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Sustainable Development in Ghana's Petroleum Industry: An Analysis of the Resource Curse

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SUSTAINABLE DEVELOPMENT IN GHANA'S PETROLEUM INDUSTRY:
AN ANALYSIS OF THE RESOURCE CURSE

BY

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BSc. Biology, California University of Pennsylvania, 2008

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Abstract

SUSTAINABLE DEVELOPMENT IN GHANA'S PETROLEUM INDUSTRY: AN ANALYSIS OF THE RESOURCE CURSE

Jerry Ntakrah

Environmental Applied Science and Management, 2011

Master of Applied Science, Ryerson University

According to the 'resource curse,' countries with large endowments of natural resources perform worse than countries who are less endowed. So while Ghana's recent oil discovery presents tremendous opportunities to assist in poverty alleviation, this so-called curse has been unfortunately attributed to economic decline, democratic breakdown, environmental degradation, and civil unrest. Therefore this thesis seeks to evaluate Ghana's preparedness in dealing with effects of new oil wealth and the impacts of oil exploitation on its environment and society. Interviews with members of civil society organisations, NGOs and government personnel revealed tremendous deficits and constraints in environmental protection, the rule of law, and political will; all of which will be further challenged by the onset of oil development in Ghana. Observations from interviewees, as well as the findings of contextual research provide the foundation for the goal of the research, which is to understand how prepared Ghana is to manage its future petroleum industry so that it encompasses environmental stewardship, economic development and social responsibility.

Thesis Outline

Author's declaration

Abstract

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Abbreviations and Acronyms

APP	Ankara Petrochemical Plant
BPD	Barrels Per Day
CSO	Civil Society Organization
EIA	Environmental Impact Assessment
EITI	Extractive Industries Transparency Initiative
EPA	Environmental Protection Agency
EPC	Environmental Protection Council
FPSO	Floating Production Storage and Offloading Vessel
FOE	Friends of the Earth
GIMPA	Ghana Institute of Management and Public Administration
GoG	Government of Ghana
IFI	International Financial Institutions
IMF	International Monetary Fund
ISODEC	Integrated Social Development Center
MDGs	Millennium Development Goals
MNC	Multinational Corporation
NCEA	Netherlands Commission for Environmental Assessment
NEAP	National Environmental Action Plan
NGO	Non-Governmental Organization
NRF	Natural Resource Funds
NPP	New Patriotic Party
NDC	New Democratic Party
OPEC	Oil Producing Exporting Countries
PWYP	Publish What You Pay
ISO	International Society of Standardization
WACCAM	Wassa Association of Communities affected by Mining
WAPG	West Africa Gas Pipeline

WCED World Commission on Environment and Development

“What is likely to happen if African countries...exploit oil in the context of very weak political and economic institutions? What is likely to happen is that oil will exacerbate profound political and economic crises.... It will lead to a reduction of the welfare of people in oil exporting countries. It will provoke violence and unrest. It will lead to the violation of rights. It will lead to the destruction of the environment. It will buffer authoritarian rule. That’s what will happen, again, if (oil investment) is inserted in weak political and economic and social institutions without interventions to see that something to the contrary occurs.”

**Professor Terry Karl, Stanford University
(African Oil Policy Initiative Group, 2002)**

1.0 - Introduction

The oil industry is among the most lucrative on the world commodity market and encompasses all the activities of crude oil and natural gas exploitation, production and sale. The industry is made of the following three components: the downstream sector, which refines and markets oil, gas and other derivatives; a midstream or transportation sector; and an upstream sector, responsible for the exploration, drilling and extraction. According to Kloff and Wicks (2004), the oil and gas industry affects the environment and people in three ways: through climate change, operations on land and at sea, and through impacts on national economies which can both be positive and negative. Unfortunately, for the countries in the developing world, the negative economic, social and environmental impacts have far exceeded the potential benefits of finding oil (Auty, 1999, Harris, 2002). Homer-Dixon (1994), as shown in figure 1, describes how increased environmental scarcity, often resulting from oil exploitation and generally from the affects of population growth, decreased quality of renewable resources, and unequal resource access, leads to adverse social effects which results in, for example, ethnic conflicts, weakened states and decreased economic productivity.

