
AN OVERVIEW OF THE FISHING INDUSTRY IN GHANA**

2.0	Introduction	...	...	...	...	...	...	...	22
2.1	Historical Background of Fishing in Ghana	...	...	...	...	...	...	...	22
2.2	The Marine Fisheries Sector in Ghana	...	...	...	...	...	...	...	24
	2.2.1 <i>The Artisanal Sub-Sector</i>	...	...	...	...	...	...	...	25
	2.2.2 <i>The Semi-Industrial or Inshore Sub-sector</i>	...	...	...	...	...	...	...	26
	2.2.3 <i>The Industrial Sub-Sector</i>	...	...	...	...	...	...	...	28
2.3	Economic Importance of the Marine Fisheries Sector in Ghana	...	...	...	...	...	...	...	30
2.4	Fisheries Administration and Management in Ghana	...	...	...	...	...	...	...	33
	2.4.1 <i>Marine Fisheries Management Systems</i>	...	...	...	...	...	...	...	33
	2.4.2 <i>Legal and Regulatory Frameworks in the Fishing Industry</i>	...	...	...	...	...	...	...	34
2.5	Challenges in Managing the Fishing Industry in Ghana	...	...	...	...	...	...	...	36
2.6	Conclusion	...	...	...	...	...	...	...	38
	Endnotes	...	...	...	...	...	...	...	39

**CHAPTER THREE:  
OPERATIONS OF MULTINATIONAL OIL COMPANIES AND THEIR  
IMPLICATIONS ON THE MARINE FISHERIES SECTOR IN GHANA**

3.0	Introduction	...	...	...	...	...	...	...	41
3.1	Oil Exploration and Production in Ghana	...	...	...	...	...	...	...	41

3.2	Operations of Multinational Oil Companies in Ghana	...	...	...	...	...	...	...	45
	3.2.1 Seismic Operations	...	...	...	...	...	...	...	47
	3.2.2 Drilling Operations	...	...	...	...	...	...	...	48
	3.2.3 Development and Production	...	...	...	...	...	...	...	49
3.3	Effects of Oil Activities on the Marine Fisheries Sector	...	...	...	...	...	...	...	50
3.4	Ghana's oil find: The Concerns of the State and Non-State Actors	...	...	...	...	...	...	...	53
	3.4.1 The State and Ghana's Oil Find	...	...	...	...	...	...	...	57
	3.4.2 State Institutions and Ghana's Oil Find	...	...	...	...	...	...	...	58
	3.4.3 Multinational Oil Companies and Ghana's Oil Find	...	...	...	...	...	...	...	59
	3.4.4 The Traditional Chiefs and Ghana's Oil Find	...	...	...	...	...	...	...	60
	3.4.5 The Fishermen and Ghana's Oil Find	...	...	...	...	...	...	...	60
3.5	Oil and Gas Policy and Legal Framework in Ghana	...	...	...	...	...	...	...	61
	3.5.1 Petroleum Exploration and Production Law, PNDC Law 84	...	...	...	...	...	...	...	63
	3.5.2 Petroleum Revenue Management Act (PRMA) 2011 Act 815	...	...	...	...	...	...	...	63
	3.5.3 Petroleum Commission Act (PCA), 2011, Act 821	...	...	...	...	...	...	...	64
	3.5.4 Environmental Protection Agency (EPA) Act, 490 of 1994	...	...	...	...	...	...	...	64
	3.5.5 National Oil Spill Response System and Contingency Plan	...	...	...	...	...	...	...	65
	3.5.6 Local Content and Local Participation Policy	...	...	...	...	...	...	...	66
3.6	Conclusion	...	...	...	...	...	...	...	66
	Endnotes	...	...	...	...	...	...	...	68

**CHAPTER FOUR**  
**SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS**

4.0	Introduction	...	...	...	...	...	...	...	...	70
-----	--------------	-----	-----	-----	-----	-----	-----	-----	-----	----

4.1	Summary of Findings	...	...	...	...	...	...	...	70
4.2	Conclusions	...	...	...	...	...	...	...	72
4.3	Recommendations	...	...	...	...	...	...	...	74
	Bibliography	...	...	...	...	...	...	...	77
	Appendices	...	...	...	...	...	...	...	82



**LIST OF TABLES**

<b>Table 2.1:</b>	Shares of Operational Fishing Vessels in Ghana (% Share of fleet) ...	25
<b>Table 2.2:</b>	Semi-Industrial or Inshore Vessel Numbers... ..	26
<b>Table 2.3:</b>	Inshore fishery output by trawlers (tons) ... ..	27
<b>Table 2.4:</b>	Inshore fishery output by purse seine vessels (tons) ... ..	27
<b>Table 2.5:</b>	Total Tuna landing in Ghana since 1989 (in tons)... ..	29
<b>Table 3.1:</b>	Stakes of partners in a West Cape Three Points and Deepwater Tano Blocks ... ..	45
<b>Table 3.2:</b>	Update of Discoveries in Ghana ... ..	54
<b>Table 3.3:</b>	Projected Oil Annual Revenue from Jubilee Field (US\$ Millions) ...	56



### LIST OF FIGURES

<b>Figure 1.1:</b>	Map of Ghana Showing the Boundaries and the Coastline	...	...	3
<b>Figure 3.1:</b>	Deepwater Tano and West Cape Three Points Blocks	...	...	43
<b>Figure 3.2:</b>	Diagram of the Deepwater Tano and West Cape Three Points Blocks Showing the Jubilee Field and Other Related Developments	...	...	44
<b>Figure 3.3:</b>	A Vessel Engaged In Seismic Operations	...	...	48
<b>Figure 3.4:</b>	A Drill Rig	...	...	49



## ABSTRACT

Oil and gas resources have the potential to generate revenue for its host country. Ghana's oil find in commercial quantities marked the beginning of an oil industry in the country. Expectations from various stakeholders have been very high, especially the local communities. On the other hand many have cautioned that if proper management structures are not put in place, Ghana may be treading the path of other developing countries where oil discoveries have become a "curse" rather than a "blessing". The management of natural resources has been one of the biggest challenges for developing countries. Experts in the field of natural resources management have expressed divided opinions in connection with the linkage between natural resources abundance and economic growth. They further acknowledged that, how to translate the wealth of natural resources into a sustainable quality of life in a relatively safe environment is another issue. This research assessed the activities of multinational oil companies and what is being done to mitigate their effects on the marine fisheries industry. The study sought to explore the concerns of actors, what measures are in place to manage conflict between the oil companies and the local fishermen and the existing regulatory frameworks that control operations in the marine environment. The research focused on stakeholders in the fishing and oil industries, using primary and secondary data to analyse concerns raised by stakeholders and other literature relating to the research. The study observed that local fishermen and local chiefs of communities in the catchment area of the oil find are worried that the operations of multinational oil companies at sea are negatively affecting fishing activities. In this regard, the government is enacting some laws and policies which can safeguard the fisheries industry, if well implemented. Also, the capacity of the institutions that will implement these policies is being enhanced. Recommendations are also made to minimize any conflict that may arise between the fishermen and the oil companies – government should put in place regulatory measures to control the operations of the oil companies vis-a-vis the fishing industry. Comprehensive education programmes should be instituted to well inform the local communities on measures put in place to protect their livelihood.



## CHAPTER ONE

### INTRODUCTION

#### 1.1 Background

Fisheries and fisheries products make a crucial contribution to the world's wellbeing and prosperity. In the last five decades, world fish food supply has outpaced global population growth and today fish constitutes an important source of nutritious food and animal protein for much of the world's population.<sup>1</sup> In addition, the sector provides livelihoods and income, both directly and indirectly, for a significant segment of the world's population. The world's marine fisheries expanded continuously to a production peak of 86.4 million tons in 1996 but have since exhibited a general declining trend. Marine fish and fishery products are among the most traded food commodities worldwide, with trade volumes and values reaching new heights in 2011 with developing countries continuing to account for the bulk of world's exports.<sup>2</sup> There is however, a Global recorded reduction from 82.6 million tons in 2011 to 79.7 million tons in 2012. This accounted for about 3.5% reduction in marine catch globally. The situation is predicted to remain the same for subsequent years, unless prudent measures are put in place to control bad fishing practices across the globe.

In Africa, the marine fisheries sector plays a crucial role for coastal nations across the continent. The fisheries resources contribute significantly to food security, income generation and economic welfare of the continent.<sup>3</sup> In addition, marine fisheries support the livelihood of millions of citizens along the coastline of Africa. Precisely, West Africa is one of the most diverse and economically important fishing zones in the world. Total landings of fish in the West African marine region have risen from 600,000 metric tons in 1960 to 4.5 million metric tons in

the year 2000. Preliminary data for 2011 points to further growth, with a 15% increase.<sup>4</sup> This has made fisheries one of the most important sources of foreign exchange in the region. However, after 2011 there has been a global decline in marine fish catch.<sup>5</sup> In West Africa, data 2012 and 2013 have both shown a significant reduction in marine fish catch.<sup>6</sup> The World Bank is supporting West African governments in their efforts to better manage the region's rich natural resources through its West Africa Regional Fisheries Programme (WARFP). Since 2009, the WARFP has supported Ghana, Cape Verde, Guinea-Bissau, Liberia, Sierra Leone and Senegal in this regard.<sup>7</sup>

Ghana is a country on the West Coast of Africa with an estimated population of 24 million people, bounded to the West, North and East by Cote d'Ivoire, Burkina Faso, and Togo respectively and to the South by Gulf of Guinea. Figure 1.1 shows the Ghana map and its boundaries.<sup>8</sup> It covers a total area of 239,540 square kilometres and is endowed with natural resources such as gold, timber, diamonds, bauxite and manganese. Others are fish, rubber, limestone, petroleum, silver, and salt.<sup>9</sup> Fishing is a major economic activity along the coastline of Ghana. The fisheries sector accounts for an estimated 3% - 4.5% of Gross Domestic Product (GDP) and about 5% of Ghana's Agricultural Gross Domestic Product (AGDP).<sup>10</sup> An estimated 2 million people are employed in the fisheries sub-sector as fishermen, fish processors, fish sellers, firewood sellers, food sellers, transport owners, porters, canoe carvers, carpenters and engine mechanics.<sup>11</sup> Indeed marine fisheries is a source of livelihood for many Ghanaians especially those living along the coast.

**Figure 1.1:** Map of Ghana showing the boundaries and the coastline



**Source:** Google maps - Ghana 2015.

Just as the sea is home to marine fisheries species, it is also endowed with hydrocarbons which can be exploited for economic benefits. Many countries have bought into the view that the discovery of hydrocarbons is a panacea to a country's economic difficulties. This is in contrast with the assertion that oil is a "curse" rather than a "blessing". Ghana discovered oil in commercial quantities, off the West Cape Three Points, in 2007 and the views expressed by

majority of Ghanaians are that the country's economic woes are over. In view of this discovery, a number of Multinational Companies (MNC) have been engaged in various levels of operations in support of the oil discovery at the Jubilee Field. Some of these companies include; Tullow oil, Kosmos energy, Anadarko petroleum, E. O. Group, Sebre oil and Gas Ltd, Technip Services, Schlumberger Technical Services etc.<sup>12</sup>

The activities of these oil companies are mostly conducted upstream where traditional fishing based activities have played a dominant role in the local economy and society. As may be the case elsewhere, crude oil exploration and production in the Jubilee Field involves various stages that could be accompanied by intrinsic environmental challenges. Consequently, the marine fisheries industry stands to be directly affected by the activities of these oil companies. It is therefore imperative that measures are put in place so that these companies can coexist harmoniously and derive maximum benefits from the ocean and its seabed without recourse to conflict. Protection and maintenance of the marine fisheries industry, the fishermen and their communities should be a major priority for these oil companies. This research assessed the effects of oil and gas activities on the marine fisheries industry and what can be done to mitigate these effects.

## **1.2 Statement of the Research Problem**

The fishing industry in Ghana is based on resources from the marine, inland (freshwater) and aquaculture sectors. This research focuses on the effects that activities of Multinational oil companies will have on the marine fisheries sector of the country, which contributes significantly to national economic development objectives related to employment, livelihood support, poverty

reduction, food security, foreign exchange earnings and resources sustainability. Ghana discovered oil in commercial quantities in 2007 which was met with very high expectation and hopefulness by all and sundry.<sup>13</sup> Underpinning these jubilations and expectations is the fact that oil is a global commodity with huge potential for generating revenue for the host country.

In contrast, oil production upstream is dangerous to marine life in several ways. For example, oil spills resulting from oil operations can contaminate marine creatures and can cause low fertility and poor birth survival rates that have an adverse effect on the marine population in the polluted area. In addition, oil affects coral reefs which provide habitable grounds for marine creatures in a negative way. Oil can also clogs up the gills of fish within a contaminated area and suffocates them to death. For example, according to fishermen in the Western Region, there are already confrontations between the fishermen and oil companies.<sup>14</sup> Edlove Quarshie, a fisherman and representative of the Line and Hook Canoe Fishermen Association, recounted a deadly incident in July 2007, where an oil supply ship ran over a fishing canoe at night at sea.<sup>15</sup> As a result, four fishermen were killed on the spot and two others died later in the hospital.<sup>16</sup> According to him, even though, the Environmental Protection Agency (EPA) has indicated that scientifically, the drilling of oil is not causing any environmental problem to fishing activities in the region, fish catch has been on the decline. The concerns of the fishermen are that, with time there will be potential for competition for very small fishing grounds and loss of access to traditional fishing grounds, increase seafloor debris or obstructions from the oil industry that could damage fishing gear and cause loss of fishing catch and time, pollution and increased vessel traffic. According to ExxonMobil, activities of oil companies often take them to oceans where traditionally fishery based activities have played a dominant role in the local economy and society. In this regard it

has been recognized that to succeed, oil companies must coexist with the fishing industry and harmoniously share the ocean and its seabed.<sup>17</sup>

### **1.3 Research Questions**

Based on the Research Problem stated earlier, the study seeks to answer the following questions:

- How ready is the government of Ghana to address these challenges?
- Are there any commitments on the part of the multinational oil companies towards the protection and maintenance of the marine fisheries industry, the fishermen and their communities?
- What are the effects of exploration and production of oil on the fishing industry?
- What legal frameworks are in place to regulate the operations of the oil industry?

It is against this backdrop that, this research seeks to assess the activities of Multinational oil companies and their effects on the marine fisheries industry in Ghana.

### **1.4 Research Objectives**

The main objective of the study is to examine the effects of the activities of Multinational oil companies on the marine fisheries industry and how the expectations of state and non-state actors will influence the benefits to be derived from the oil find in Ghana. The research specifically seeks to achieve the following objectives:

- To examine the role the marine fisheries industry has played in the socio-economic development of Ghana.
- To identify the challenges facing the marine fisheries industry in Ghana

- To find out the extent, to which activities of multinational oil companies are affecting the marine fisheries industry as well as activities of fishermen in Ghana.
- To identify possible areas of cooperation through which the two industries can coexist peacefully and mutually benefit from the sea environment with minimal or without conflict.
- To make recommendations based on the findings.

### **1.5 Scope of the Research**

This research looked at the history of fishing as well as oil exploration in Ghana till date with particular focus on how the activities of Multinational oil companies are negatively impacting on the marine fisheries industry in Ghana. The roles of some actors in both industries have also been explored for the study. The policy and legal frameworks in both the fishing and oil industries are examined.

### **1.6 Rationale of the Research**

Oil could be a “curse” or a “blessing” depending on the host country. Countries like Nigeria and Norway could be cited as examples in this regard. Most natural resources endowed countries in Africa have rather followed the trend of oil being a “curse” rather than a “blessing”. Oil production upstream is dangerous to marine life in several ways. Oil spills resulting from oil operations can contaminate marine creatures and can cause low fertility and poor birth survival rates that have an adverse effect on the marine population in the polluted area. In addition, oil spills affects coral reefs which provide habitable grounds for marine creatures in a negative way.

Oil spillage can also clog up the gills of fish within a contaminated area and suffocates them to death.

In view of the foregoing, Ghana's oil find could be a "curse" or a "blessing" depending on the management policies that would be put in place to regulate the oil industry in Ghana. Fishermen in the Western region have indicated that the operations of the multinational companies involved in the oil exploration and exploitation are affecting their fishing activities at sea. It is for this reason that this research is relevant. The research highlighted the extent to which the marine fisheries industry is relevant to the socio-economic development of the country. It exposed how the operations of multinational oil companies are affecting the marine fisheries industry in Ghana. The findings from the research will help inform policy makers on measures to put in place to minimize or prevent conflict between the multinational oil companies and Ghanaian fishermen. Finally, it added to existing literature and raised relevant questions for further research in similar areas.

### **1.7 Hypothesis of the Study**

The study is guided by the hypothesis that, activities of multinational oil companies are negatively affecting the marine fisheries industry in Ghana.

### **1.8 Conceptual Definitions**

For the purpose of this study the following concepts have been operationally defined as follows:

**The Government:** This refers to the political organization comprising the individuals and institutions organized to formulate public policies and conduct the affairs of the state.

**State Agencies:** These are institutions that are established to carry out the mandate of the state in their respective fields of specialty. Some state agencies related to this research include the Ghana National Petroleum Corporation (GNPC), Ministry of Energy (MOEN), Ministry of Environmental, Science and Technology (MEST), Environmental Protection Agency (EPA), Energy Commission (EC), Ministry of Finance and Economic Planning (MOFEP), Ghana Maritime Authority and the Ghana Armed Forces.

**Multinational Corporations:** These are organizations that own or control production of goods or services in one or more countries other than their home country. They are also referred to as worldwide enterprises, international corporations, transnational corporations or stateless corporations.

**Operators:** These are primary participants engaged in the exploration and exploitation activities in the oil and gas industry and these are the multinational oil and service companies. The multinational oil companies engaged in the Jubilee Field exploitation which form part of the study are Tullow Oil, Kosmos Energy, E.O. Group, Anadarko Petroleum Corporation, and Sabre Oil and Gas.

**Traditional chiefs:** These include chiefs whose traditional areas cover towns and villages in the catchment area of the oil find. Some of these towns and villages include, Jomoro, Nzema East Municipal, Shama, Ellembelle, Ahanta West and Sekondi-Takoradi Metropolis.

**Local Fishermen:** These are fishermen who engage in fishing using mainly local fishing methods. These fishermen mostly originate from towns and villages along the coast of Ghana. Their fishing grounds extend to the oil find area.