Moreover, the amounts of revenue from the extractive industries (mining and oil operations) provide national governments with great opportunities to enhance the per capita wealth, health and opportunity of its population (Schubert, 2007). However, according to Collier (2007), perhaps the greatest disadvantage to the world's "bottom billion,"¹ has been the discovery of oil in their countries; what he calls the "natural resource trap." This is because "oil can be a force for development or it can be a major impetus for war" (African Oil Policy Initiative Group, 2002). Severe environmental degradation and socioeconomic impacts have been associated with oil exploitation, and these impacts have unfortunately had their worst effects on the African continent (Table 1).

Table 1: Primary Environmental Impacts of Oil Exploitation			
Stages of Oil Development	Activity	Physical Impact	Consequence of Impact
Seismic Survey	•Sound readings to detect oil deposit location and quantity	•Noise •Dust •Increased traffic	• Aesthetics (flares) • Odour • Reproductive disorders in aquatic animals
Exploration	•Drilling	•Greenhouse gases (methane, ethane and other hydrocarbons) •Trace amounts of toxic chemicals •Soil contamination around wells	• Odor • Contamination of waters • Climate change

¹ The "Bottom Billion" represent the world's lowest income population which live in countries with severe economic and political problems and persistent poverty.

Table 1: Primary Environmental Impacts of Oil Exploitation			
Stages of Oil Development	Activity	Physical Impact	Consequence of Impact
Development And Production	•Extraction, Storage and Transportation	<ul style="list-style-type: none"> •Explosive potential of spills •Habitat destruction •Ground/surface water contamination •Gas Flaring 	<ul style="list-style-type: none"> •Aesthetics (stained landscape, dead vegetation) • Loss of biodiversity • Habitat loss • Harmful for local fishing trade and tourism industry •Acid rain •Climate change •Health effects
Decommissioning or Abandonment	•Physical Closure or Abandonment of Development Structures	•Contaminated soil and surface waters from drips and leaks	<ul style="list-style-type: none"> •Aesthetics (production facilities), odour •Endangered fish

(Harris et al., 2002)

For instance, many of the resource-rich nations in Africa have been unable to counter the oscillating economic effects due to the volatility of the oil commodity. They typically have not managed the boom and bust cycles associated with inherent price fluctuations of oil. Thus, during the boom phase (resulting from increased production or increases in the world prices of oil), undisciplined governments have often succumbed to the temptation to collateralize future oil windfall and borrow massive amounts of money from international lending organizations (Collier, 2007, Humphreys et al., 2007, Auty, 1988). “The swing from big oil and borrowing, to little oil and repayment” (Collier, 2007), constitutes the bust phase of exploitation; when dwindling revenue from oil can no longer sustain national budgets and domestic spending. This has exacerbated severe conditions of poverty and has lead to a debt crisis in many oil-producing nations.

According to Transparency International (2008), sixty percent of the world's poorest people live in countries where resource extraction dominates the economy. Although most constitutions grant citizens the exclusive ownership to national natural resources, oil wealth has very rarely trickled down to the people who need it most. As such, the extractive industries in developing countries have historically been opposed to the human rights of indigenous people, their opportunities for social development, the protection of their natural environment, and their ability to earn a living from natural resources (Kloff & Wicks, 2004). Meanwhile governments and multinational corporations reap most of the benefits of export revenue, thus compromising the goals of sustainable development (Auty, 1999).

The preceding outcomes have led to a wealth of literature regarding the 'resource curse' phenomenon and the debate regarding whether the presence of natural resources is beneficial or adverse to host communities. One of the newest countries to enter the world's oil and gas industry and this longstanding debate is the nation of Ghana. According to Breisinger et al. (2009), the political and economic stability of Ghana have thus far made it a frontrunner in Africa. Nonetheless, if the country is to avoid the daunting legacy of oil exploitation seen in places such as Nigeria, Gabon, Equatorial Guinea and Angola, it will need to address many areas in its petroleum governance and its environmental management.