## 1.9 Theoretical Framework

The research is underpinned by the theory of political pluralism. Pluralism as a political philosophy is the recognition and affirmation of diversity within a political body, which permits the peaceful coexistence of different interest, convictions and behaviours.<sup>18</sup> Pluralism is fundamental to political systems of democratic states, which allows for free competition of groups in exerting influence upon decision taken by the state.<sup>19</sup> Political pluralism is thus a constitutive feature of a democratic regime, and it is manifested in the freedom of association and expression of opinion. Pluralism thus tries to encourage members of society to accommodate their differences by avoiding absolutism and engaging in good faith dialogue. Pluralists also seek the construction or reform of social institutions in order to reflect and balance competing principles. While Pluralist acknowledge that the state plays a critical role in the international system, they argue that numerous actors can be key players, including international organizations like the UN, the IMF, the World Bank, the WTO, regional development banks, Multinational Corporations (MNCs) and transnational advocacy networks, which include a variety of individuals and groups cutting across international boundaries.<sup>20</sup> Pluralism has had a profound impact on the shape of all modern industrial societies. It has championed limited government and

scientific rationality, believing individuals and groups should be free from arbitrary state power. It has advocated political freedom, liberty, constitutionally guaranteed rights and equality before the law.<sup>21</sup>

According to pluralists, the international system should not be dominated by a single elite group but rather by a multiplicity of relatively small groups which are politically autonomous, or independent. They have the right and freedom to do business in the political marketplace. How well they fare depends not on the indulgence of a higher authority but on their own skill in rallying political resources. Though, they operate in a diverse society that has so many potential factions, political autonomy guarantees constant, widespread and spirited competition among these organizations. Trade would create relations of mutual dependence which would foster understanding between people and reduce conflict.<sup>22</sup> For pluralist, peace is the normal state of affairs. According to Edmund Burke, certain conditions, like conflict, may make good faith negotiations impossible. In this regard, he posited that institutional structures can best be modified or adjusted to prevent such situations.

From the political aspect, 'pluralism' has a huge affection on the process and decision-making in formulating policy. Political pluralism was however criticized by the corporatist as it did not seem to apply to Westminster system of democracies or the European context. The corporatist argued that a few selected interest groups (often formally) should be involved in the policy formulation process.<sup>23</sup> In this way they will take decision in the collective interest of the people. For example, the state constructs a framework in which it can address the political and economic issues with these organized and centralized groups.<sup>24</sup> They further argued that, in the

international system, during the policy making process, different parties may have a chance to take part in decision making. However, the one who has more power has the highest possibility to get what it wants.

Political pluralists conclude that, in the international system order is distorted by powerful multinational interests and dominant states, while in political pluralism emphasis is put on stability by a framework of pluralist rules and free market society.<sup>25</sup> Therefore, as a member of international, regional and sub-regional organisations, Ghana will have to enforce the regulatory frameworks that guide operations in the oil and gas industry so that their activities will not have adverse effects on the marine fisheries industry. This will ensure that the two industries coexist harmoniously and benefit from the marine environment without conflict.

### **1.10 Literature Review**

“Escaping the Resources Curse”, a book edited by Macartan Humphreys, Jeffrey D. Sachs and Joseph E. Stiglitz provided a practical guide on how various actors in oil and gas industry can address the resources curse. They observed that countries endowed with natural resources, particularly oil and gas, turn to ignore the relevance of other industries in socio-economic development of the country. In many cases this tendency has resulted in negative consequences such as lower growth rates, corruption and in some cases, destructive civil unrest.<sup>26</sup> According to the authors the impact of oil booms may cause human resources from other sectors to move into the oil sector which is bidding up wages. This may cause other sectors of the economy to shrink.

The authors enumerated asymmetric bargaining power, limited access to information, failure to engage in long-term planning, weak institutional framework and lack of accountability and transparency as some of the challenges confronting resource endowed countries. They recommended that revenue allocations, negotiations, public accountability and strategies to hold the oil companies accountable to the environmental and the general society to be key in contractual agreements with international oil companies.<sup>27</sup> Ghana's oil and gas industry is still grappling with the problems of institutional capacities and appropriate legal frameworks to govern the industry as espoused by the above book. There is therefore the need for Ghana to expedite action on all outstanding petroleum bills in the country.

Kimball, touching on the legal aspect of marine conservation in his book, "The Legal Framework of Biodiversity Conservation" conducted a comprehensive analysis of the Law of the Sea and other legal issues relating to marine pollution and conservation.<sup>28</sup> He also listed important international and regional conservations that seek to protect the marine environment. According to him, application of international and regional conventions alone will not lead to the effective protection of the marine environment. Most problems lie at the national and local community levels where there are conflicting uses of coastal areas.

He emphasizes the need for a better understanding of the importance of preserving the marine environment by local citizens, managers, planners, economists, policy makers and operators whose activities impact negatively on the environment. Enforcement of strong protective legislation is also very critical. Kimball could be said to be among the school of thought who share the view that international preventive measure against marine pollution have not been

effective globally. The situation in Niger Delta region of Nigeria is a typical example. A national legal framework to manage pollutants that will impact negatively on the environment, especially pollutants from the operations of oil and gas companies, should be the priority of any country endowed with natural resources.

“The Paradox of Plenty: Oil Booms and Petro States”, a book authored by Terry Lyn Karl presented compelling reasons behind the dilemma of petro-states. The frequently discussed question of why oil-rich countries end up being worse than the resource poor countries was addressed through studies of countries including Venezuela, Angola, Nigeria and Norway. According to Karl, mineral revenue affects the framework for decision making not only at the level of policy environments but also the autonomy of goal formation, the types of public institutions adopted and prospects for building other extractive capabilities.<sup>29</sup> She also elaborates on how oil money depletes states capabilities while emphasizing the fact that the character of state institutions influences developmental outcomes.<sup>30</sup>

The quality of state institutions is also indicative of the level of democracy of a country, thus more democratic countries tend to have better institutions, less corruption and therefore less likely to be cursed by oil.<sup>31</sup> The author concluded that oil revenues can be destructive for state institutions and for the relations between rulers and subjects, if the country involved is without the necessary structures prior to the oil find. The relevance of the above issues raised to contemporary times cannot be ignored. A careful look at the trend of development of new entrants in the oil industry such as Angola, Cote d’Ivoire, Sierra Leone and Azerbaijan reveals the existence of these problems. Ghana could be a victim if pragmatic measures are not taken

immediately to harmonize operations in the oil and gas industry vis-a-vis the marine fisheries industry.

“Ghana’s Emerging Petroleum Industry: What Stakeholders need to know”; authored by Ishmael Edjekumhene, Prince Owusu Agyemang, and Paula Edze all of the Kumasi Institute of Technology and Environment provide information on the emerging oil and gas industry in Ghana. The authors indicated how the industry is expected to impact on the general well-being of the citizenry and the overall Ghanaian economy.<sup>32</sup> Using a simple question and answer style, they gave explanations to matters regarding the emerging oil industry. These include the quantity of oil to be produced in the Jubilee Field, The revenue expected and the impact of the industry on the citizenry as well as the environment.

They also identified the stakeholders involved in the governance of the sector, their roles and how government’s share of oil revenue is determined. This information according to the authors, among other things will help address the concerns of stakeholder. This is because unfulfilled expectation from the view point of the citizenry has been a major cause of social unrest and conflict in resource rich countries. Ghana must learn from the experiences of other oil-rich countries that have become victims in this regard.

Emeka Duruigbo, in his article entitled “The world Bank, multinational Corporations and the Resources Curse in Africa”, stated that oil and gas has not inured to the benefit of many oil producing countries, contrary to the case of Norway.<sup>33</sup> He intimated that the phenomenon of the resource curse is particularly acute in Africa. He stated that upstream oil and gas activities

impact negatively on the marine fisheries industry. Citing Anthony Goldman, he noted that, ‘from earlier developers like Nigeria to the newest entrants such as Equatorial Guinea, petroleum production has generated controversy and uneasiness.’<sup>34</sup>

Economists and Political scientists have identified economic, social and political factors as the primary causes of the resources curse phenomenon. The author also scrutinized two of the proposed panaceas to the resource curse namely national oil trusts and information disclosure. Having identified among others sovereignty as a major obstacle to the above cure, he concluded by advocating that there should be an institution of local trust funds to complement national trust funds. The author also gave an in-depth analysis of the causes of the resource curse phenomenon and highlighted the need for an arrangement that will help address the problem in both old and new producers such as Ghana.

In his article “Conflict in the Niger Delta: A Unique Case or Model for future Conflicts in other Oil-Producing Countries”, Thomas Imobighe sought to analyse the conflict situation in the Niger Delta region of Nigeria, its various consequences and whether it represents a template of what to expect in other oil-producing communities. He defined conflict as a condition of disharmony or hostility within a social formation, due to the clash of interest between parties involved in the relationship.<sup>35</sup> He identified three principal parties in a relationship by virtue of the oil related activities in the Niger Delta region; these are the Nigerian state, multinational oil companies, and the local communities of the Niger Delta region.

The lack of equity in the distribution of the benefits of the oil and gas wealth resulted in environmental degradation, corruption, instability, and depression.<sup>36</sup> This has created disharmony in the relationship between the three principal actors resulting in a complex multi-level conflict which is manifested at different levels of the relationship; confrontation between the local communities and the multinational oil companies, confrontation between local communities and the state, and lastly hostilities between some local communities themselves.<sup>37</sup> He argued that the phenomenon of oil induced conflict varies to some extent, depending on the history, nature of the economy and socio-political culture of the country concerned. Similarly, the principal actors in Ghana's emerging oil and gas industry are the state, multinational oil companies, traditional chiefs and the local fishermen. Consequently, avoiding the cause of conflict resulting from disharmony amongst these actors as indicated by Imobighe becomes very relevant.

### **1.11 Sources of Data**

The sources of data for this study are primary and secondary sources. Primary data was obtained from public officials, international oil companies, local chiefs and local fishermen. The respondents were from the Western Region, the region bordering the Jubilee Fields and the Greater Accra Region, the seat of government where most of its agencies and institutions are located. Secondary data is obtained from books, magazines and articles from academic journals, policy documents, publications, paper presentations, conference papers, local and international

tabloids, television and radio interviews and discussions. The study also utilized data from internet sources.

## **1.12 Research Methodology**

The research used qualitative data analysis which is primarily an exploratory research used to gain an understanding of underlying reasons, opinions and motivations that help to develop ideas of hypotheses for potential quantitative research.<sup>38</sup> In this research, mainly qualitative data of primary and secondary origin are used. A face-to-face interview was conducted with thirty respondents. The interviews are semi-structured and varied to elicit the required information from the various categories of respondents. All interviews conducted are one to one, notes are taken and interactions recorded with the consent of the respondents. The study also reviewed existing data and literature on the topic and assessed the various dimensions in which researchers in the field have examined the subject matter.

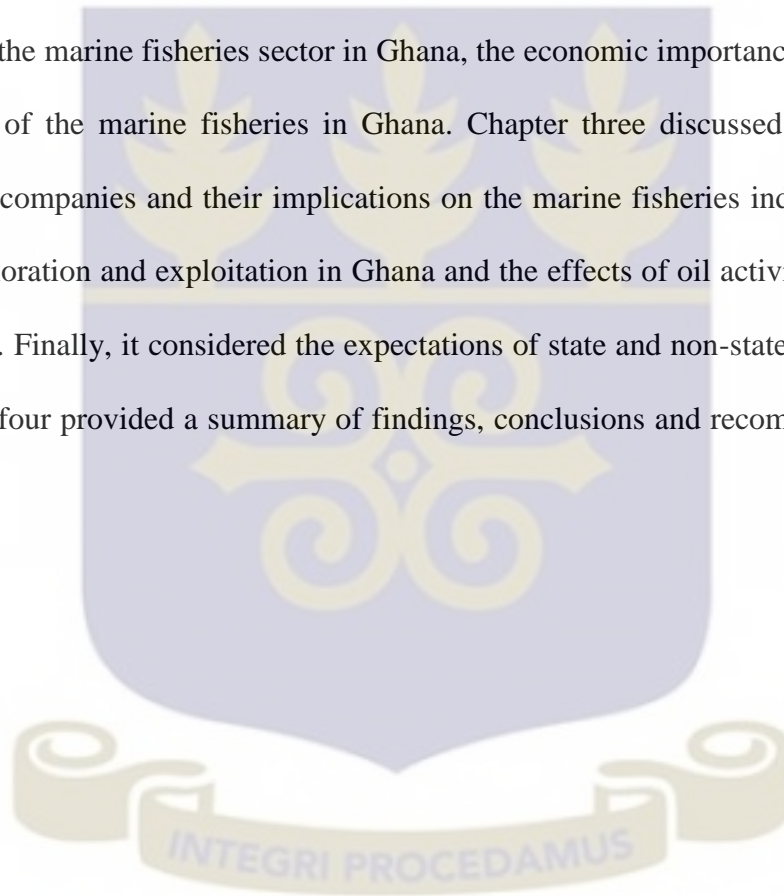
## **1.13 Limitations of the Study**

The global and political nature of oil hinders easy access to information, particularly from multinational companies operating in the oil and gas industry, and some government agencies and institutions. The constraints of time and finance in this venture cannot be over emphasized.

These notwithstanding, the effect of this problem did not affect the research so much as to render it unreliable or not representative since the objective of the research are achieved.

### **1.14 Organization of Chapters**

The dissertation is organized into four chapters. Chapter one constitutes the introduction which deals with the research design. Chapter two is an overview of the fishing industry in Ghana. It further looked at the marine fisheries sector in Ghana, the economic importance of the sector and the management of the marine fisheries in Ghana. Chapter three discussed the operations of multinational oil companies and their implications on the marine fisheries industry in Ghana. It looked at oil exploration and exploitation in Ghana and the effects of oil activities on the marine fisheries industry. Finally, it considered the expectations of state and non-state actors in Ghana's oil find. Chapter four provided a summary of findings, conclusions and recommendations of the research.



## Endnotes

---

- <sup>1</sup> FAO, World Review Fisheries and Aquaculture, 2012.
- <sup>2</sup>Ibid.
- <sup>3</sup> FAO 2001 International plan of action to prevent, deter and eliminate illegal, unregulated and unreported (IUU) fishing. FAO, Rome, 2001.
- <sup>4</sup> FAO 2012, op. cit.
- <sup>5</sup> FAO, World Review Fisheries and Aquaculture Preliminary Report, 2013.
- <sup>6</sup>Ibid.
- <sup>7</sup>Hiddink, J.G., Johnson, A.F., Kingham, R. and Hinz, H. 2011. Could our fisheries be more productive? Indirect negative effects of bottom trawl fisheries on fish condition *Journal of Applied Ecology*, 48(6): 1441–1449.
- <sup>8</sup><http://www.nationsencyclopedia.com/economies/Africa/Ghana.html>. Accessed on 12 July 2014.
- <sup>9</sup> <http://www.ghanaweb.com>, accessed on 30 July, 2014.
- <sup>10</sup> Ghana shared growth and development agenda (GSGDA), 2010-2013.
- <sup>11</sup>Ibid., p. 7.
- <sup>12</sup> Information received from GNPC, 2013.
- <sup>13</sup> Oil and Gas Journal. 2009. Tullow makes oil discovery off Ghana. [www.ogj.com](http://www.ogj.com). Accessed on 25 August 2014.
- <sup>14</sup><http://www.publicintegrity.org/2011/06/10/4859/fishing-and-offshore-oil-industry-delicate-imbalance>. Accessed on 24 December, 2014.
- <sup>15</sup>Badgley, Christiane (2011). Fishing and the offshore oil industry: a delicate imbalance. Available on line: <http://www.iwatchnews.org/2011/06/10/4859/fishing-and-offshore-oil-industry-delicate-imbalance/>. Accessed on 23 July, 2014.
- <sup>16</sup> Ibid.
- <sup>17</sup> Exxon Mobil Assessment Report: Coexisting with the fishing industry.
- <sup>18</sup> <http://science.jrank.org/pages/10751/Pluralism-Political-Pluralism.html>.
- <sup>19</sup>Lipset, S. M. (ed.), *The Encyclopaedia of Democracy*, Washington 1995.
- <sup>20</sup>Polsby, Nelson W (1960). How to study Community Power. The Pluralist alternative. *The Journal of Policies*, (22) 3, 474-484.
- <sup>21</sup>Connolly, William E., *The Ethos of pluralisation*. (Minneapolis: University of Minnesota Press, 1995).
- <sup>22</sup>Paes, W., 'Oil Production and National Security in Sub-Saharan Africa' in R. Traub-Merz and D. Yates (eds) *Oil Policy in the Gulf of Guinea; Security and Conflict, Economic Growth Social Development*. (Germany: Friedrich-Stiftung, 2004)
- <sup>23</sup>Polsby, Nelson W. op. cit. p. 490.
- <sup>24</sup> Ibid. p .499.
- <sup>25</sup>Connolly, William E., op. cit.
- <sup>26</sup>Humphreys, M. J., Sachs, D., and J.E. Stiglitz (eds), *Escaping The Resource Curse*. (New York: Colombia University Press, 2007), pp. 1-25.
- <sup>27</sup>Ibid., pp. 1-20.
- <sup>28</sup> Kimball, D., *The United Nations convention on the Law of the Sea: A Framework for Marine Conservation* (Zurich: Global Aspects Press, 1994), p. 15.
- <sup>29</sup>Karl, Terry Lynn., *The Paradox of Plenty: oil Booms and Petro States*. (Berkeley: University of California Press 1997).
- <sup>30</sup>Ibid., p. 242.
- <sup>31</sup>Cabrales, A. Esther, H., (2010). The quality of political institutions and the curse of natural resources. *The Economic Journal*. Pp. 121, 58-88.
- <sup>32</sup>Edjekumhene, I., Agyeman, P. O. and Edze, P., *Ghana's Emerging Petroleum Industry: What Stakeholders Need To Know*. (Accra: Combat Impressions, 2010).

---

<sup>33</sup>Duruigbo, Emeka, 'The World Bank, Multinational Oil Corporations and the Resource Curse in Africa', *Journal of International Economic Law*, Vol 26, No. 1, 2005, p. 65.

<sup>34</sup>Ibid., p. 2.

<sup>35</sup>Imobighe, T. A. (2004) 'Conflict in the Niger Delta: A Unique Case or 'Model' for Future Conflicts in Other Oil-Producing Countries?' in R. Traub-Merz and D. Yates (eds) *Oil Policy in the Gulf of Guinea; Security and Conflict, Economic Growth, Social Development*, pp 101-115. Germany: Friedrich- Ebert-Stiftung.

<sup>36</sup>Imobighe, T. A., op, cit., p. 24.

<sup>37</sup> Ibid., pp. 56-58.

<sup>38</sup> Thomas W. Lee. *Using Qualitative Methods in Organizational Research*. (London New Delhi: SAGE Publications, International Educational and Professional Publishers, Thousand Oaks).



## CHAPTER TWO

# AN OVERVIEW OF THE FISHING INDUSTRY IN GHANA

### 2.0 Introduction

This chapter assessed the fishing industry in Ghana in the light of its importance to the people of Ghana in general and the communities along the coast of Ghana in particular. It first looked at the historical background of fishing in Ghana, the marine fisheries sector in Ghana and the economic importance of the marine fisheries sector in Ghana. Thereafter it considered fisheries administration and management in Ghana.