1.1 - Purpose

The purpose of this study is to evaluate the preparedness of Ghana to manage its new oil industry with respect to the environmental and social impacts and then to make

recommendations on steps it may take to establish a sustainable and safe petroleum industry. As well, it will offer suggestions for Ghana's government and its civil society to respond to the challenges of managing its future petroleum industry to encompass environmental stewardship, economic development and social responsibility. The objectives of this study are therefore to:

- To establish the strength of the “resource curse” hypothesis and its effects in developing countries.
- Assess the real and potential problems of managing oil exploitation in Ghana, particularly relating to the natural environment.
- Offer suggestions to help improve the country's environmental management, social responsibility and economic development relating to its upstream petroleum sectors.

1.2 - The Organization of the Study

This study is composed of ten chapters. Chapter one introduces the problem and objectives of the study. Chapter two presents the methodology used in conducting the research. The central theme of the study, as well as the literature review, is presented in chapter three. Chapter four introduces Ghana's oil discovery and the challenges it faces in dealing with exploiting oil. Chapter five presents the history, constraints and challenges of environmental management in Ghana and its impacts on oil development. Chapter six presents the results and discussion of the study based on the interviews and other findings during the case study. The recommendations from this study are presented in chapter

seven. In the concluding chapter, Chapter eight, research contributions, limitations of the research, and future considerations are presented.

2.0 - Methodology

2.1 - Central research question

In 2011, Ghana was ranked, according to IMF calculations on Gross GDP, as the fastest growing economy in the world². This is likely due to the tremendous oil windfall which will soon be added to an already promising economy fueled by primary commodity exports in Gold and Cocoa. The introduction of oil, however, leads to many questions and an opportunity to study how well prepared Ghana is to responding to the many effects associated with it. Therefore, the central research question this study asks is: *“Is Ghana prepared to deal with its new oil wealth and the environmental and social effects that have been associated with oil exploitation in Sub-Saharan Africa?”*

2.2 - Research sub-questions

Several secondary questions follow from the central research question. They include the following:

- *Has Ghana developed mechanisms to ensure that the oil wealth helps alleviate poverty and achieve sustainable development?*
- *Does Ghana possess adequate environmental management procedures and governance to aid in protecting the society and the environment against the challenges of exploiting oil?*
- *How can environmental management procedures; (the complement of laws, regulations, and institutions relating to environmental issues) aid in protecting Ghana’s environment against oil exploitation?*

2.3 - Research Design

The study involved the review of peer-reviewed literature regarding sustainability issues in the oil and gas industry as well as an analysis of the government documents

² The data points are derived from IMF calculations on GDP Growth in constant prices in the national currency (not converted to US dollars).

relating to Ghana's management of the industry (the technical research design of the study is illustrated in Figure 2). These documents included the Petroleum Revenue Management Bills, The Petroleum Exploration and Production Bill and The Rights to Information Bill, as well as documents written on behalf of Ghana's citizens by civil society organizations (CSO) that were directed to the government. The preliminary investigation of these bills and scientific literature utilized online resources that provided essential contextual background and foundational knowledge for the main research method that was used in this study.