### 2.1 Historical Background of Fishing in Ghana

The fishing industry in Ghana started as an artisanal fishing using very simple, inefficiency gear and methods in lagoons, lakes, rivers, estuaries and marine waters very close to shore. Notwithstanding, the simplicity of their gears and methods of fishing, the Ghanaian artisanal fishermen, were very industrious and adventurous, venturing as far as Liberian and Nigerian waters as early as the 1800s and early 1900s.<sup>1</sup> Fishing was however mostly for subsistence purpose. Ghanaian fishermen used very crude and inefficient harvest technology, mainly involving the use of traditional hand dugout canoes. However, the industry has evolved with time into a multi fleet industry with a blend of both traditional and modern technology.<sup>2</sup> There are 310 beach landing sites and 198 coastal fishing villages, as well as major ports where fish is also landed.<sup>3</sup> Ghana, like most other developing countries, operates the open access nature of fishing.<sup>4</sup> The fishermen need just to inform the chief fisherman in charge of that community or area for access. The commercial fishing sector did not emerge until later in the 1900s. The 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.<sup>5</sup>

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 loans.<sup>6</sup> The SFC also imported a large number of fishing trawlers whose fishing activities occurred outside the continental shelf of Ghana. They engaged in 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 USA<sup>7</sup>, paving the way for Ghanaian fishing companies to venture into and develop the tuna fishery. Tuna fishing really took off during the 1970s, when it was expanded to offshore waters.<sup>7</sup>

Unfortunately, majority of the investments in the fishing industry were not properly managed. This led to the collapse of many of the fishing companies, including the SFC during the 1980s, and huge sums of money were lost plunging the industry into financial difficulties.<sup>8</sup> In addition to the financial difficulties, were the lack of national human resources, lack of supporting infrastructure and the political instability of the late 1970s and early 1980s. This prevented the industry from recovering. The fishing industry in Ghana is based on resources from the marine and to a lesser extent, inland sector. Fishing activities in the marine sector range from artisanal to

industrial, exploiting both pelagic and demersal fish resources up to the Exclusive Economic Zone (EEZ), which is 200 nautical miles from shore.

## **2.2 The Marine Fisheries Sector in Ghana**

Ghana has a coastline, measuring about 320 nautical miles (539km) long, comprising long stretches of sandy beaches interspersed with rocky shores, estuaries and lagoons. These lagoons, estuaries and the many wetlands dotting the coastline form breeding grounds for many marine fish species. Generally, marine resources cover over 300 different types of fish species of commercial importance, 17 species of cephalopods, 25 species of crustaceans and 3 turtle species in Ghana.<sup>9</sup> Most domestic marine fish supply is from artisanal fishery and the most important marine resources are small pelagic especially the round sardinella, flat sardinella, anchovy and chub mackerel.<sup>10</sup> These species account for about 70% of total marine fish landed.<sup>11</sup> Marine fish production in Ghana's coastal waters is driven by the oceanography of the western Gulf of Guinea, a seasonal coast upwelling.<sup>12</sup> Marine fishing is an important traditional economic activity of the coastal communities in Ghana and contributes over 80% of the total fish catch. The marine fishing industry in Ghana consists of three main sectors, namely; artisanal or small scale, semi-industrial or inshore and industrial sectors. Shares of operational fishing vessels in Ghana operated across the three main sectors in the marine fisheries industry is shown in table 2.1.

**Table 2.1:** Shares of Operational Fishing Vessels in Ghana (% Share of fleet) From 2000 - 2009.

Vessel Type	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Inshore	1.88	1.74	1.49	2.26	2.19	2.08	2.20	2.00	2.08	1.96
Industrial	0.52	0.44	0.46	0.46	0.48	0.42	0.57	0.53	0.50	0.53
Shrimpers	0.03	0.03	0.02	0.02	0.02	0.02	0.02	0.00	0.00	0.00
Tuna Vessels	0.38	0.32	0.35	0.36	0.32	0.23	0.28	0.29	0.29	0.29
Tuna Carriers	0.03	0.04	0.05	0.00	0.02	0.02	0.02	0.02	0.02	0.02
Canoes	97.15	97.43	97.63	96.90	96.97	97.24	96.92	97.16	97.12	97.20
Motorised Canoes	57.98	51.31	51.41	51.03	55.36	55.52	55.33	55.47	55.44	55.49

**Source:** Fisheries Commission of Ghana.

### 2.2.1 The Artisanal Sub-Sector

This is a type of fishery system with an open beach using very basic fishing methods such as the use of dug-out canoes often powered with outboard motors.<sup>13</sup> The use of canoes can be found in almost all the 300 landing sites in 200 fishing villages along the Ghanaian coastline. In the latest canoe frame survey conducted in 2001, the number of marine artisanal fishermen was listed at over 123,000 with about 11,219 traditional canoes.<sup>14</sup> It is generally considered small scale fishing because it is dependent solely on local resources. The artisanal sub-sector employs a wide range of fishing gear which includes purse seines (poli/watsa), beach seines, Draft Gill Nets (DGN), and surface set nets. Artisanal fishermen also use various forms of bottom set-nets, hook and line also known as “legas”. The ‘legas’ and the DGN fleet operate beyond the 50 metre depth zone. The legas are however well equipped with ice, food and fishing aids like fish finders and Geographical Positioning System (GPS). The artisanal sub-sector produces about 70% to

80% of the total annual volume of marine fish catch comprising mainly of small pelagic fish species and to a much lesser extent some valuable demersal fish species.<sup>15</sup>

### 2.2.2 The Semi-Industrial or Inshore Sub-sector

The operators in this sub-sector use locally built wooden vessels measuring 9 to 12 metres in length. They are fitted with 30 to 90hp diesel engines. Table 2.2 shows the number of semi-industrial or inshore vessels operating in Ghana from 2000 to 2009. They fish during the upwelling seasons using purse seines mainly in the inshore waters between 30 and 50 metres depth where they compete with the canoe fleet. They operate from seven coastal landing centres, namely: Tema, Apam, Mumford, Elmina, Sekondi, Takoradi and Axim and produce about 2% of the total marine catch. The fish harvested is demersal species made up of sole, shrimp, cassava fish, cuttlefish and burrito caught in trawls. Table 2.3 shows inshore fishery output by trawlers from 2000 to 2010. They also harvest small pelagic species, caught in purse seines during the upwelling seasons. Some commercially important fish species in Ghanaian waters include round sardinella, flat sardinella, skipjack, yellow fin, bumper and chub mackerel, sparidae (red fishes) and pomadasidae (burros). Table 2.4 shows inshore fishery output by purse seine vessels from 2000 to 2010.

**Table 2.2:** Semi-Industrial or Inshore Vessel Numbers

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
<b>Inshore vessels</b>	236	244	231	283	316	293	267	259	267	268
<b>Operational vessels</b>	167	178	152	233	253	240	255	231	240	223

**Source:** Fisheries Commission of Ghana

**Table 2.3:** Inshore fishery output by trawlers (tons)

TRAWLERS	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
<b>SEA BREAMS</b>	27.47	266.29	70.8	34.48	7.162	5.89	1.5	0.148	0.1	0.49	0
<b>CASSAVA FISH</b>	255.03	425.76	524.48	234.43	182.18	138.6	295.09	225.03	206.9	273.46	317.03
<b>BURRITO</b>	0	632.08	679.38	354.76	196.32	274.08	446.61	326.741	169.05	245.09	264.98
<b>TRIGGER FISH</b>	0	2.23	3.02	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.n.a.	n.a.	
<b>RED MULLET</b>	450.35	56.89	40.21	4.98	0.18	0.04	0	0	n.a.n.a.	n.a.	
<b>FLYING GURNARD</b>	0.12	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.n.a.	n.a.	
<b>CUTTLEFISH</b>	63.15			72.23	20.34	19.79	29.22	1.124	0.35	8.411	1.852
<b>OTHERS</b>	655.42	3828.39	1492.36	726	437.51	434.58	722.54	667.88	519.08	682.99	710
<b>SUB-TOTAL</b>	1451.54	2393.78	2810.25	1426.85	843.69	872.985	1494.96	1220.923	895.48	1204.402	1293.86
<b>TOTAL INSHORE</b>	<b>8668.067605.547784.5513318.696331.357591.2829877.1710008.6876140.2512047.7429823.305</b>										

Source: Fisheries Commission of Ghana

**Table 2.4:** Inshore fishery output by purse seine vessels (tons)

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
<b>Round Sardinella</b>	3177.99	3208.81	3449.14	8323.44	3585.03	2599.616	4326.38	4712.45	2888.73	7262.2	5792.79
<b>Flat Sardinella</b>	34.97	529.79	80.91	158.34	49.33	77.687	2644.04	2320.054	128.21	273.79	565.96
<b>Chub Mackerel</b>	3630.21	971.81	891.06	1999.56	1307.71	2023.968	1335.01	1176.626	1265.65	2088.49	1177.49
<b>Scad Mackerel</b>	5.14	119.46	149.93	14.49	13.43	29.236	71.29	190.259	62.34	71.01	59.51
<b>Others</b>	368.21	381.89	403.26	1396.01	532.16	1987.79	5.49	388.38	899.84	1147.85	933.7

<b>Sub-total</b>	<b>7216.525211.764974.311891.845487.666718.2978382.218787.7645244.7710843.34 8529.445</b>
------------------	---

**Source:** Fisheries Commission of Ghana

### **2.2.3 The Industrial Sub-Sector**

The industrial sector comprises large, steel-hulled foreign-built trawlers, pair trawlers, shrimpers, tuna pole-and-line vessels (bait boats) and purse-seiners with 30 to 200hp diesel engines. In Ghana all tuna vessels are operated on joint-venture basis with Ghanaian owing at least 25% of the shares as decreed in the Fisheries Law PNDC Law 256 of 1991. The vessels are over 30.5metres long with engines of 400 hp or more. The main species caught are skipjack, yellow-fin and big eye. About 67% of the landed tuna is processed into loins or canned and exported, the rest is sold at the local market. Table 2.5 below shows details of tuna landing from 1989 to 2010. They operate only from Tema and Takoradi where there are suitable berthing facilities and are restricted to 50 to 75 metres depth of water. The first industrial trawlers were acquired about four decades ago principally for fishing in more productive distant waters, mainly off Angola and Mauritania. Beginning from the 1970s these vessels started in home waters when countries claimed 200 miles of exclusive economic zone in accordance with relevant provisions of the Third United Nations Convention on the Law of the Sea, UNCLOS III. This sub-sector accounts for about 6% of the volume of marine catch.

**Table 2.5:** Total Tuna landing in Ghana since 1989 (in tons)

	YELLOWFIN	BIGEYE	SKIPJACK	OTHERS	TOTAL TUNA CATCH	TUNA EXPORTED	National Tuna Price GHC/TONNES	TUNA VESSELS**	OPERATIONAL VESSELS
<b>1989</b>	28883.3	16.4	23154.2	6025.1	32294.1	21543	25.57	n.a.	n.a.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
<b>1990</b>	7710.1	98	29498.6	3496	40802.9	28253.4	232.10	n.a.	n.a.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
<b>1991</b>	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
<b>1992</b>	6628.4	138.3	28249.6	2778.3	37794.3	24938.9	290.00	n.a.	n.a.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
<b>1993</b>	6253.8	95.8	21336.3	3089.6	30775.6	17717.4	340.00	n.a.	n.a.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
<b>1994</b>	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
<b>1995</b>	10646.8	n.a.	22639.3	3569.5	36855.6	21145.3	450.00	n.a.	n.a.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
<b>1996</b>	7394.1	291.4	23863.3	5424.5	36973.3	26928.3	711.00	n.a.	n.a.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
<b>1997</b>	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
<b>1998</b>	7119	4	22923	3859	33905	23156.9	1,037.00	n.a.	n.a.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
<b>1999</b>	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	12242.4	615.1	24284.7	112.5	37254.7	30681.9	1,200.00	45	36
<b>2000</b>	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
<b>2001</b>	23249.6	27.5	24177.1	6170.6	53624.8	42722.2	1,675.71	43	36
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
<b>2002</b>	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	19290.48	3920.54	41997.42	359.16	65567.6	52454.08	2,195.18	37	35
<b>2003</b>	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
<b>2004</b>	28282.18	3680.11	51283.84	306	83552.13	64752.9	2,919.59	40	39
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
<b>2005</b>	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	15910	1651	34986	708	53255	34101.5	3,380.00	37	34
<b>2006</b>	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
<b>2007</b>	29303.3	2357.23	56417.15	728.81	88806.49	67563.44	4,507.73	40	33
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
<b>2008</b>	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	20310.6	2033.9	38934.4	4767.2	66046.1	51744.47	8,050.00	41	36

<b>2009</b>	.....	.....	.....	.....	.....	.....	.....	.....	.....
<b>2010</b>	19030.39	4815.81	32766.14	8540.41	65152.72	51865.33	9,000.00	41	37
	.....	.....	.....	.....	.....	.....	.....	.....	.....
	15137.72	6943.56	33600.2	7060.45	62741.93	55343.3	15,000.00	41	37
	.....	.....	.....	.....	.....	.....	.....	.....	.....
	19833.1	2333.2	54322.05	5737.5	82225.85	59892.16	16,950.00	40	26
	.....	.....	.....	.....	.....	.....	.....	.....	.....
	14548.06	1590.29	42788.85	4325.24	63252.44	43340.72	1,850.00	43	32
	.....	.....	.....	.....	.....	.....	.....	.....	.....
	15107.14	5748.15	46415.35	5084.37	72355.01	54989.81	2,500.00	40	34
	.....	.....	.....	.....	.....	.....	.....	.....	.....
	14250	9269.2	37387.2	3187.5	64093.9	48070.43	3,200.00	41	33
	.....	.....	.....	.....	.....	.....	.....	.....	.....
	18355	10554.4	36063.5	1497.1	66470	41211.4	3,750.00	43	34
	.....	.....	.....	.....	.....	.....	.....	.....	.....
	12511	6758	53812	4784.5	77875.5	46725.3	5,000.00	n.a.	n.a.

**Source:** Fisheries Commission data (Tuna Vessel data in number only)

### 2.3 Economic Importance of the Marine Fisheries Sector in Ghana

The importance of the marine fisheries sector in the socio-economic development of Ghana cannot be overemphasized. With a marine coastline of 320 nautical miles, (539km) stretching from Aflao in the East to Half Assini in the West, the marine fisheries sector plays a major role in sustainable livelihoods and poverty reduction in several households and communities.<sup>16</sup> The sector is estimated to contribute about 3% to 4.5% of the nation's Gross Domestic Product (GDP) and about 5% of the Agriculture Gross Domestic Product (AGDP). Fish has remained the preferred and cheapest source of animal protein with about 75% of total annual production being consumed locally. The sector employs an estimated 2 million people in Ghana. 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 13kg per capita.<sup>17</sup> Over 90% of fish products are exported.<sup>18</sup> This is made up of can fish and various export species which include; frozen demersal fish, shrimps, lobsters, cuttlefish, smoked and dried fish. Fish exports for 2007 earned the country a total of US\$ 170 million.<sup>19</sup>

The importance of fish in the Ghanaian diet cannot be overemphasized. It provides the Ghanaian consumer with about 60% of his or her animal protein needs. According to Ocran R the fishing industry contributes significantly to the national economy in terms of food security, employment, poverty reduction, foreign exchange earnings and GDP.<sup>20</sup> The men are involved in the main fishing activities in the artisanal, semi-industry and the industrial sectors, while women are the key players in on-shore post-harvest activities, undertaking fish processing, storage and trade related activities. Others are also engaged in the frozen fish distribution trade as well as marketing fish within and outside the country.<sup>21</sup> Major players in post-harvest fishery activities are the fish mummies who informally fund artisanal fishing and provide financial support in fish processing and trade. The marine fisheries sector provides employment for many rural and urban people in Ghana. It has been estimated that about 10% of the population is involved in the marine fisheries sector from both urban and rural areas. It is further estimated that a total of 500,000 fishermen, fish processors, traders and boat builders are employed in the Fishing Sectors.<sup>22</sup>

Fish and fishery products have gradually become the country's most important non-traditional export, accounting for over 50% of earnings from non-traditional export and earning over US\$80

million for the country. Export earnings from fish and fishery products are a significant source of foreign exchange for government. In terms of foreign exchange earnings it is the second most important Non Traditional Export (NTE) after horticultural products, making up 5% of total NTEs.<sup>23</sup> The various policy initiatives being pursued by the government in the marine fisheries sector should be expedited to help further boost the sector as a sustainable foreign exchange earner for the country.

The role of the sector in terms of poverty reductions is very important. Many poor and vulnerable people rely on the fishing industry either directly or indirectly for their livelihoods. Post-harvest fishing activities clearly provide a wide range of full-time and seasonal livelihood opportunities to many vulnerable people. The post-harvest sector also provide a large and varied range of livelihood activities, which include those employed in processing and trading, labourers who pack, store, load, unload and transport fresh and processed fish product on foot or by trolley for short distances, people providing transport and storage services, export processors, cannery workers, fish meals manufacturers and their staff and those engaged in the production of packaging for different types of products. There are also those who supply production and processing inputs and services such as boat builders, mechanics, timber and fuel wood providers, food vendors, drinking bar operators and many other supporting activities.<sup>24</sup> As can be inferred from the above, the marine fisheries sector in Ghana plays a critical role in the socio-economic development of the nation and must be managed in a manner that will guarantee its continuous support to the economy. Every resource has laws that govern the actions of the people involved in its exploitation. This underpins the establishment of the fisheries administration and management system in Ghana.

## **2.4 Fisheries Administration and Management in Ghana**

The Directorate of Fisheries of the Ministry of Fisheries and aquaculture is responsible for policy formulation and implementation, management and control of the fishing industry under the general guidance and direction of the Minister of Fisheries and the Fisheries Commission. The Fisheries Commission is to advise the Minister on all matters pertaining to the industry. The current Fisheries Law (Act 625 of 2002) provides for the integration of the Directorate of Fisheries and the Fisheries Commission into a more robust Commission for the regulation and management of the utilization of the fisheries resources of Ghana and the coordination of the policies in relation to them.<sup>25</sup> The directorate is under the leadership of a Director, and has five operational divisions. These include; Marine Fisheries Management Division (MFMD), Inland Management and (aquaculture) Division (IFMD), Marine Fisheries Research Division (MFRD), Monitoring Control and Surveillance Division (MCSD) and the Finance and Administration Division (F&AD). Coordination between these divisions is key in the management of the fishing industry.

### **2.4.1 Marine Fisheries Management Systems**

In the marine fisheries sector, there are separate management subsystem for small pelagic, large pelagic, demersals, shrimp and lobsters. The main components of the management regime according to FAO are:

- Limiting industrial vessel fishing effort, especially trawlers and shrimpers, by limiting entry into the fishery through a licensing regime.

- Prescribing the mesh sizes to be used in any particular type of fishing in order to limit exploitation of juvenile or immature fish species, including shellfish and molluscs.<sup>26</sup>

For instance, for the small pelagic fishery, management rules and regulations have been formulated with the aim of protecting juveniles of sardinella. These regulations are primarily intended to work through input limitation, such as mesh size limits. There is also an attempt to identify and take actions with the support of interested parties to forecast and minimize the often high variability in the recruitment, abundance and availability of small pelagic fish resources. There are also a few traditional management systems, which tend to regulate access to marine fisheries in Ghana and thereby conserve the fish stocks. These include:

- In every fishing village a non-fishing day is observed each week (mainly on Tuesday, but sometimes on Wednesday or Sunday). A “fishing holiday” or “fetish day” has been a historical event.<sup>27</sup> These days are used to repair equipment, to give tribute and offerings to the gods of the sea and to allow the fish to rest.<sup>28</sup> Observance of this “fishing holiday” is believed to ensure continued successful harvest.
- In some communities, there is a total ban on fishing activities for various periods, up to two weeks, prior to and during annual festivals.<sup>29</sup>

#### **2.4.2 Legal and Regulatory Frameworks in the Fishing Industry**

In order to effectively manage the fishing industry, there must be regulatory frameworks in place to guide the operations in the industry. Governments have since independence implemented

various legislative interventions in the fisheries sector.<sup>30</sup> For example, in the early 1960s, the Fisheries Act and the Fisheries Regulations, 1964 (L.I. 364) were enacted. In 1972, the government of the National Redemption Council (NRC) promulgated the Fisheries Decree, 1972 (N.R.C.D. 87). In 1977, the Fisheries (Amendment) Regulations 1977 (L.I. 1106) were passed by the same government to amend the Fisheries Regulations, 1964 (L.I.364). In 1979 the government of the Armed Forces Revolutionary Council (AFRC) also promulgated the Fisheries Decree, 979 (AFRCD 30). In that same year, the Fisheries Regulations, 1979 (L.I. 1235) was promulgated. In 1991, the government of the Provisional National Defence Council (PNDC) promulgated the Fisheries Law, 1991 (PNDCL 256) to repeal the AFRCD 30 whilst saving the Fishing Boats Regulations, 1972 (L.I. 770) and the Fishing Boats Regulations, 1974 (L.I 988). In 1993, the Fisheries Commission Act, 1993 (Act 457) was passed amending PNDCL 256. Finally in 2002, the fisheries Act (Act 625) was enacted. Virtually every Government during Ghana's post-independence period, passed laws to regulate the fishing industry, and this gives a good indication about the importance of the fishing industry.

The Fisheries Act 625 of 2002 amends and consolidates past laws on fisheries. It provides for regulation and management of fisheries, the development of the fishing industry and the sustainable exploitation of the resources. It attempts to streamline legislation to respond directly to chronic and emerging issues and to conform to the national and international fishery resource development and management strategies. Specifically, the act consolidates and strengthens the legislation establishing the Fisheries Commission to oversee the Fisheries Directorate, which becomes a secretariat with structures responsible for policy-making, administration and enforcement.<sup>31</sup>

The Fisheries regulation (LI 1968) was also passed in the year 2010 to support the Fisheries Act 625 and spells out detailed directive for prohibited fishing. It also provides directives on; licensing of fishing vessels, importation of fish, fishing in foreign waters, marking on fishing gears and many others. The Fisheries regulation (LI 1968) is predicated on section 139 (1) of the Fisheries Act (625), which prescribes that the Minister responsible for Fisheries may, on the recommendations of the Fisheries Commission, by legislative instrument, make further regulations to ensure harmony in the industry.<sup>32</sup> In totality, the Ghana Fisheries Act 625 of 2002 practically covers every aspect of the fishing 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 cover. 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.

## **2.5 Challenges in Managing the Fishing Industry in Ghana**

In most countries, fisheries production from wild harvest has decreased. The reason include overfishing, poor management, the open access nature of the resources, loss of critical habitats, removal of immature animals and the use of destructive fishing techniques such as bomb fishing. Ecosystem integrity and productivity has also been compromised by removal of key species in the food chain, pollution from poor land use practices and the poor quality and quantity of water flowing into wetlands. In essence, fisheries governance has not kept pace with fishing technologies nor the increasing numbers of fishermen attracted to the industry.<sup>33</sup> Fishing often serves not only as food source, but as a last resort for income for the poor. There is high dependency on fisheries as food, macro-economic dependency and employment dependency.

The situation in Ghana is not different, the country's marine fisheries are open access with little or no control, and individuals enter and exit the trade at will. Increased numbers of fishermen over time has led to too many fishermen chasing fewer and fewer fish in the sea. These and other factors have contributed greatly to the over exploitation of near shore fisheries resources with accompanying consequences to the marine ecosystems. These same issues also present significant threat to aquatic biodiversity. The poor economic health of fisheries is caused by too many boat and fishermen. Improved harvest technologies, increases in marine pollution and habitat degradation are other contributing factors. However, data available from the Fisheries Commission indicated that there is a significant increase in effort to stem the tide.

Weak governance is widely acknowledged as one of the largest and most common problems within the sector. Factors characterizing weak governance in fisheries include corruption and inadequate resources. Although, fisheries in Ghana has over the years been managed and regulated by a number of laws and regulations, the indication by many authors and various research findings is that the state of fisheries management cannot be said to be satisfactory.<sup>34</sup> In the wake of Ghana's oil find it is even going to be more challenging as the two industries are operating in the same environment with different interest. It's in the light of this development that there is the need to put in place measures to create the enabling environment for the two industries to coexist and operate in the marine environment without recourse to conflict.

## 2.6 Conclusion

The fishing industry in Ghana started as artisanal fishing using very simple, in efficient gear and methods in lagoons, lakes, rivers, estuaries and marine waters very close to shore. In spite of the simplicity of their gears and methods of fishing, the industry evolved and became very industrious and adventurous, venturing as far as Liberian and Nigerian waters as early as the 1800s and early 1900s. The industry is based on resources from the marine and to a lesser extent, inland sector. Fishing activities in the marine sector range from artisanal to industrial, exploiting both pelagic and demersal fish resources up to the Exclusive Economic Zone (EEZ), which is 200 nautical miles from shore.

Marine fishing is a major economic activity along the coastline of Ghana and an estimated 2 million people are directly or indirectly employed in the fisheries sub-sector as fishermen, fish processors, fish sellers, firewood sellers, food sellers, transport owners, porters, canoe carvers, carpenters and engine mechanics. In view of the economic importance of the industry, a number of regulatory frameworks have been enacted to guide against illegal methods of fishing. Though, there are some challenges in the implementation of some of the regulations, the industry has seen a lot of improvement in the area of management over the last couple of years.

## Endnotes

- <sup>1</sup> 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.
- <sup>2</sup> Bank of Ghana (2008) The Fishing Sub-Sector and Ghana's Economy, Research Department, Bank of Ghana, September 2008, ISBN: 0855-658X.
- <sup>3</sup> DoF 2007: A summary of fisheries statistics in Ghana (mimeo) p. 2. Directorate of Fisheries, Accra.
- <sup>4</sup> Gordon, A., Pulis, A. and Owusu-Adjei, E. (2011). Smoked marine fish from Western Region, Ghana: a value chain assessment. World Fish Center: USAID integrated coastal and fisheries governance initiative for the Western Region, Ghana. pp. 46
- <sup>5</sup> Kraan, M. L. (2009). Creating space for fishermen's livelihood: Anlo-Ewe beach seine fishermen's negotiations for livelihood space within multiple governance structures in Ghana. A dissertation submitted to the faculty of social and behavioural science of University of Amsterdam.
- <sup>6</sup> DoF 2007, op. cit.
- <sup>7</sup> Mensah, Isaac (2010). An analysis of the performance of Ghanaian canned tuna export to EU market (1999-2000). Master thesis in international fisheries management submitted to the University of Tromso. November 2010. Fernwood Publishing, Halifax, Canada.
- <sup>8</sup> 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.
- <sup>9</sup> *Marine policy* 28 (2004) 131 – 149.
- <sup>10</sup> *Idem.*
- <sup>11</sup> Mensah, Isaac, op. cit.
- <sup>12</sup> *Ibid.*
- <sup>13</sup> Odotei, I. 2002b. *The Artisanal Marine Fishing Industry in Ghana: A Historical Overview*. Accra: Institute of African Studies.
- <sup>14</sup> Amador, K., Bannerman, P., Quartey, R. and Ashong, R. 2006. Ghana Canoe Frame Survey 2004. Information report number 34. Marine Fisheries Research Division. Ministry of Fisheries. Ghana.
- <sup>15</sup> *Idem.*
- <sup>16</sup> Ocran, R., (1973). "Impact of the fishing industry on the national economy, in *The Ghana Fishing Industry*. Tema, Ghana: Fishery Research Unit.
- <sup>17</sup> *Idem.*
- <sup>18</sup> Directorate of Fisheries, (2005a); 'Compilation of National Fish Production, Imports, Exports and Consumption in Metric Tonnes (2001-2004)'. Directorate of Fisheries, MoFI Technical Report. Accra, Ghana.
- <sup>19</sup> Marine Fisheries Research Division. Ministry of Fisheries. Ghana.
- <sup>20</sup> Ocran, R, op. cit.
- <sup>21</sup> Lawson, R. M. and Kwei, E. A. (1974), *African Entrepreneurship and Economic Growth: A case study of the fishing industry of Ghana*, Accra: Ghana Universities Press.
- <sup>22</sup> Amador K., Bannerman P. O., Quartey R., Ashong, op. cit.
- <sup>23</sup> Mensah, Isaac op. cit.
- <sup>24</sup> Agbodeka, F., (1992). *An economic history of Ghana from the earliest times*. Accra, Ghana Universities Press.
- <sup>25</sup> Marine Fisheries Research Division. Ministry of Fisheries. Ghana.
- <sup>26</sup> Food and Agriculture Organization, (2004a) 'Information on Fisheries Management in the Republic of Ghana'. Food and Agriculture Organization of the United Nations Organization, March 2004. [www.fao.org](http://www.fao.org). Accessed on 20 March 2013.
- <sup>27</sup> Walker, Barbara. L. E., (2002). Engendering Ghana's seascape: Fanti fish traders and marine property in colonial history. *Society and natural resources*. 15: 5, 389-407.
- <sup>28</sup> *Ibid.*
- <sup>29</sup> *Ibid.*

---

<sup>30</sup> Directorate of Fisheries. 2004. *Fisheries Development Policy Framework*. Accra: Fisheries Research Program.

<sup>31</sup> Fisheries Act, 2002 (Act 625), Government of Ghana Publisher.

<sup>32</sup>Ibid.

<sup>33</sup>Boateng, Seth Kwame (2010). Addressing the challenges facing the fishing industry.

<sup>34</sup> FAO 2001 International plan of action to prevent, deter and eliminate illegal, unregulated and unreported (IUU) fishing. FAO, Rome, 2001.



## **CHAPTER THREE**

# **OPERATIONS OF MULTINATIONAL OIL COMPANIES AND THEIR IMPLICATIONS ON THE MARINE FISHERIES SECTOR IN GHANA**

### **3.0 Introduction**

This chapter assessed the operations of multinational oil companies in the light of their effects on the marine fisheries sector in Ghana. It gave an overview of oil exploration and production in Ghana and the operations of multinational oil companies in Ghana. It then considered the effects of oil activities on the marine fisheries sector. It finally looked at the concerns of stakeholders and management policies of the oil industry.

### **3.1 Oil Exploration and Production in Ghana**

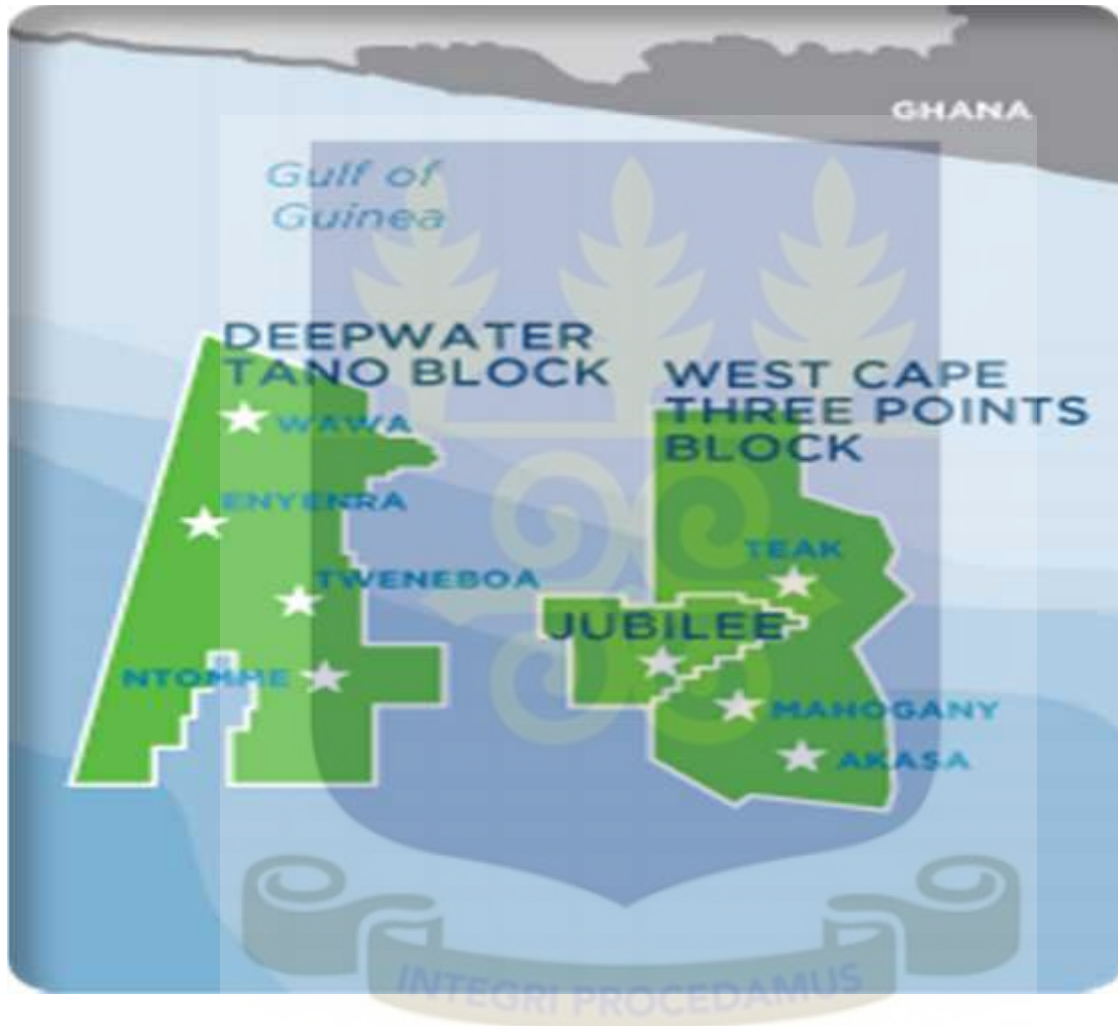
The history of oil and gas exploration and production in Ghana dates back to the nineteenth century, during the pre-independence era. In actual fact, the discovery of oil seepage at onshore Tano basin, near Half Assini in the Western Region triggered the exploration for oil in 1896 by the West African Oil and Fuel Company Limited.<sup>1</sup> Several companies came on board before and after independence, but it was not until the 1960s that successive governments began to seriously search for oil in commercial quantities. After independence in 1957, the policy direction of successive governments has been to explore the hydrocarbon deposits of Ghana.<sup>2</sup> However, oil and gas exploration has been limited due to the high risk nature of its terrain and low oil price environment at that time. Between 1898 to the late 1990s an estimated hundred exploration wells had been drilled in Ghana with no significant discovery except for the Saltpond Offshore Oil Field in the 1970s.<sup>3</sup>

Further drilling and discoveries included Philips Petroleum in the South Tano Field for the period 1978 to 1980 and Petro-Canada International Assistance Corporation in 1985 at the Tano basin. Assessments of these discoveries were made and some found to be marginal and not economically viable. A law enacted in 1983 establishing the GNPC was passed in 1985. Since then, the GNPC has collaborated with other companies to drill wells and acquire seismic data.<sup>4</sup> GNPC later entered into a joint partnership with Lushan Eternet to form the Saltpond Offshore Production Company Limited (SOPCL) in 2000, which resumed operations on the offshore Saltpond field currently believed to be producing about 600 barrels per day (bpd) of crude oil. In 2004, Komos Energy and E. O. Group made initial contact with Ghana National Petroleum Corporation (GNPC) to commence potential deep water oil and gas exploration in Ghana. Tullow Oil joined later in 2006. A partnership between these two companies eventually resulted in the Oil find in 2007, in two deepwater blocks; Cape Three Points and Tano by Kosmos Energy and Tullow respectively (see figure 3.1).<sup>5</sup>

There are over 50 drilled exploration wells; 75% of which have shown indication of hydrocarbons and 10 discoveries.<sup>6</sup> The oil find has resulted in a rush for acquisition of exploration blocks and a speed up of exploration activities.<sup>7</sup> The two discoveries referred to as the “Jubilee Field” is an offshore production operated by Tullow as a unitized field. Production has since commenced in December 2010 on Jubilee phase 1. The offshore oil and gas project is expected to help diversify Ghana’s economy and satisfy her energy needs.<sup>8</sup> In addition to enhancing the economy, it is expected that the managements of the oil and gas companies would put in place projects that would benefit local communities in the oil find area.<sup>9</sup> The Jubilee Field

is estimated to contain between 600 million and 1.8 billion barrels of crude oil, one of the largest find in West Africa in recent years.<sup>10</sup>