The interview protocols established by Kvale (2007) and Krippendorff (1980) helped to organize the structure and data gathering of the interviews, the main research method utilised in this study. The semi-structured nature of these interviews meant that the themes of the questions were consistent across interviews, however, the knowledge of each individual and the responses to preplanned questions (section 2.4) helped direct the specific line of questioning for each participant. Moreover, the interviews were conducted with representatives from various organizations involved in Ghana's budding petroleum industry. Direct communication was made with individuals who are involved with the design and implementation of environmental regulations and policies, as well as other stakeholders and concerned citizens, to assess the application of existing governance systems to the petroleum industry. For the most part, these interviews took place in public areas of the participants choosing, and were approximately thirty minutes in length. All interviews were recorded using an audio recorder and key themes and quotes were extracted and subsequently transcribed on paper. The 'snowball method' of

actor/interviewee identification was used; so that participants were encouraged to refer others whom they deemed could contribute to the research. Furthermore, the fieldwork in Ghana consisted of 6 weeks, between July and September of 2010, during which observations in the society and were also assessed to evaluate Ghana's preparedness in dealing with its new oil industry. Media outlets such as local radio and television stations, and newspaper articles were also an important data gathering method. Another fundamental component of the data gathering was the use of participant observation in which information was gathered by the researcher while in attendance at an oil and gas symposium. This meeting was important for assessing other viewpoints from the general Ghanaian society concerning Ghana's management of its petroleum industry (discussed in chapter six).

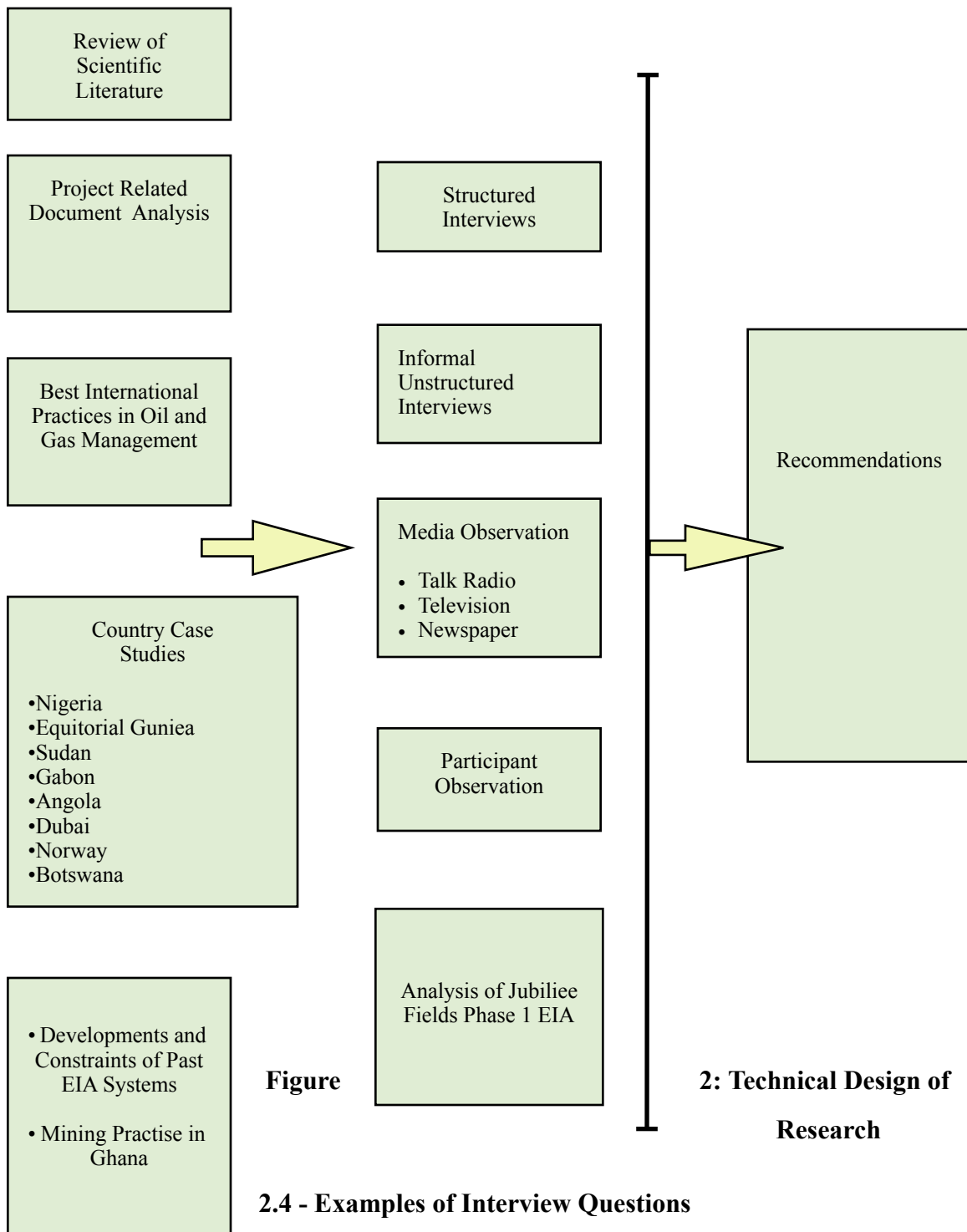
Finally, the responses of the interviewees aided in assessing the perceived role of the national government in effectively managing the country's oil resources. Some participants who preferred to have their identities remain confidential were assured of anonymity, therefore only company affiliation is used to identify these individuals. The key themes and patterns of interrelationships among responses helped answer the central research question as well as provide the basis for the recommendations which are given in chapter 8 of this report. Contributing to these recommendations are lessons learned from the case studies of several oil exporting countries and the best international practices of oil and gas management. In addition, an integral component of this research looked at the environmental capacity of Ghana in handling its oil resource. Therefore, specific interviews and research focused primarily on the constraints on environmental