**Figure 3.1:** Deepwater Tano and West Cape Three Points Blocks

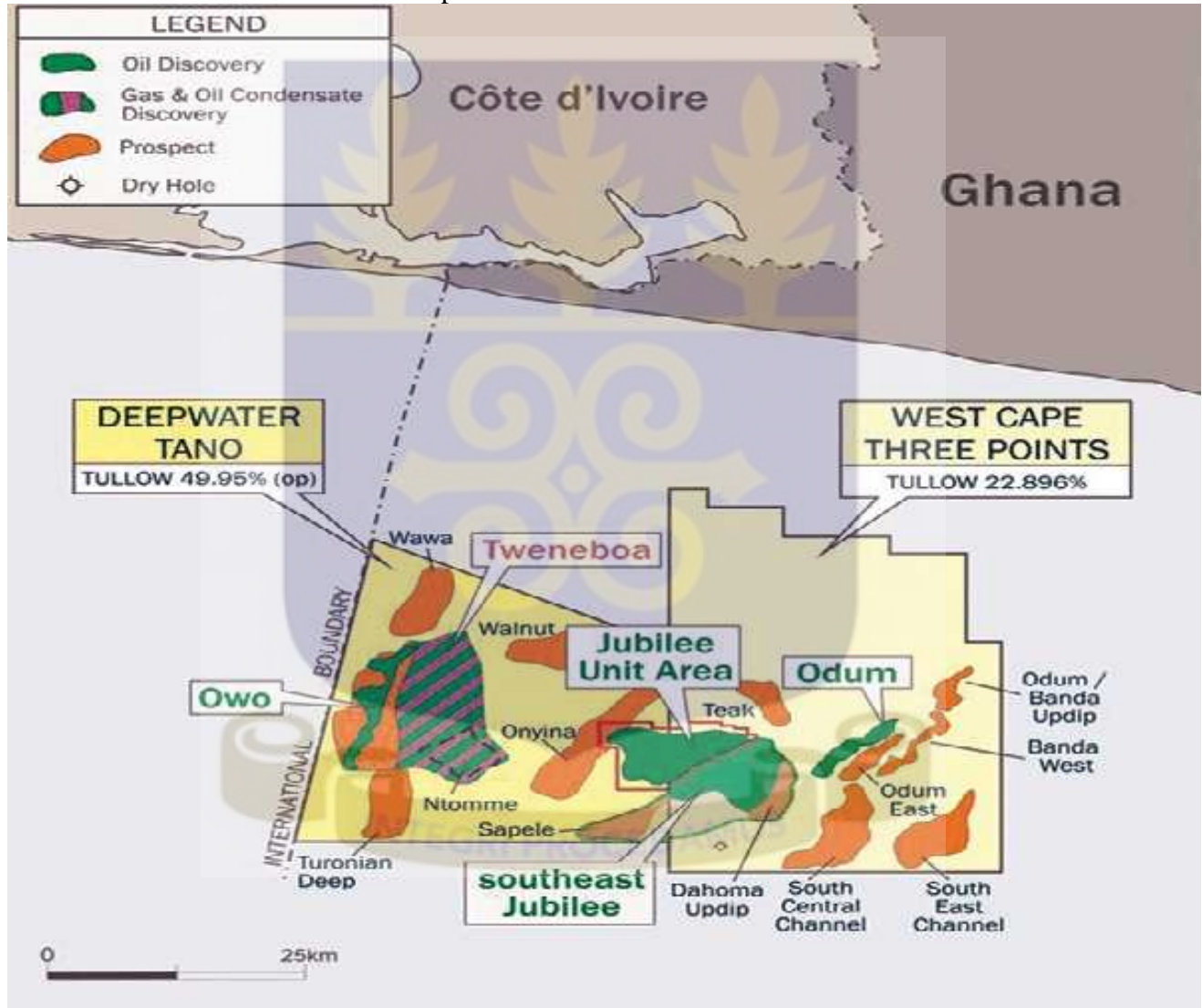


**Source:** Kosmos Energy

There is also additional 800 billion cubic feet of gas in the field.<sup>11</sup> The Jubilee Field is 60 nautical miles from the coast of Ghana and 132 kilometres (83 miles) southwest of Takoradi, the capital of the Western Region of Ghana. It is sandwiched between the Tweneboa and Odum oil fields. Figure 3.2 is a diagram of the Deepwater Tano and West Cape Three Points Blocks

showing the Jubilee Field and other related developments. According to Tullow, the lead operator of the field “about 55 000bpd will be produced within the first few months before more than doubling output to 120 000.”<sup>12</sup>

**Figure 3.2:** Diagram of the Deepwater Tano and West Cape Three Points Blocks showing the Jubilee Field and other related developments



**Source:** Tullow oil

The government of Ghana and by extension the people of Ghana has a 23.5% stake (GNPC 10% carried in West Cape Three Points, GNPC 10% carried in Deep Water Tano and E. O groups, a

Ghanaian Company 3.5%) in the Jubilee Fields. The majority stake (76.5%) is held by Kosmos Energy, Tullow and Anadarko Petroleum. The details are shown in table 3.1 below.

**Table 3.1:** Stakes of partners in West Cape Three Points and Deepwater Tano Blocks

<b>West Cape Three Points</b>	<b>Deep Water Tano</b>
Kosmos 30.875% (operator)	Tullow 49.95 (operator)
Anadarko 30.875%	Kosmos 18%
Tullow 22.896%	Anadarko 18%
GNPC 10% (carried)	GNPC 10% (carried)
E. O. Group 3.5%	Sabre 4.05%
Sabre Oil and Gas Ltd 1.854%	

**Source:** ISODEC 2013

### **3.2 Operations of Multinational Oil Companies in Ghana**

The operations of multinational oil companies in Ghana dates back to the colonial era. Successive governments after independence have engaged the services of multinational oil and gas companies in respect of exploration for oil deposits in Ghana. These engagements have seen various exploration activities in Ghana both inland and offshore.<sup>13</sup> Ghana's Oil Industry operates within three sectors: upstream, mid-stream and downstream.<sup>14</sup> Empirical evidence has shown that activities in these sectors effect the operations of the fishing industry. The upstream sector also known as the exploration and production (E&P) sector is that which is involved in crude oil and natural gas recovery and production.<sup>15</sup> The activities of multinational oil companies in the upstream sector are regulated by the Ministry of Energy (MOEN) with legislative support from

Parliament. Current operation upstream is in the Jubilee Field with two platforms: Eirik Raude (a Norwegian Rig for well drilling) for the drilling of wells and FPSO Nkrumah for the production and storage of oil. Activities upstream are presently supervised by the GNPC on behalf of the MOEN due to their technical expertise. Cardinal activities in upstream operations includes: seismic operations, drilling operations, development and production. The mid-stream sector involves all activities that link the upstream to the downstream. These activities include transportation of oil from the FPSO Nkrumah to refineries onshore and storage of petroleum.

The downstream sector is an onshore operation that revolves around refining, distribution and marketing of petroleum products.<sup>16</sup> Activities of the sector also include the establishment of infrastructure to support the operations of the industry. The National Petroleum Authority (NPA) established by an Act of Parliament in 2005 is mandated to regulate, oversee and monitor activities in the downstream petroleum sector.<sup>17</sup> The discovery of oil off the coast of the Western Region of Ghana is a business opportunity with its attendant effect on the entire economy of Ghana in general and the Western Region in particular. Since the oil activities in the Region are relatively new, there is the need for proper infrastructure to be put in place to support the industry. Some of the infrastructure needed includes pipeline, storage tanks, refineries, gantry cranes, roads and seaport transport terminal, public utilities, hospitality and industry among others. There is already some infrastructure being put in place by the government, the oil companies and some private companies as well as individuals. By the time the oil production fully takes shape, Ghana will have a large-scale downstream infrastructure in place.

The GNPC is currently developing a gas infrastructure project to lay pipelines from the offshore wells to Takoradi in the Western Region, where the Volta River Authority (VRA) operates a power plant that runs on gas imported from Nigeria via the West African Gas Pipeline (WAGP). Work on an oil services terminal has also began at Takoradi Port since September 2009. The project valued at US\$50 million apart from a warehousing space and transit sheds, includes the pipeline that will bring crude oil from offshore fields.<sup>18</sup> The Takoradi Harbour, which has historically served as the country's main dry bulk cargo terminal is to be expanded according to the Ghana Ports and Harbours Authority (GPHA). GPHA will expand the main breakwater, build a new pier for dry and liquid bulk, develop a terminal exclusively for oil and relocate the existing cargo terminals to make space for energy-related facilities.<sup>19</sup>

### **3.3.1 Seismic Operations**

Seismic surveys provide information on the depth, position and shape of underground geological formations that may contain oil or gas. The end result of seismic surveys is to provide a detailed picture of the structures and rock formations in the surveyed area. The results are then analysed by geophysicists to determine the presence of oil and gas deposits. Although there has been a lack of scientific evidence on the detrimental effect of acoustic waves on marine life, the geophysical industry has not been able to prove this. There are serious concerns on the effects of seismic waves on whales, sea turtles, prawns, lobsters and other commercial fish species. In the Gulf of Mexico, United Kingdom, Canada, Australia and most parts of the world it is a standard procedure that a seismic contractor performs ramp-up procedure to warn sea animals and make provision for 24 hour observer crews onboard seismic vessel to observe the presence of sea animals that are likely to be harmed by acoustic waves. Ramp-up procedure drives sea animal at

least about 500 metres from a seismic array. Research conducted in the Norwegian seas has proven that seismic shooting could cause fish to travel tens of kilometers, and some may not return unless after a few weeks. Figure 3.3 shows a vessel engaged in seismic operation.

**Figure 3.3:** A vessel engaged in seismic operations



Source: [www.capp.ca](http://www.capp.ca)

### 3.2.2 Drilling Operations

The main discharges during drilling are cuttings; small chips of formation rock cut by the drilling bit. The mud used in cooling and lubricating the drilling bit carry the cuttings out of the hole and counter-balance the pressure of gas when it is reached. It is generally accepted that drill mud causes great harm in exploration activities. In an experiment to monitor the damage caused by drill mud in an exploration drilling from 1981 to 1982 on George Bank, barium, a tracer of

drilling mud doubled in concentration 35km eastward and increased six fold 65km in the western direction. Oil based mud is known to have detrimental effects on marine life due to its red oxide potential. Figure 3.4 shows a drill rig being positioned.

**Figure: 3.4: A drill rig**



**Source:** [www.cappa.ca](http://www.cappa.ca)

### **3.2.3 Development and Production**

The development stage is characterized by further drilling as well as installation of pumps and separation equipment together with their peripherals. Directional drilling in which several wells can be drilled from a single platform increases contamination of the soil in both onshore and offshore expeditions. In production, the major waste is “produced water”, which contains inorganic salts, heavy metals, solids, production chemicals, hydrocarbons and occasionally Naturally Occurring Radioactive Material (NORM). According to research these have minimal

effect on the environment. However, the release of “produced water” into water bodies requires special care. Transportation of oil during production has also been a major source of pollution through oil spills and leakages. Oil spills occur as a result of unguaranteed mechanical processes that are involved in oil transportation. According to a research conducted in Nigeria, for a period of fourteen years (from 1986 to 2000), the Nigerian petroleum industry suffered a total of 3,854 oil spills, accounting for the loss of total 437,810 barrels of oil into the Nigerian environment.<sup>20</sup> Pipeline installation also requires massive dredging of seabed and excavations of soil, which poses serious threat to sensitive environments.<sup>21</sup> In offshore activities associated with pipeline installations, the topography of the seabed is altered and the marine habitat is either disturbed or destroyed.

### **3.3 Effects of Oil Activities on the Marine Fisheries Sector**

Oil is a blessing for national treasures and can offer jobs to the citizenry, including fishermen. Oil revenues and royalties can boost the economies of fishing communities and cause other positive spill over effects across the country, regarding infrastructure development and job creation. On the other hand, if proper policies are not put in place by government, the oil find can become a curse. This assertion was re-echoed by a local resident of Sekondi:

We are happy about this oil find. The country has been exploring for oil deposits for a very long time, but thank God we have it now in commercial quantities. My only fear is that this region has been home to many resources; like gold, bauxite and others, yet the region in particular and the country as a whole is still grappling with abject poverty and underdevelopment. What I want to say is that if pragmatic measures are not put place by government to guide the operations in the oil and gas industry as well as the utilization of the oil revenue, then the oil should better remain beneath the sea forever because the situation will not be different from the gold story.<sup>22</sup>

Fisheries generate none of the excitement of fantasies of oil and gas. Oil activities can have negative effects on fisheries, the environment, human, socio-economic and culture of fishing

communities. This research is focused on the negative effects of oil and gas activities on the marine fisheries industry. The marine fisheries industry is the first to be impacted by oil exploration activities upstream. Fishermen are told to remove their boats and gears from an area so that seismic vessels can begin operations.<sup>23</sup> The seismic and drilling activities disrupt fishing activities.<sup>24</sup> Until the use of “air gun” recently, the seismic survey equipment used in offshore petroleum could produce very loud noise and these explosives could kill fish species at a range of some hundreds of metres and reduce fish catches drastically.<sup>25</sup> The seismic activity could force many fish to migrate some tens of kilometres away from the air gun and if the fish species are forced away their spawning ground or even a prime feeding area this could lead to reduction in fish catch and a major loss to the resource.<sup>26</sup> This was captured in a speech delivered during a visit to the Western Region by the President of the republic of Ghana, President John Dramani Mahama, in 2012. The Vice President of the Western Regional House of Chiefs, Nana Akwasi Agyemang IX, told the President that:

The fishermen in the region have complained of low fish catch when they go fishing. He further noted that the marine environment, most especially with regard to the oil and gas activities, is our worry and also the poverty level and the living condition of our fishing communities is nothing to write home about. According to him, though the Environmental Protection Agency (EPA) has indicated that scientifically the drilling of oil is not causing any environmental problem to fishing activities in the region, fish catch has been on the decline. He intimated that a committee should be set up and directed to look into the problem and propose steps to address it.<sup>27</sup>

Routine discharge of wastes during oil activities could impact vulnerable on fishery resources. Most of the oil activities that cause damage to fishing resources include oil spills. Oil spills can cause damage to fish resources by physical contamination, toxic effects and by disrupting business activity.<sup>28</sup> Oil spills and blow-outs may also cause damage to eggs, larvae, seabirds and marine mammals. Oil spills have a catastrophic impact on the source of sea food, by usually taking a deadly toll on fish, shellfish and other marine life, particularly, if large numbers eggs or

larva are exposed to the oil. A case in point is the Louisiana coast where shrimp and oyster fisheries were among the first victims of the 2010 BP Deepwater Horizon offshore oil spill.<sup>29</sup> Similarly, the Exxon Valder oil spill damaged the eggs of billions of salmon and herring.<sup>30</sup> As a result of the oil pollution, commercially exploited animals and plants were killed due to smothering and toxicity.

This can result in catches becoming physically contaminated or acquiring an objectionable oil-derived taste referred to as “tainting”.<sup>31</sup> In some cases, fishing gears may be damaged by oil, leading to the risk of catching stocks which are contaminated.<sup>32</sup> If fish is contaminated, consumers may refuse to purchase this seafood from an affected region and this can lead to loss of income and market confidence.<sup>33</sup> In addition to mortality, oil spill may cause more subtle long-term damage to behavior, feeding, growth or reproductive functions of fish species. Physical interference with navigation and with fishing fleets is an immutable and obvious consequence of oil activities on the shelf.<sup>34</sup> There is also a displacement of traditional fishing areas which normally occur because of construction of the offshore platforms, pipelines and other structures of the field development as well as from dumping debris and leaving various objects and materials on the bottom.<sup>35</sup> According to a fisherman from the Western Region, “the Jubilee Fields and its accompanying operations have denied us their vital fishing grounds.”<sup>36</sup>

It is an undeniable fact that, exploitation of petroleum resources has tremendous economic implications for a country. Activities of oil companies as perceived by the environmentalist have serious impacts on the environment. A research conducted by a group of scientist from the Ambrose Ali University of Nigeria on “The effects of petroleum exploration and production on

the contents of soil and groundwater in the Niger Delta,” showed a high pollution of the ground water systems and soil. The pollutants include heavy metals such as Iron, Copper, Cadmium, Chromium, Lead and Nickel. Consumption of water and food with high concentration of such pollutants poses a serious health problem to both animals and human beings.<sup>37</sup>

Ghana is a new oil producing nation and therefore needs to learn from the experiences of other oil producing countries around the world. This will help the government put in place measures that would guide against the oil find in Ghana becoming a curse rather than a blessing. If such measures are not taken there is the likelihood that the oil find may create socio-economic imbalance due to new employment opportunities, income differentials, inflation, differences in per capita income when different members of local groups benefit unevenly from induced economic changes. Aggrieved people, in such situations, will often react when they are persuaded that the activities of oil companies are detrimental to their socio-economic and physical wellbeing, as it has been the case in the Niger Delta region of Nigeria. Ghana must learn lessons from the Niger Delta situation.

### **3.4 Ghana’s oil find: The Concerns of the State and Non-State Actors**

Ghana discovered oil and gas in commercial quantities in 2007, and subsequently, commenced production in the last quarter of 2010. In the light of the potential economic boost that will accompany petroleum production, its discovery was welcome news for Ghanaians.<sup>38</sup> Further exploration off the Ghana coastline has indicated that there are significant additional reserves and it is possible that at least four more large oil and gas fields will come into production by 2017.<sup>39</sup> Table 3.2 below shows an update of discoveries in Ghana.

**Table 3.2:** Update of Discoveries in Ghana

Block/Operator	Discoveries	Date of Discovery	Hydrocarbon Type	Status
DWT/WCTP	Hyedua I	August 2007	Oil	Production
Tullow Oil (Jubilee Field)	Mahogany – I	June 2007	Oil	Production
Shallow Tano/Interroll	Ebony	November 2008	Condensate/Gas	Marginal
DWT/Tullow Oil	Tweneboa – I	March 2009	Gas Condensate	Plan of Development
	Tweneboah – 2	January 2010	Oil	
	Owo/Enyenra – I	September 2010	Oil	
	Ntomme	January 2012	Oil & Gas	Exploration
	Wawa	July 2012	Oil & Gas	Marginal
WCTP/KOSMOS Energy	Odum – I	February 2008	Heavy Oil	Appraisal
	Teak – I	February 2011	Oil & Gas	Appraisal
	Teak – 2	March 2011	Gas	Marginal
	Banda – I	June 2011	Oil	Appraisal
	Mahogany Deep	January 2009	Light Oil	Appraisal
	Akasa – I	August 2011	Light Oil and Gas	Appraisal Completed
OCTP/ENI	Sankofa – I	September 2009	Gas	Appraisal Completed
	Gye Nyame -I	July 2011	Gas	Appraisal
	Sankofa East	December 2012	Oil & Gas	Exploration
DWTCTP/HESS	Paradise – I	July 2011	Oil & Condolence	Exploration
	Hickory North	May 2012	Oil & Condolence	Exploration
	Almond	October 2012	Oil & Condolence	Exploration
	Beech	August 2012	Oil	Exploration
	Pecan	November 2012	Oil	Exploration
	Cob	January 2013	Light Oil	Exploration
DWCTP/LUKOIL	Dzata– I	February 2010	Oil & Gas	Appraisal

**Source:** Ministry of Energy and Petroleum

**Legend**

- DWT - Deepwater Tano
- WCTP - West Cape Three Points
- OCTP - Offshore Cape Three Points
- DWTCPT - Deepwater Tano and Cape Three Points

The oil and gas industry in Ghana is expected to be a significant source of growth and development. This was demonstrated by the euphoria expressed by the citizenry across the country. This euphoria is based on the assumption that the oil and gas resource will translate into revenue that is necessary to address the challenges of the country. The hope of majority of Ghanaians is that it will change their current circumstance for the better.