management and its application in the mining sector as well as the use of the environmental impact assessment in Ghana. The above mentioned methodology received approval from Ryerson University's Ethics Board and fulfilled the requirements of conducting research using human subjects.

Preliminary Literature Research

Qualitative Research

Research Objective



The following is a sample of the questions which were asked of the

participants.

1. What measures will be instituted to prevent pollution and protect biodiversity in the coastal area?
2. What are the strengths and deficiencies in the current legal and regulatory framework that manage the petroleum industry in Ghana?
3. How can the strength of environmentalism and sustainable development in Ghana today be characterized? What efforts are being made to educate the citizens and students of Ghana about these issues?
4. How can Ghana's new oil boom be different from the past development failures associated with petroleum in Sub-Saharan African countries?
5. How should issues of corruption and transparency in the government be addressed for the Ghana's petroleum sector?
6. Is Ghana's environmental legislation strong or comprehensive enough given forthcoming oil extraction? What actions or measures is Ghana taking to manage the benefits and challenges presented by the oil extraction industry?

2.5 - Research Participants

38 individuals were interviewed for the research, including university students, other concerned citizens, and individuals representing sixteen different civil society organizations and non governmental organizations (appendix A). Background research revealed that Ghana possesses a very strong network of civil society organizations that focused their efforts on sustainable development, environmental protection, and human and social rights issues in Ghana. Therefore as advocates of the Ghanaian people, these groups were deemed by the researcher to have extensive understanding of the general

attitudes and perceptions of the Ghanaian people with regard to oil development in Ghana.

Moreover, several of these CSOs, such as ISODEC and Oxfam dealt closely with the government and could provide important viewpoints from the perspective of the government as well. After many governmental personal declined to participate in the study, the availability of these groups and their willingness to contribute to this study was a contributing factor which made them a prime target. Therefore this sample group does not represent entirely the intended targeted population of the research. Several individual whose contributions would have been valuable to the research declined to be interviewed. These individuals include representatives from the Ministry of Energy, the Ministry of Environment and Technology and the Ghana National Petroleum Corporation (GNPC). The input of these individuals perhaps would have provided a balance, or a broader range of opinions to those which were offered by the interviewees. Nevertheless, the representatives of civil society organizations and other individuals involved in the interviews encompassed diverse knowledge areas related to this research which helped tremendously in achieving research objectives.