A local community leader in his response to the excitement indicated that: “people are happy and excited with the hope that the oil find will create employment and facilitate development, but it may not be true if the oil find and revenue from it is not well managed.”<sup>40</sup>

Understanding the potential prospects of the Jubilee Field discovery may help appreciate the euphoria generated by Ghanaians in respect of the oil find. GNPC, Tullow Oil, and Kosmos predicted that the Jubilee Field in the Tano-Cape Three points in the Western Region potentially has an estimated recoverable light crude oil reserves in the range of 650 million to 2 billion barrels, with a potential of around 800 billion cubic feet of natural gas. Potential revenues from the Jubilee Field have been variously estimated by a number of local and international institutions. Projections from the International Monetary Fund and the World Bank, over a 19 year period are indicated in Table 3.2 below.<sup>41</sup> Clearly, this is an additional revenue source besides other known sources of revenue to the state.

**Table 3.3:** Projected Oil Annual Revenue from Jubilee Field (US\$ Millions)

<b>Year of Production</b>	<b>IMF Estimates</b>	<b>World Bank Estimates</b>
2011	752	900
2012	723	1,011
2013	1,324	1,083
2014	1,326	1,484
2015	1,352	1,796
2016	1,428	1,804
2017	1,457	1,587
2018	1,485	1,400
2019	1,553	1,213
2020	1,491	1,053
2021	1,491	946
2022	1,491	839
2023	1,176	759
2024	925	706
2025	723	652
2026	562	599
2027	433	546
2028	330	519
2029	247	492
<b>TOTAL</b>	<b>20,269</b>	<b>19,390</b>

Source: IMF, 2008 and World Bank, 2009.

Notwithstanding the excitement and expectations generated in support of potential oil and gas revenue, it has also generated some fear among some segments of the society, particularly civil society and academia. Underneath this fear is the phenomenon of the “resource curse” which indicates negative impacts of the presence of natural resource. Empirical data from resource-rich countries in Sub-Sahara Africa depict a rather sad case of economic stagnation or deceleration, weakened democratic systems, poverty and conflict.<sup>42</sup> While a section of academicians are calling for cautious optimism with the oil find, a security analyst with the Kofi Annan International Peace Keeping Training Centre (KAIPTC) is concerned about whether the oil find will not lead Ghana in the path of the Niger Delta.<sup>43</sup>

### **3.4.1 The State and Ghana’s Oil Find**

The state is made up of the ruling government of the day and its machinery. The government is mandated to be a representative of the people and vested with the authority to hold in trust for the people all the properties of the state. The government views the oil and gas as another resource of the state belonging to all Ghanaians, requiring their control and management for and on behalf of the people of Ghana. For the government, the place of discovery and extraction is immaterial. Whether onshore or offshore, it belongs to the state and wholly under the management and control of the government. The 1992 Constitution of Republic of Ghana reinforces this view point. Chapter twenty-one article 257(6) states that every mineral in its natural state beneath or upon any land in Ghana, rivers, streams water course throughout Ghana, the Exclusive Economic Zone and any area covered by the territorial sea or continental shelf is the property of the Republic and shall be vested in the President on behalf of and in trust for the people of Ghana.<sup>44</sup>

The government also views the oil and gas resource as a means of revenue generation which can be a source of development.<sup>45</sup> Other government officials see it as a tool for weakening democratic institutions in order to entrench and perpetuate their hold on power. It is a means of satisfying their individual parochial interests through corrupt activities. The situations in Angola, Equatorial Guinea, Gabon and Nigeria are examples in point.

### **3.4.2 State Institutions and Ghana's Oil Find**

The state institutions and agencies involved in regulating the emerging oil and gas industry in Ghana are GNPC, MOEN, and the Ghana Navy. Other institutions like the EPA and the NPA also play various roles in regulating the industry. For the GNPC the oil find is good news for the government and an achievement after many years of exploration. According to an official of GNPC the oil discovery and exploitation has imposed more responsibilities on the organization. The GNPC is both a regulator and a stakeholder in the Jubilee Field. This has created a high demand for human capacity development to meet the new challenges of the oil find.<sup>46</sup> However, the regulating role was taken over by Petroleum Commission in January 2012 in accordance with the PCA, 2011, Act 821.

The MOEN is the state institution with oversight responsibility over the energy sector. This outfit embraces the new oil find as another source of revenue for the state. The oil find means policy formulation, legal framework, legislation, education, monitoring and evaluation and indeed additional responsibility for the Ministry. The Ghana Navy, prior to the oil discovery was one of the key agencies responsible for Ghana's maritime security. Commencement of offshore production in the Jubilee Field presents new maritime challenges that have engaged the attention

of the Ghana Navy. While the majority of naval personnel were hopeful that the oil find will bring more benefits to the navy and transform their living conditions, a senior naval officer holds a view contrary to that. He intimated that the oil find has imposed new security, human resource and logistical challenges on the Navy. He added that The Ghana Navy is the only government agency to use force at sea. In order for workers at the oil fields to do their work, they need to be assured of security. The Navy conduct patrols to ensure that only authorized vessels and personnel are at the oil fields. However, the navy currently does not have vessels that can stay at sea for longer periods. It does not also have the expertise in how to contain oil spill related accidents at sea.<sup>47</sup>

### **3.4.3 Multinational Oil Companies and Ghana's Oil Find**

International oil companies with the expertise and financial capabilities are usually engaged in partnership to undertake oil exploration and exploitation in resource-rich countries. Most resource abundant countries, especially countries in Sub-Saharan Africa, do not have the requisite expertise and financial capacity to extract these resources, hence they go into partnership with Multinational oil companies to do the extraction. The Jubilee partners and other oil companies exploring other sedimentary basins view the oil resource in Ghana as the driver for heavy investment in the country. For them, the oil presents an opportunity for the deployment of their resources to assist Ghana derive value from its oil and gas resource. Multinational oil companies usually present a posture of benevolent investors who are in to seek the good of the resource rich country. The reality, however, is that they are motivated by profits and are in to seek the interest and agenda of their companies. Indeed, oil presents them the opportunity to maximize benefits at the expense of the resource-rich country.<sup>48</sup> In Ghana concerns have been

expressed over the unfavourable nature of petroleum agreements between Ghana and the International oil Companies by some experts. This is an indication that the IOCs seek first their own interest before the interest of the host country.

### **3.4.4 The Traditional Chiefs and Ghana's Oil Find**

Traditional chiefs in the Western Region have expressed frustration with the activities of oil companies, saying that their source of livelihood, which is fishing, is being destroyed. The traditional chiefs of the region are cautious in expressing their concerns about the oil find. Although they do not contest the development potential of the oil resource, they observe that like other resources it may produce negative outcomes if not well managed. The chiefs also view oil as a potential pollutant of the sea endangering the lives of fish species and the sea environment in general. A traditional chief stated that:

Look at gold mining at Obuasi, Bogoso, Takwa and Prestea, because of exploitation of the natural resource, the environment has not been the same". Though, the oil find has created some employment opportunities for the people, it also has detrimental effects on the environment and the socio-economic lives of the people. Just look at the way oil activities are scattered all over the sea of late. The oil companies are destroying our fishing grounds in the western region. The oil find must therefore be managed in such a way that it does not destroy the environment or affect the livelihoods of the people.<sup>49</sup>

### **3.4.5 The Fishermen and Ghana's Oil Find**

Fishermen across Ghana know no boundaries in their fishing expeditions. Therefore the issue of the oil operations upstream is of much interest to the fishermen. The Western Region has been described as the oil region even though the Jubilee Field is offshore, about 63km from the coastline bordering the region. The close proximity of the Rig to the communities, coupled with the fact that the people of the region stand to bear the immediate effects of the activities of oil

exploitation on, supports the name given the region. The fisher folks in the region project a mixed perception of oil and gas. While they view the oil and gas resource as good timing for the country due to its revenue generation, it means loss of livelihood to them and their families. They argue that the light on the oil Rig, the FPSO Nkrumah and the 500m radius of no fishing zone restriction around the Rigs and the FPSO Nkrumah has depleted their catch affecting their livelihood, hence the need for some compensation. The conviction of the fishermen is that they live by the sea, on the sea and therefore own the sea. Any action that displaces them from the benefits of the sea should be restored in some other form of compensation. A typical example is the complaint by the fisher folks in the Western Region about how the activities around the Oil Rigs and the FPSO Nkrumah draws the fishes to the Rigs, thereby denying them of good catch, which is their source of livelihood. A local fisherman expressed this concern:

Government should take care of all the fishermen and their families who depend on the sea, since it has started drilling oil from the sea. The oil has polluted the sea so we cannot get good catch to raise money to take care of our children in school. Our communities should be taken care of with money from the oil.<sup>50</sup>

The clarion call and wish of all the actors and indeed all Ghanaians is that the oil revenues should translate into development that will visibly reflect in the lives of the people especially the people who derive their livelihood from the sea. Government should, as a matter of urgency, take necessary steps to address these concerns to avert any upheaval regarding the oil find.

### **3.5 Oil and Gas Policy and Legal Framework in Ghana**

The oil and gas industry operates within a defined legal, policy and regulatory framework. This framework establishes the road map with clear highlights of the landmarks indicative of the direction of the resource abundant country. Oil and gas exploration and exploitation in Ghana is

governed by laws introduced before and after discovery of oil and gas in commercial quantities in the offshore deep waters of the Tano and Cape Three Points. In the 1980, three laws were introduced: The Petroleum Exploration and Production Act, 184 (PNDCL. 84), and the Petroleum Income Tax, 1987(PNDCL. 188).<sup>51</sup> The two other legislations that have some impact on the oil and gas industry are the Environmental Protection Agency Act, 1994 (Act 490), and the Ghana Maritime Authority Act, 2002 (Act 630).<sup>52</sup>

Presently, the Petroleum Revenue Management Bill (PRMB) and the Petroleum Commission Bill (PCB) have been passed by Parliament and assented to by the President into the Petroleum Revenue Management Act (PRMA), 2011, Act 815 and Petroleum Commission Act (PCA), Act 821 respectively.<sup>53</sup> However, the Petroleum exploration and production Bill (2010) and the Local Content and Local Participation Bill are yet to be passed. The Petroleum Exploration and Production Bill (2010) is not entirely new, but an improved version of the Petroleum Exploration and Production Law, (PNDCL 84) 1984. Also at a drafting stage is the National Oil and Gas Policy, yet to be passed as legislative instrument and a subsidiary to the Petroleum Exploration and Production Act. Internationally, Ghana is also a signatory to a number of United Nations and Regional Cooperation Conventions and Multi-lateral Agreements. These conventions give protection to the environment and can also help in managing environmental impacts. The content of some of these management schemes and regulatory frameworks are discussed in the subsequent sections of this research.

### **3.5.1 Petroleum Exploration and Production Law PNDC Law 84**

The petroleum Exploration and Production Law (PNDC Law 84) has been the main legal document used to manage Ghana's petroleum for the past two decades. The law provides the framework for the management of oil and gas exploration, development and production. It defines the basic terms and conditions of any petroleum agreement, spelling out the rights and obligations of each party with appropriate sanctions. There is currently a Petroleum Exploration and Production Bill before Parliament and if passed into a law will replace the PNDC Law 84.<sup>54</sup> According to the Ministry of Energy and Petroleum the new bill is limited in scope and will therefore provide a better legislative framework for exploration and production of petroleum in Ghana.<sup>55</sup>

### **3.5.2 Petroleum Revenue Management Act (PRMA) 2011 Act 815**

The Petroleum Revenue Management Act (PRMA) is a product of the Ministry of Finance and Economic planning, which appears to offer a transparent means by which revenue accruing from the sale of petroleum resources could be safeguarded and utilized in the most equitable manner.<sup>56</sup> The Act (Act 815) enjoins the establishment of a Ghana Petroleum Holding Account to receive oil revenue. Proceeds from this account shall feed three specific Bank of Ghana accounts; the Annual Budget Funding Account (ABFA), Ghana Stabilization Fund, and the Ghana Heritage Fund. Section 21 subsection 5 of the law states that “in order to maximise the impact of the use of the petroleum revenue, the Minister of Finance and Economic Planning shall prioritise any four sectors when planning how to utilise the petroleum revenue”.<sup>57</sup> Section 21, subsection 21 provides in no order of priority, 12 areas where oil revenues should be invested in the absence of

a long term national development plan.<sup>58</sup> This is to ensure that all sectors of the economy benefits from the oil revenue.

### **3.5.3 Petroleum Commission Act (PCA), 2011, Act 821**

The PCA, 2011 (Act 821) originated from the Ministry of Energy and Petroleum. The Act prescribed the establishment of the Petroleum Commission with the objective of regulating and managing the utilization of petroleum resources and to co-ordinate the policies in relation to them. Functions of the Commission, among others, include promoting a sustainable and cost effective petroleum exploration, development and production in order to achieve optimal levels of resources exploitations for the overall benefits of the citizenry. Consequently, the GNPC shall cease to exercise any advisory function in relation to the regulation and management of the utilization of petroleum resources and the co-ordination of policy in relation to that function.<sup>59</sup> The above functions have since been taken over by the Petroleum Commission.<sup>60</sup>

### **3.5.4 Environmental Protection Agency (EPA) Act, 490 of 1994**

The EPA is the main institutions responsible for environmental management in Ghana. It has the mandate of ensuring that the impact of petroleum activities on the environment are minimise. The Petroleum Law and the Petroleum Agreement demand strict adherence to the environmental laws and regulations in Ghana, specifically, the EPA Act 490 and the Environmental Assessment regulation, LI 1652.<sup>61</sup> In addition to the above mentioned environmental requirements, the Petroleum Agreement requires strict adherence to best international oil environmental practices. The Environmental Protection Agency is primarily responsible for regulating the environment and ensuring the implementation of Government policies on the environment.

The law regulating the impact of other activities on fisheries was promulgated in 2002, i.e. the Fisheries Act 625 of 2002. Section 93 of the Act 625 states clearly that “there is a need to present to the Fisheries Commission, a Fisheries Impact Assessment (FIA) before any activity other than fishing can take place in Ghana’s waters.”<sup>62</sup> The law makes reference to the Environmental Protection Agency (EPA) Act which was already in place. The Environmental Impact Assessment (EIA) and the FIA are mutually exclusive. As such it is incumbent on the actors in the oil industry to conduct a comprehensive FIA before they engage in operations that would otherwise have adverse effects on fisheries.

### **3.5.5 National Oil Spill Response System and Contingency Plan**

The Environmental Protection Agency (EPA), realizing the susceptibility of the country to the risk of oil spill due to the transport of oil from surrounding countries to Europe, initiated measures in 1986 to develop a National Oil Spill Contingency Plan.<sup>63</sup> Having started the commercial production of oil in upstream, it is more evident that Ghana stands the risk of oil spill. The Plan provides the framework for coordination of an integrated response, definition of responsibilities, reporting and alerting procedures, means of communication, training and exercises, equipment etc. According to the Executive Director of EPA in 2011, the Agency has developed environmental sensitivity indices along the coast of Ghana based on geographic Information System (GIS).<sup>64</sup> It covers the whole coastline, 96 maps in the Atlas, including other main features. This will help in determination of action required in the event of oil spillage.

### **3.5.6 Local Content and Local Participation Policy**

In order to secure local participation in the oil industry, a Local Content Policy was enacted in March, 2011. It stipulates that within ten years from the inception of a specific project, 90% of services and supplies required by the project must be provided by Ghanaian individuals or companies. Local participation by the Ghanaian private sector will be at a minimum of 5% equity for petroleum licence, permits and contract operators; and for providers of supplies and services it will be at least 10% equity.<sup>65</sup> Allowance for the widest possible distribution among Ghanaian citizens with respect to local private equity participation will be made, and will be maintained. According to the Ministry of Energy, this legislation when passed into law “will ensure that Ghanaians benefit as much possible from the oil and gas find in terms of employment, ownership, control and the provision of goods and services.”<sup>66</sup>

### **3.6 Conclusion**

The history of oil and gas exploration and production in Ghana dates back to the nineteenth century, during the pre-independence era. Several oil companies came on board before and after independence. A law enacted in 1983 establishing the GNPC was passed in 1985. Since then, the GNPC has collaborated with other companies to drill wells and acquire seismic data. In 2004, Komos Energy and E. O. Group made initial contact with GNPC to commenced potential deep water oil and gas exploration in Ghana. Tullow Oil joined later in 2006. A partnership between these two companies eventually resulted in the Oil find in 2007, in two deepwater blocks; Cape Three Points and Tano by Kosmos Energy and Tallow respectively.

The two discoveries referred to as the “Jubilee Field” is an offshore production operated by Tullow as a unitized field. Production has since commenced in December 2010 on Jubilee phase one. Stakeholders, in both the oil and marine fisheries industries have however expressed mixed feelings about the oil find. There are divided opinions among stakeholders as to whether the oil find will be a “blessing” of a “curse”. In response to these concerns, the government has put in place a number of policy and regulatory frameworks to manage and control the oil and gas industry in Ghana.