In addition, the contribution of three anonymous individuals from the Ghana Environmental Protection Agency (EPA) was an integral component of the research, as it shed some light into several deficiencies within the government and environmental protection initiatives. Appendix A lists all the names and organizations of the participants who were interviewed for this study. Individuals who chose to remain anonymous are identified only by their organizational affiliation.

Furthermore, this list indicates that several interviews occurred while in attendance at an Oil and Gas Public Forum (The forum is discussed later in the report). Thirteen individuals were interviewed at the conference. Some of these individuals were students and others worked for the civil society organisations and non-governmental organisations in Ghana. Having only a short duration for interviews, four questions, each specifically targeting the research objectives were posed to each participant. These questions and some of their responses to them are discussed ifurther in chapter 6.

3.0 - SUSTAINABLE OIL EXPLOITATION: A Literature Review on the Resource Curse Phenomenon

The rich scholarship regarding the so-called resource curse and sustainable development in the extractive industries has been steadily growing since the 1990s. The

literature has looked at the reasons why some countries with natural resources perform well, while others fail to capitalise on their oil endowment and perform worse compared to their less endowed counterparts (the resource curse). The literature also encompasses a broad view of the relationship between social and political structures, institutions and policy choices. This chapter provides a brief review of this literature and evaluates the range of instruments which have been utilised to strengthen the institutional arrangements for effective management of oil. The chapter further discusses how the resource curse has been prudently handled in various parts of the world as well as its negative manifestations in Sub-Saharan Africa.

3.1 - Central Theme of Research: Sustainable Development

In one of the themes of Hardin's (1968) classic, "The Tragedy of the Commons," he argues that natural resources belong to all people and thus should be beneficial to all citizens. He asserts that the abuse of the environment, due to the greed and selfish interests of a small few, had the potential to jeopardize the well being of both current and future generations. His thesis was an early introduction to sustainable development; an idea later popularized in the Brundtland report in 1987. Sustainable development was described in that report as development that, "Seeks to meet the needs and aspirations of the present without compromising the ability of future generation to meet their own needs" (WCED 1987).

Since its introduction into the vernacular of modern language, the word sustainable has been heard with remarkable regularity in speeches by politicians, and articles by economists, scientists, and policy makers (Bell and Morse, 2008). The

popularity of the word and its ubiquitous use may be due to the countless interpretations and differing applications of the term. Consequently, “Sustainable development has become the watchword for international aid agencies, the jargon of development planners, the theme of conferences and learned papers and the slogan of development and environmental activists” (Bell and Morse, 2008).

The popularity of this term gained momentum after the Rio de Janeiro Earth Summit held in 1992. At this conference, world leaders committed themselves to the Agenda 21 action points to promote sustainable development in the twenty-first century. This would be achieved by equally investing in the three dimensions of sustainability: economic development, social equity and environmental conservation, otherwise known as the triple bottom line (Elkington, 1998).

Sustainability and sustainable development, though often used interchangeably, differ subtly in their meaning. The former is often defined as being a state while the latter is seen as an ongoing process of development (Bebbington, 2001). Furthermore, within the idea of sustainability there are two mutually exclusive viewpoints. “In strong sustainability there is little, if any consideration of the financial or other costs of attaining sustainability” (Bell and Morse, 2008). On the other hand, if one believes in the weak sustainability, then environmental quality can be traded against social and economic benefits. Between the two, weak sustainability is the prevalent form in the current global economy.

Crude oil extraction has been said to be one of the few ways where the opportunity for sustainable development and the transfer of wealth has been afforded to

the developing world by the developed nations (AOPIG, 2002). Consequently, Africa's trade relationship with the rest of the world has been dominated by extractive industries namely, oil, gas and mining (Gary et al. 2003). Thus, Africa's oil boom has been instrumental, albeit often below potential, in transforming otherwise heavily indebted and poor societies.

3.2 - The African Oil Boom

According to Ghazvinian (2007), when oil prices have been high, large profit margins have in turn given oil companies greater leverage to invest in research and development technologies. Therefore, when the Persian Gulf War (1990-1991) spiked the price of oil, this was a catalyst to expensive deep water (5,000 to 10,000 feet) drilling technology used in offshore oil exploitation. This technology enabled exploration in ways that were previously unforeseeable, allowing oil companies to now chart the estimated 75% of the world's deep water reserves in the Atlantic basin (Ghazvinian, 2007). As Gary (2009) concludes, "With oil fields in other parts of the world 'locked up' in the hands of governments and national oil companies, international oil and gas firms have flocked to Africa based on open investment policies, lucrative offshore finds, and easy shipping to international markets." Many of the world's multinational oil corporations have taken residence in Africa, including France's Total, the British-Dutch consortium Shell and America's Chevron. According to Gary and Karl (2003), of the 8 billion barrels of oil which were discovered by prospectors in 2001, 7 billion were in Africa's West and Central Atlantic coast.

In addition, Africa offers the world the opportunity for oil diversification, especially for countries such as the United States, whose national security depends on increasing autonomy from Middle Eastern oil. Moreover, for strategists around the world the appeal of Africa's oil goes beyond the number of barrels that exist underneath its land and territorial waters.

First, the "sweet" and "light" properties of the crude oil meet the world class Brent standards in oil quality (Gary, 2009). These distinctions are industry terminology referring to the low sulphur content and high viscosity of the oil. This also means that the refinement process is cheaper and less obstructive to the strict environmental regulations of America and Europe that make the refining of heavier (high viscosity) and sourer (high sulphur) varieties undesirable.

Another favourable reason for African petroleum is its geographic position and offshore location where many reserves are situated. The Gulf of Guinea, in particular, is ideally positioned to support a significant reduction in transport related costs and risks. Existing sea-lanes facilitate the cheap and speedy delivery of oil to the major trading ports around the world. The oil is simply loaded on tankers at the point of production and shipped to the international markets.

A third advantage, from the viewpoint of the oil companies, is the tremendous incentive for foreign investment due to the favourable contractual revenue and production sharing agreements (PSA). Without having the necessary technical expertise and capital for exploiting oil, the governments of less developed countries will attract foreign investment through production sharing agreements (PSA). PSAs provide the most viable

option for government to reap the rewards of its hydrocarbon reserve. This agreement means that an oil company will first recover the money it has invested in the offshore oil development activities which include: seismic surveys, exploration and appraisal drilling, design and construction, production operations recovery. The successful sale of the oil to international markets will allow the host government to share in the revenue from the sale, after the initial financial investment is recouped by the oil companies.

The unfortunate result of PSAs, however, is the fact that can they can be dangerous to the best interests of the nation's sovereignty. MNCs have a practice of demanding that stabilisation clauses be added to contracts in places with weak and unstable legal systems. Stabilisation clauses, in essence, freeze the current investment conditions and the legalities surrounding how they are to conduct business in host countries. This means that in the future, if the host government should choose to change a law or regulation, it cannot do so retroactive to the time these oil contracts were signed. Therefore, regardless of its benefit to social or environmental good, MNCs become exempt from having to comply with any change of national law which affect their ability to profit from their investments.

Simply said, the value of African oil can be summarised as this: African oil is cheaper and easier to exploit; it is more accessible to private firms through PSAs than in other regions; and there seems to be an increasing frequency of oil discoveries (See Table 3 for oil production in Sub-Saharan African countries).

Table 2	Oil production of Sub-Saharan African Countries	
Country	Estimated Reserves Production	Thousand Barrels per day (tbpd)
Nigeria	36,220,000	2,167
Angola	8,000,000	1,695
Equatorial Guinea	1,100,000	320
Congo-Brazzaville	1,600,000	240
Gabon	2,000,000	230
Cameroon	1,600,000	84
Ghana (potential)	600,000–1,300,000	40–150

(Gary, 2009)

3.3 - The Resource Curse

To the casual observer, the mere presence of resource wealth is seen as a catalyst that creates rich, equitable societies, with growing economies. On the contrary, Mikesell (1998) provides impressive evidence, showing a slower rate of growth in nearly all resource-rich developing countries over the period of 1980-1992.