## Endnotes

---

- <sup>1</sup>Edjekumhene, I., Agyeman, P. O. and Edze, P., Ghana's Emerging Petroleum Industry: What Stakeholders Need To Know. (Accra: Combat Impressions, 2010).
- <sup>2</sup> <http://www.ghanaweb.com/GhanaHomePage/NewsArchives/acticle.php?ID>, accessed on 15 December, 2014.
- <sup>3</sup>Ibid.
- <sup>4</sup> Information from Interview granted at GNPC, 2013.
- <sup>5</sup> Information from Ministry of Energy, 2014.
- <sup>6</sup> Information from Interview granted at GNPC, 2013.
- <sup>7</sup>Edjekumhene, I Agyemang, P.O., and Edze, P, op. cit., p 9.
- <sup>8</sup> Bhandari, Meena (2011). The rush for oil in West Africa – the new wild west? Available on line. Accessed on 15 August 2014.
- <sup>9</sup> Ibid.
- <sup>10</sup> Information from an official of Ministry of Energy 2013.
- <sup>11</sup>ISODEC (2009). Concerns of western region on the oil find. A press release on March 2007. Available at [http://www.isodec.org.gh/press\\_release.php](http://www.isodec.org.gh/press_release.php)? Accessed on 3 May 2014.
- <sup>12</sup> Tullow (2010). Hyedua-1 well, deepwater Tano. Available at <http://www.ghanaweb.com/GhanaHomePage/NewsArchive/artikel.php>? Accessed on 6 November 2014.
- <sup>13</sup>Asamoah, J ,(2009). Making the oil and gas find in Ghana a blessing.
- <sup>14</sup> Information from an official of Energy Commission, 2014.
- <sup>15</sup>Edjekumhene, I Agyemang, P.O. and Edze, op. cit.
- <sup>16</sup> Ibid.
- <sup>17</sup> Information from Energy Commission 2013.
- <sup>18</sup> [www.pennenergy.com](http://www.pennenergy.com) accessed on 21 January 2015.
- <sup>19</sup><http://www.modernghana.com/news/403868/1/oil-companies-urged-to-conduct-fisheries-impact-as.html> accessed on 21 September 2014.
- <sup>20</sup> <http://www.oilgasarticles.com/articles/Oil-Spills-and-Natural-Gas-Flaring-in-Nigeria>
- <sup>21</sup> Ibid.
- <sup>22</sup> Interview granted with a local fisherman in Jomoro, 2014.
- <sup>23</sup> Lincoln, David., (2002). Sense and nonsense – the environmental impacts of exploration on marine organisms offshore Cape Breton. Report submitted to the Public Review Commission, Cape Breton Island, Nova Scotia for the Sierra Club Canada.
- <sup>24</sup>Arbo, Peter., (2006). Fishing in oil in the Barents Sea. Power point presentation. Norwegian College of Fishery Science, Norway. 25 July 2006.
- <sup>25</sup>Quijano, I.D. (2008). Hunger and plunder in the seas: oil and gas exploration causes destruction of marine environment and food security in Central Philippines. November 2008, p. 1-18.
- <sup>26</sup> Lincoln, David (2002), op. cit.
- <sup>27</sup> Ghana News Agency, 2012.
- <sup>28</sup> The international tanker owners pollution federation limited (ITOPF) (2004). Oil spill effects on fisheries. Technical information paper. United Kingdom. 3, p. 1-8.
- <sup>29</sup> Wilson, J. (2010), “ BP oil disaster: What went wrong” Helium. <http://www.helium.com/items/1909742-what-went-wrong-in-the-bp-disaster>.
- <sup>30</sup> The international tanker owners pollution federation limited (ITOPF) (2004), op. cit.
- <sup>31</sup>Ibid.
- <sup>32</sup> Smith, M.G.D. (undated). Holistic environmental management in Statoil. Research activities. A presentation by the Principle Researcher Environment and Climate of the Research Centre, Trondheim. Norway.
- <sup>33</sup>Ibid.
- <sup>34</sup>Patin, Stanislav (1999). Environmental impact of the offshore oil and gas industry. Economitor Publication. 1-448.

- 
- <sup>35</sup> Ibid.
- <sup>36</sup> Information received from interview granted with a local fisherman in Sekondi, 2014.
- <sup>37</sup> Aaron, K. K., (2006). Human rights violation and environmental degradation in the Niger Delta, In: Elizabeth Porter and Baden Offord (eds), *Activating human rights*, Oxford : Barne, New York.
- <sup>38</sup>Darko-Mensah K. O.(2009). Ghana's oil and gas: the people's connection, *Daily Graphic report*.
- <sup>39</sup> Ministry of Energy and Petroleum, 2014.
- <sup>40</sup> Interview with a local community leader, Shama, Western Region. 2014.
- <sup>41</sup> World Bank (2009) "Economy-wide Impact of Oil Discovery in Ghana", *World Bank Report* No.47321-GH. Available on line. Accessed on 30 December 2013.
- <sup>42</sup>Traub-Merz, R., 'Introduction' in R. Traub-Merz and D. Yates, (eds.) *Oil Policy in the Gulf of Guinea: Security & Conflict, Economic Growth, Social Development*, (Germany: Friedrich-Ebert-Stiftung,2004), pp. 9-22.
- <sup>43</sup> Interview with a security analyst at KAIPTC, 2014.
- <sup>44</sup> The 1992 Constitution of the Republic of Ghana.
- <sup>45</sup> Ghana news agency 2009, State of the Nations Address.
- <sup>46</sup> Interview with an official from GNPC, 2014.
- <sup>47</sup>Interview with a senior naval officer, 2014.
- <sup>48</sup> Humphreys, M; Sachs, J.D, &Stiglitz, J.E. 'What is the problem with Natural Resource Wealth', in Humphreys, M., Sachs J.D., and Stiglitz J.E., (eds.) *Escaping The Resource Curse* (New York: Columbia University Press, 2007), pp1-20.
- <sup>49</sup> Interview with a traditional chief, 2013.
- <sup>50</sup> Interview with a local fisherman in Takoradi, 2014.
- <sup>51</sup> Information received from interview with GNPC official, 2013.
- <sup>52</sup> Ibid.
- <sup>53</sup> Official information received from Ministry of Energy and Petroleum, 2014.
- <sup>54</sup>Ghana News Agency (2011). Petroleum exploration and production bill to replace PNDC law 84. Available on line. Accessed on 26.September 2014.
- <sup>55</sup> Ministry of Energy and Petroleum, 2010.
- <sup>56</sup> Ibid.
- <sup>57</sup> Petroleum Revenue Management Act (PRMA) 2011 Act 815.
- <sup>58</sup> *Idem*.
- <sup>59</sup> Ministry of Energy and Petroleum, 2010.
- <sup>60</sup> Ibid.
- <sup>61</sup>Amarfio, Richster (2010). Ghana's oil and gas exploration and the issue of Ballast water. Available at <http://business.peacefonline.com/news/201010/90998.php>, accessed on 30 August, 2014.
- <sup>62</sup> Section 93 of the Fisheries Act 625 of 2002..
- <sup>63</sup>Allotey, Jonathan A. (undated). Environmental management challenges of oil development in Ghana. A presentation by the Executive Director of EPA. Accra, Ghana.
- <sup>64</sup> Ibid.
- <sup>65</sup>Asamoah, J., op. cit.
- <sup>66</sup> Ghana News Agency, 2011.

## CHAPTER FOUR

### SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

#### 4.0 Introduction

This chapter presents the key findings of the research. It points out the negative impact of the oil industry on the marine fisheries industry, if adequate measures are not put in place to regulate the operations of the oil companies. It also identifies potential conflict areas and make recommendations that will enable the two industries coexist and operate in the marine environment with or without minimal conflict.

#### 4.1 Summary of Findings

The oil find has generated mixed feelings among the populace. While some are expectant of the resources facilitating development, others are weary of the negative consequences associated with the resources. Separate publications by the World Bank (WB) and the International Monetary Fund (IMF) gives an estimate of what Ghana is expected to earn in revenue from the Jubilee Field by the year 2029. It is the expectations of stakeholders that the oil find will improve the socio-economic situation of the country.

In spite of these expectations, various concerns have been expressed by key actors in both the oil and fishing industries. The government of the day views the oil find as a resource that will generate revenue and facilitate development. This will surely enhance growth of the economy, create more jobs and improve the lives of the people. Government is therefore not relenting in its

effort to ensure that an enabling environment is created for the realization of these envisaged economic fortunes. In line with this, a number of regulatory frameworks and management policies have been fashioned out to guide the operations and other activities of the oil and gas industry in Ghana and to ensure that their operations do not affect the operations of the fishing industry.

State institutions and agencies such as GNPC, MOEN, the Energy Commission and the Ghana Navy etc, have also perceive the oil find as imposing additional responsibility on them as it comes with new challenges. The multinational oil companies view the oil find as an opportunity to partner the host country to create a win-win situation for mutual benefit of all. They have demonstrated their willingness to development communities in the catchment area of the oil find through their corporate social responsibility. Some communities are already benefited from this initiative.

The traditional chiefs of the local communities in the proximity of the oil find have indicated that the oil find impacts negatively on their communities. They expressed worry about how the exploration and exploitation activities of the oil companies are affecting the fishing industry which has led to a decline in fishing activities and loss capital in their communities. They also indicated that poverty levels have risen as a result of these developments.

The fishermen indicated that their livelihood has been affected by the operations of the oil companies at sea. They reported that there has been proliferation of oil rigs in their fishing grounds with associated restrictions which hamper their fishing operations. They argue that the

oil companies must pay compensations for keeping them out of job. The oil find in Ghana is therefore exhibiting potential multi-level oil related conflict. There are signs of potential conflict at the level of local fishermen verses the International Oil Companies. This is largely due to the perceived differences on issues of livelihood and compensation.

## **4.2 Conclusion**

The discovery of oil off West Cape Three Points in 2007 has created a heightened euphoria, with high expectation that the oil revenue will transform the economy. The citizenry of Ghana in general and that of Western Region in particular may be right about their high hopes of the oil and gas discovery changing their lives for the better. Amidst these heightened hopes and expectations from the people, if the negative impact of oil and gas activities on fisheries is not mitigated, the people might revolt if their livelihood is destroyed. This can lead to a “resource curse” rather than a “blessing” to the communities in particular and the nation as a whole. The oil revenue, if well utilised can facilitate development and improve the lives of Ghanaians in general.

The oil find has increased investor interest and attracted huge financial inflows for development. Multinational Oil Companies are also engaged in some development activities such as constructions, road works, provision of utility services and capacity building as part of their corporate social responsibility. This establishes the link between oil and development. The oil find in Ghana is not only providing developments to the people but could also be a source of conflict if mitigation measures are not put in place to guide the operations of multinational oil

companies vis à vis the fishing industry. Interactions with traditional chiefs and local fishermen revealed that there are already some contentions between actors in the two industries.

If good management systems are put in place by Government to harmonize the operations of both the oil and fishing industries in Ghana, it will go a long way to reduce conflict between stakeholders in the two industries. It will also improve the living standards of the people of the Western Region and by extension the fishermen living in coastal communities in Ghana. Consequently, the positive spill over effect will go a long way to reduce poverty and prevent the any possible endemic social conflicts, which has pervaded most fishing communities in oil producing countries.

There are several international conventions on the conduct of Exploration and Production (E&P) of oil companies. However, depending on the political environment, and as a means of maximizing profit, oil companies would relinquish their environmental responsibilities. It is for this reason that, it is pertinent to note, that the activities of multinational oil companies are negatively affecting the marine fisheries industry in Ghana. The research is underpinned by the theory of political pluralism. Pluralism as a political philosophy is the recognition and affirmation of diversity within a political body, which permits the peaceful coexistence of different interest, convictions and lifestyles.

It is therefore imperative for governmental and non-governmental watchdogs to monitor the activities of exploration and production companies and keep them in check. This would allow for coexistence between the fishermen and oil companies in the marine environment. However, the

Ghana National Petroleum Corporation (GNPC), the leader in petroleum exploration and production activities in Ghana, the Ministry of Environment and Science, the Environmental Protection Agency and the Ministry of Energy and Petroleum should be commended for their efforts so far in supervising the exploration and development stage of the Jubilee Field.

### **4.3 Recommendations**

In view of the findings and the conclusions, the following are recommended:

#### ***Management of Expectations***

Since the oil find in 2007, the country has been greeted with great euphoria. It is the hope of many Ghanaians that the oil find will rake in revenue that will improve their standards of living. Additionally, the traditional chiefs and local fishermen are highly expected that, huge compensations would be paid to them in lieu of any possible loss of livelihood resulting from the operations of the oil companies. These high expectations of the people, especially the fishermen should be managed to avoid any potential conflict. In view of this, they government should put in place regulatory measures to control the operations of the oil companies vis-à-vis the fishing industry. Comprehensive education programmes should also be instituted to well inform the local communities on measures put in place to protect their livelihood.

#### ***Alternative Livelihoods***

The differences between the fishermen and international oil companies over the livelihood and compensation issues should not be swept under the carpet because of its potential for conflict. In addition to this is the fact that a lot of promises have been made to the people living in the catchment area of the oil find as to job creation and alternative livelihood programmes. A space

of engagement should be established, and development of programmes targeted at creating alternative sources of livelihood for these fishermen and women. There are possible alternative means of livelihood and that should be invested in to give economic empowerment to the local people as a source of life. The government should create the enabling environment and support the fishermen to re-engage in inland fish farming. In areas without inland water bodies, conscious effort should be made to create fish ponds for the fishermen to continue to ply their fishing trade. In addition to these interventions by the government, the protection, maintenance of the fishing industry, the fishermen and their communities should be the priority of the oil companies.

### ***Oil Fund Management***

To avert the fears of the resources curse, there must be deliberate effort at preventing the “Dutch Disease”, ensuring transparency in the management of the oil revenue. The management and regulatory policies being put in place by government and other stakeholders to ensure that the oil revenue is well utilized should be enforced judiciously. For the revenue from the oil find to translate into development and job creation for the whole country, it requires that the oil revenue be integrated into other parts of the economy, particularly the agriculture and the manufacturing industry. This will create jobs for the growing unemployed youth.

### ***Development of Institutions***

Job creation, poverty reduction and economic development are intricately-linked. In this regard, establishing strong institutions to regulate and monitor the oil and gas industry is very critical. Ghana has been able to commit herself to democratic governance since 1992. The three arms of

government as well as all state institutions have been empowered with the necessary legislation. It is expected that the administration of justice would prevent corrupt practices within the oil and gas industry. This would allow Ghanaians to realize the full benefits of the oil find. Government should ensure that institution with oversight responsibility in the oil and gas sector are well resourced and personnel well trained to perform their duties.

### ***Provision of Infrastructure***

Provision of infrastructure in the catchment areas of the oil find is very critical. The government has already started the Takoradi harbour expansion project which will include a bigger area for local fishermen to use for landing fish. The construction of this facility is expected to draw most of the local fishermen within the Ahanta West District away from the area close to the oil rigs. Dilapidated road network is one major problem that the local inhabitants have had to contend with over the years. For any economic project to succeed, the roads have to be given a face-lift. According to government, immediately after the Takoradi harbour expansion project, the major roads within the Sekondi-Takoradi metropolis and its environs will be reconstructed. This will increase economic activities and also boost tourism development in the region. Also for small scale industries to take off smoothly, the area should be hooked onto the national grid as a matter of urgency. Government and stakeholders should endeavour to provide these communities with other essential services such as health posts, police stations and post offices to facilitate socio-economic development.

## BIBLIOGRAPHY

### A. BOOKS

Cowen, M.P., and Shenton R.W., *Doctrines of Development*. (London and New York: Routledge Publishers, 1996)

Dibua, J. J., *Modernization and the Crises of Development in Africa: the Nigerian Experience* (Aldershot: Ashgate Publishers, 2006).

Edjekumhene, I., Agyeman, P. O. and Edze, P., *Ghana's Emerging Petroleum Industry: What Stakeholders Need to Know*. (Accra: Combat Impressions, 2010).

Gab, Barzilai *communities and law: Politics and Culture of Legal Identities*. (Ann Arbor: University of Michigan Press, 2003)

Humphreys, M; Sachs, J.D, & Stiglitz, J.E. "What is the problem with Natural Resource Wealth" in Humphreys, M., Sachs J.D., and Stiglitz J.E., (eds.) *Escaping the Resource Curse* (New York: Columbia University Press, 2007).

Imobighe, T.A., "Conflict in the Niger Delta: A Unique Case or a 'Model' for Future Conflicts in other Oil-Producing Countries?" in Traub-Merz, R. and Yates, D., (eds) *Oil Policy in the Gulf of Guinea; Security and Conflict, Economic, Social Development* (Germany: Friedrich – Ebert-Stiftung, 2004).

Karl, T. L., *The Paradox of Plenty: Oil Booms and Petro States*. (Berkeley: University of California Press, 1997).

Kimball, D, *The United Nations convention on the Law of the Sea: A Framework for Marine Conservation* (Zurich: Global Aspects Press, 1994).

Mikesell, R.F., Bartsch, W.H., et al, *Foreign Investment in the Petroleum and Mineral Industries: Case Studies of Investor-Host Country Relations*. (Baltimore: The John Hopkins Press, 1971).

Murshed, S. M., *Explaining Civil War: A Rational Choice Approach*. (Cheltenham: Edward Elgar Publications, 2010).

Odotei, I., *The Artisanal Marine Fishing Industry in Ghana: A Historical Overview*. (Accra: Institute of African Studies, 2002).

Robbins, S.P. and Judge, T.A., *Organizational Behaviour*. (New Jersey: Pearson Prentice Hall, 2007).

Soros, G., 'Forward' in M. Humphreys, J. D. Sachs, and J. E. Stiglitz, (eds.) *Escaping The Resource Curse*. (New York: Columbia University Press, 2007).

Stevens, Paul, (2003). Resource impact – curse or blessing? A literature survey. Centre for Energy, Petroleum, and Mineral Law and Policy. University of Dundee, Dundee. United Kingdom.

Stiglitz, J.E., 'What is the role of the State?', in M. Humphreys, J.D. Sachs, and J.E. Stiglitz (eds.), *Escaping The Resource Curse*. (New York: Columbia University Press, 2007).

Traub-Merz, R., 'Introduction' in R. Traub-Merz and D. Yates, (eds.) *Oil Policy in the Gulf of Guinea: Security & Conflict, Economic Growth, Social Development*, (Germany: Friedrich-Ebert-Stiftung, 2004).

## **B. JOURNAL ARTICLES**

Cabrales, A. Esther, H., (2010). "The quality of political institutions and the curse of natural resources." *The Economic Journal*.

Dieterich, J., 'The Gulf of Guinea and the Global Oil Market: Supply and Demand', in R. Traub-Merz and Yates D., (eds) *Oil Policy in the Gulf of Guinea: Security & Conflict, Economic Growth, Social Development*. (Germany: Friedrich-Ebert-Stiftung, 2004).

Dunning, T. and Wirpsa, L., "Oil and the Political Economy of Conflict in Columbia and Beyond: a Linkages Approach," *Geopolitics*, Vol. 14 No. 48, 2004.

Duruigbo. E., "The World Bank, Multinational oil Corporations, and the Resources Curse," *The journal of International Economic Law*, Vol. 26, No. 1, 2005.

Miller, Suemas, 'Corruption', *The Stanford Encyclopaedia of philosophy* (Spring 2011 Edition). North, D.C., 'Location Theory and Regional Economic Growth', *The Journal of Political Economy*, Vol. LXIII, No. 3, 1955.

Patin, Stanislav (1999). Environmental impact of the offshore oil and gas industry. *Economitor Publication*. 1-448.

Walker, Barbara. L. E., (2002). Engendering Ghana's seascape: Fanti fish traders and marine property in colonial history. *Society and Natural Resources*. 15: 5, 389-407

### C. DOCUMENTS AND REPORTS

Allotey, Jonathan A. (undated). Environmental management challenges of oil development in Ghana. A presentation by the Executive Director of EPA. Accra, Ghana.

Arbo, Peter., (2006). Fishing in oil in the Barents Sea. Power point presentation. Norwegian College of Fishery Science, Norway. 25 July 2006.

Asamoah, J (2009). Making the oil and gas find in Ghana a blessing.

Bank of Ghana (2008) The Fishing Sub-Sector and Ghana's Economy, Research Department, Bank of Ghana, September 2008, ISBN: 0855-658X.

Collier, P., &Hoeffler, A., 'Greed and Grievance in Civil War'. Oxford Economic Papers, 2004, 56, 563-595.

Connolly, William E., The Ethos of pluralisation. University of Minnesota press, 1995.

Directorate of Fisheries, (2005a); 'Compilation of National Fish Production, Imports, Exports and Consumption in Metric Tonnes (2001-2004)'. Directorate of Fisheries, MoFI Technical Report. Accra, Ghana.

Fisheries Act, 2002 (Act 625), Government of Ghana Publisher.

Ghana Jubilee Field Phase 1 Development: Draft Environmental Impact Statement Submitted by Tullow Ghana Limited, 2009.

Ghana's Oil and Gas Watch, 2010.

Human Development Report 2010.

Lawson, R. 1968. "The transition of Ghana's fishing industry from a primitive to a mechanized industry," Transactions of the Historical Society of Ghana 9:90-104.

Manteaw, S., 'Oil's Challenges to Ghana's Democratic Development', Institute of Economic Affairs monographs No. 19. Accra: Ghana, 2009.

Taxing Natural Resources: Some Recent Ghanaian Experiences, Paper presented at IMF Workshop on Revenue Mobilization and Development by Seth Terkper, Deputy Minister for Finance Economic Planning, Accra, April 17 – 19, 2011.

The 1992 Constitution of the Republic of Ghana.

The international tanker owners pollution federation limited (ITOPF) (2004). Oil spill effects on fisheries. Technical information paper. United Kingdom. 3, 1-8.

Wagenar, O., 'Revenue Management case studies: Southeast Asia' in GTZ (eds.) GEITI: Oil and Gas Revenue Management, International Experiences. Ministry of Finance and Economic Planning (2008).

#### **D. UNPUBLISHED WORK**

Agbonifo, J., 'Development as Conflict: Ogoni Movement, the State and Oil Resources Curse in the Niger Delta, Nigeria'. PhD dissertation, International Institute of Social Studies of Erasmus University Rotterdam, The Hague, 2009.

Aratua I Z, "Ghana's Oil Industry: the State, Operators and Local Frontier Communities." Unpublished MA Dissertation, International Affairs, University of Ghana, 2012.

Eghyir, I. K., The impact of Oil and Gas activities on Fisheries in the Western Region of Ghana. Master's Degree thesis in International Fisheries Management, Norwegian College of Fisheries Science.

Kapela, J.M., 'Ghana's New Oil: Cause for Jubilation or Prelude to the Resource Curse,' Master Master Thesis, Norwegian University of Life and Sciences.

Manu, D. A. K., The Emerging Oil Industry in Ghana: Socio-Economic and Environmental Impact on the people of Cape Three Point.

#### **E. INTERNET SOURCES**

Amarfio, Richster (2010). Ghana's oil and gas exploration and the issue of Ballast water. Available at <http://business.peacefmonline.com/news/201010/90998.php>, accessed on 30 August, 2014.

Badgley, Christiane (2011). Fishing and the offshore oil industry: a delicate imbalance. Available on line: <http://www.iwatchnews.org/2011/06/10/4859/fishing-and-offshore-oil-industry-delica.../>. Accessed on 23.January 2014.

<http://www.wfp.org/contet/ghanas-poverty-line-reduces-significantly>, accessed 18 May 2014.

<Http://plato.stanford.sdu/archives/spr2011/entries/corruption/> accessed 25 March 2014.

<http://way.net/dissonance /power.html>, accessed 16 October 2014.

<http://allafrica.com/stories/201105180164.html>, accessed 22 May 2014.

[http://en.wikipedia.org/wiki/Rationa\\_choice\\_theory](http://en.wikipedia.org/wiki/Rationa_choice_theory), accessed 6 September 2014.

[http://www.ppsw.rug.nl/lindenb/documents/articles/1992/lindenb\\_method\\_of\\_decreasing\\_abstraction.pdf](http://www.ppsw.rug.nl/lindenb/documents/articles/1992/lindenb_method_of_decreasing_abstraction.pdf),6 September 2014.

<http://www.en.wikipedia.org/Ghana#Geography> ,accessed on 22 August 2014.

<http://www.ghanaweb.com>,accessed on 23 August 2014.

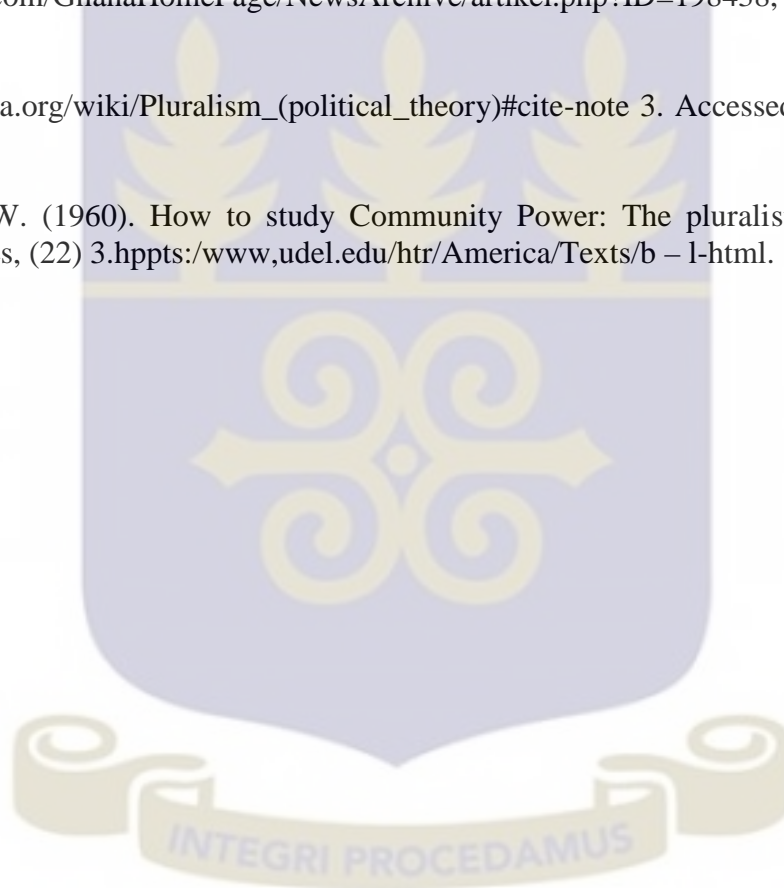
<http://en.wikipedia.org/wiki/petroleum>, accessed on 20 September, 2014.

<http://www.ghanaoilandgasonline.com> accessed on 1 October 2014.

<http://ghanaweb.com/GhanaHomePage/NewsArchive/artikel.php?ID=198438>, accessed on 1 October, 2014.

[http://en.wikipedia.org/wiki/Pluralism\\_\(political\\_theory\)#cite-note\\_3](http://en.wikipedia.org/wiki/Pluralism_(political_theory)#cite-note_3). Accessed on 20 December 2014

Polsby, Nelson W. (1960). How to study Community Power: The pluralist Alternative. *The Journal of Politics*, (22) 3.<https://www.udel.edu/htr/America/Texts/b-1.html>.



## APPENDICES

### APPENDIX 1

#### SAMPLE INTERVIEW GUIDE FOR GHANA NATIONAL PETROLEUM COOPERATION

I am conducting a research into the effects of oil and gas activities on the marine fisheries industry in Ghana. The objective among others is to examine the role the marine fishing sector has played in the socio-economic development of Ghana; Identify the challenges posed by oil and gas activities to the marine fishing sector in Ghana and Identify possible area of cooperation through which the two industries can coexist peacefully and mutually benefit from the sea environment without recourse to conflict. It will also make recommendations based on the findings which would contribute to academic discourse. Your response would be treated with high sense of confidentiality.

1. What is the role of GNPC in the oil and gas industry?
2. What institutional infrastructures exist or are been developed for the oil industry?
3. Are these institutions strong enough to discharge their duties?
4. How many international oil companies (IOCs) are currently licensed to explore oil in Ghana? Please name them.
5. Has there been any violation of the rules governing oil explorations by any of the IOCs? If yes, how has your organization handled these violations?
6. Has there been oil exploration in Ghana prior to the discovery of the Jubilee field.
7. What is the statistics of oil production at the moment?
8. What is the quantity and value of oil expected to be produced by the end of the year and subsequent years?
9. What is the current state of affairs between GNPC and Kosmos Energy with respect to the sale of the latter's interest in the Jubilee field?
10. What are the current legislations on oil?
11. How was the contract between GNPC and oil companies written?

12. How many service companies are currently working in the oil industry and what are their names?
13. How are these service companies licensed and their operations regulated?



## APPENDIX 2

### SAMPLE INTERVIEW GUIDE FOR MINISTRY OF ENERGY AND PETROLEUM

I am conducting a research into the effects of oil and gas activities on the marine fisheries industry in Ghana. The objective among others is to examine the role the marine fishing sector has played in the socio-economic development of Ghana; Identify the challenges posed by oil and gas activities to the marine fishing sector in Ghana and Identify possible area of cooperation through which the two industries can coexist peacefully and mutually benefit from the sea environment without recourse to conflict. It will also make recommendations based on the findings which would contribute to academic discourse. Your response would be treated with high sense of confidentiality.

1. How would you describe the euphoria that has greeted the announcement of oil and gas discovery along the Coast of Ghana?
2. What institutions are required for a successful production of oil?
3. What is the role of MOEN with respect to the oil industry?
4. How many wells have so far been drilled?
5. When do we expect to have full production of Gas?
6. How would you describe the relationship between the MOEN and other stakeholders ( ie oil companies, GNPC, Ministry of Environment, EPA and local fishermen? (Illicit comment on each of these stakeholders)
7. Has there been any engagement between government and the local fishermen, and what form was this engagement?
8. What are the proposed additional bills yet to be passed by parliament to augment the existing laws?
9. Are these legal frameworks so far being adhered to by the oil companies? In the event of any violations, do you have the capacity to sanction the defaulting companies?
10. Do the Ministry has in place a contingency plan, mechanism and structures to be activated to salvage a situation in the event of any oil spillage like the one which occurred in the Gulf of Mexico?

11. What is the bone of contention between Ghana and Cote D'Ivoire and how is this case been handled?



**APPENDIX 3**

**SAMPLE INTERVIEW GUIDE FOR TULLOW OIL**

I am conducting a research into the effects of oil and gas activities on the marine fisheries industry in Ghana. The objective among others is to examine the role the marine fishing sector has played in the socio-economic development of Ghana; Identify the challenges posed by oil and gas activities to the marine fishing sector in Ghana and Identify possible area of cooperation through which the two industries can coexist peacefully and mutually benefit from the sea environment without recourse to conflict. It will also make recommendations based on the findings which would contribute to academic discourse. Your response would be treated with high sense of confidentiality.

1. How would you respond to the high expectations of Ghanaians about this discovery?
2. What percentage of exploitation rights has Tullow in the Jubilee field and any other fields?
3. How will you describe your relationship with government and GNPC?
4. Has there been engagement with the fisher folks so far and how adequate is this engagement?
5. Information received indicates that fishermen are prohibited from fishing within a certain radius around the oil Rig. What is this radius and why?
6. It is suggested that the oil exploration would affect the activities of local fisher folks. What would be your response to suggestions that they should be compensated?
7. Which other country has Tullow oil operated before?
8. What are some of the challenges you are facing and how do you intend to overcome them?
9. What is the value of the oil to be produced?
10. From your perspective, what do you think Ghana stands to gain?

**APPENDIX 4**

**SAMPLE INTERVIEW GUIDE FOR MR ERNEST LARTEY - CONFLICT EXPECT  
(KOFI ANNAN INTERNATIONAL PEACEKEEPING AND TRAINING CENTRE)**

I am conducting a research into the effects of oil and gas activities on the marine fisheries industry in Ghana. The objective among others is to examine the role the marine fishing sector has played in the socio-economic development of Ghana; Identify the challenges posed by oil and gas activities to the marine fishing sector in Ghana and Identify possible area of cooperation through which the two industries can coexist peacefully and mutually benefit from the sea environment without recourse to conflict. It will also make recommendations based on the findings which would contribute to academic discourse. Your response would be treated with high sense of confidentiality.

1. How do you access the people's aspirations and perceptions of the oil boom in Ghana?
2. Are all the stakeholders in the oil and gas industry been engaged in the management of the oil and gas industry?
3. How will you evaluate the institutional infrastructure in place now?
4. How will you describe the relationships between all the stakeholders within the oil industry?
5. How would you assess the activities of the IOCs (ie Kosmos Energy, Tullow oil etc)) operating in the country?
6. How would you describe government's commitment in the oil industry?
7. Do you think the citizenry have been central in all the negotiations within the industry?
8. Currently, what are civil society's expectations and fears?

**APPENDIX 5**

**SAMPLE INTERVIEW GUIDE FOR NANA KWESI AGYEMAN IX  
(VICE PRESIDENT OF WESTERN REGIONAL HOUSE OF CHIEFS)**

I am conducting a research into the effects of oil and gas activities on the marine fisheries industry in Ghana. The objective among others is to examine the role the marine fishing sector has played in the socio-economic development of Ghana; Identify the challenges posed by oil and gas activities to the marine fishing sector in Ghana and Identify possible area of cooperation through which the two industries can coexist peacefully and mutually benefit from the sea environment without recourse to conflict. It will also make recommendations based on the findings which would contribute to academic discourse. Your response would be treated with high sense of confidentiality.

1. How close is your community to the Jubilee oil field?
2. What is the feeling of the people about the news of the oil find?
3. What is the main occupation of your people and how would this be affected by the new oil find?
4. What are the concerns of your people about the oil find?
5. Have you been engaged with other players in the oil industry?
6. What in your view has not been done so well so far?
7. What in your view has been done so well so far?
8. What has been the nature of land acquisition?

**APPENDIX 6**

**SAMPLE INTERVIEW GUIDE FOR NANA KOBINA NKETIA V  
(OMANHENE OF ESSIKADO TRADITIONAL AREA)**

I am conducting a research into the effects of oil and gas activities on the marine fisheries industry in Ghana. The objective among others is to examine the role the marine fishing sector has played in the socio-economic development of Ghana; Identify the challenges posed by oil and gas activities to the marine fishing sector in Ghana and Identify possible area of cooperation through which the two industries can coexist peacefully and mutually benefit from the sea environment without recourse to conflict. It will also make recommendations based on the findings which would contribute to academic discourse. Your response would be treated with high sense of confidentiality.

1. Is your constituency part of the 6 districts bordering the jubilee field?
2. How would you describe the expression of your people in respect of the oil find?
3. Do you think there are no benefits to extractive industry activity?
4. How does Ghana ensure that the oil find benefits its people as well as the investors who put money into this venture?
5. What is the expected role of political leadership in this regard?
6. In your view do you think there has been enough engagement among the people, your good self, government and oil companies?
7. How would you describe the nature of land acquisition within the catchment area bordering the Jubilee field?
8. What do communities in the Western Region expect from the oil industry?
9. Do you think we are on the right track with oil and gas or are there things that you think we should be re-thinking?

## APPENDIX 7

### SAMPLE INTERVIEW GUIDE FOR NATIONAL PETROLEUM AUTHORITY (NPA)

I am conducting a research into the effects of oil and gas activities on the marine fisheries industry in Ghana. The objective among others is to examine the role the marine fishing sector has played in the socio-economic development of Ghana; Identify the challenges posed by oil and gas activities to the marine fishing sector in Ghana and Identify possible area of cooperation through which the two industries can coexist peacefully and mutually benefit from the sea environment without recourse to conflict. It will also make recommendations based on the findings which would contribute to academic discourse. Your response would be treated with high sense of confidentiality.

1. What is the role of parliament in the oil and gas industry?
2. Are the existing institutional infrastructures adequate for the commencement of oil and gas production?
3. How do you assess the legal regimes regulating the oil and gas industry?
4. What are the challenges that parliament may face in the discharge of its duties with respect to the oil and gas industry?
5. What is the relationship between Parliament and other stakeholders such as GNPC, Energy Ministry, Oil Companies, Ministry of Environment etc?
6. Do parliament have the technical knowhow and capacity to craft regulatory framework that will guide the operations of the oil and gas industry?
7. Is there any legislation to address the needs of communities that may be affected socially and environmentally by the oil exploration activities?

**APPENDIX 8**

**SAMPLE INTERVIEW GUIDE FOR THEGHANA NAVY**

I am conducting a research into the effects of oil and gas activities on the marine fisheries industry in Ghana. The objective among others is to examine the role the marine fishing sector has played in the socio-economic development of Ghana; Identify the challenges posed by oil and gas activities to the marine fishing sector in Ghana and Identify possible area of cooperation through which the two industries can coexist peacefully and mutually benefit from the sea environment without recourse to conflict. It will also make recommendations based on the findings which would contribute to academic discourse. Your response would be treated with high sense of confidentiality.

1. What is your assessment of the euphoria surrounding the oil find?
2. What has been the relationship between the fishermen and the Ghana Navy and how do you see this relationship being affected by the advent of the oil?
3. What in your view are the challenges that this oil find presents to the Ghana Navy?
4. How will you describe the state of readiness of Ghana even as production commences by the end of this year?
5. Does the Navy have the capacity to meet the new challenges of the oil find?
6. Are there any comprehensive policies by the Ghana Navy to address the challenges of the oil industry?
7. What in your view is the reaction of the communities bordering the Jubilee Field?
8. Do you think the claim by fishermen with regards to compensation is legitimate?
9. What will be your comment on the water boundary dispute between Ghana and Ivory Coast?
10. What in your view is the way forward?

**APPENDIX 9**

**SAMPLE INTERVIEW GUIDE FOR THE CHIEF FISHERMAN – SEKONDI,  
TAKORADI, ELMINA, CAPE COAST AND TEMA**

I am conducting a research into the effects of oil and gas activities on the marine fisheries industry in Ghana. The objective among others is to examine the role the marine fishing sector has played in the socio-economic development of Ghana; Identify the challenges posed by oil and gas activities to the marine fishing sector in Ghana and Identify possible area of cooperation through which the two industries can coexist peacefully and mutually benefit from the sea environment without recourse to conflict. It will also make recommendations based on the findings which would contribute to academic discourse. Your response would be treated with high sense of confidentiality.

1. Have you heard of any oil discovery in Ghana?
2. How did you receive the news of the oil discovery at the Jubilee Field?
3. How do you think the activities of the oil find will affect your fishing activities?
4. Have any of the oil companies visited your communities?
5. Has any government official visited your community?
6. In your view have the community been engaged in any discourse?
7. What are some of the problems you are encountering in your world?
8. What do you suggest should be done for you?
9. What is your take on the buffer zone (no fishing zone) restriction on fishing around the Rig?
10. What do you think is the way forward?