Table 3:	Exports of Fuels, Minerals and Metals as a Percentage of total Exports, Per Capita GNP (1992 dollars), and average Annual GNP growth rates, 1980-1992		
Country	Share of Exports (%)	GNP (1992 \$)	Average Annual Growth (%)
Sierra Leone	34	160	-1.4

Table 3:	Exports of Fuels, Minerals and Metals as a Percentage of total Exports, Per Capita GNP (1992 dollars), and average Annual GNP growth rates, 1980-1992		
Country	Share of Exports (%)	GNP (1992 \$)	Average Annual Growth (%)
Niger	86	280	-4.3
Nigeria	96	320	-0.4
Togo	45	390	-1.8
Gabon	89	4450	-3.7
Algeria	87	1840	-0.5
Congo	92	1030	-0.8
Mauritania	84	530	-0.8
Botswana	N/A	2790	6.1
Saudi Arabia	95	7510	-3.3
All low and middle income countries	-	-	-0.9

In his data comprising of 23 mineral exporting countries, the average annual per capita growth is a negative 0.5% and negative 0.9%, for all 23 countries and all low and middle income countries, respectively. Only five countries including Botswana had positive rates of per capita GNP growth during this period. Furthermore, evidence shows that resource rich countries suffer under oppressive regimes, exhibiting high degrees of corruption, inequality and political instability (Schubert, 2007). Therefore, oil has been described as the gift and the curse: natural resources tend to be a gift in homogenous

countries with strong institutions (industrialised countries) and a curse in fractionalized states with weak institutions, such as those in many developing nations (Hodler, 2006).

In addition, Humphreys et al. (2007) assert that resource rich (with petroleum) countries grew less rapidly than resource poor (without petroleum) countries during the last quarter of the twentieth century. Similarly, Gary (2009) indicates that from 1970 to 1993, countries without oil realized a four hundred percent increase in the growth of their economies (GDP) compared to those countries with oil. He further explains that the abundance of natural resources ultimately becomes a source of significant economic deficit rather than leading to economic prosperity (Gary, 2009). Thus the resource curse thesis, as documented by Karl (1999) and many others was born from the aforementioned adverse effects of oil exploitation. Similarly, Moody-Stuart (2004) and Vicente (2010) have documented that the non-inflated GDP and the standard of living for a population typically declines in resource rich countries. This results from mismanaged oil revenue by corrupt policy makers (Søreide and Ivar, 2009), which create a gap between the government and its people (Sandbu, 2009).

Furthermore, Ross (1997), using a statistical analysis of 113 countries between 1971 and 1997, adds that a state's "reliance on either oil or mineral exports tends to make it less democratic; that this effect is not caused by other types of primary exports, that it is not limited to the Arabian Peninsula, to the Middle East, or sub-Saharan Africa." He also also observes the following trends due to the exploitation of oil: pressure for democratisation is dampened by patronage spending ("spending effect"); obstruction of independent social groups by authoritarian governments ("group formation effect");

spending on police and internal security which choke democratic movements (“repression effect”); and diminished pressures for occupational specialisation, urbanisation, and the securing of higher levels of education (“modernisation effect”) (Ross 1997). There are other political ramifications of oil dependence, namely, governments will tend to under invest in public expenditures when the primary focus is winning the next election (Collier, 2006). Therefore investments that only come to fruition in the future are ignored and patronage spending is increased to win favour and votes.

3.4 - Taxation Effect

Schubert (2007) has found that there tends to be greater economic diversity, high levels of political participation, and government concern for the needs or desires of the people when their money contributes to national development. Since taxation structures within a country contribute to a high share of national GDP (Schubert, 2007), oil dependent economies are more likely to have limited political freedoms when they stop relying on taxing their citizens. In almost every case, from Saudi Arabia to Venezuela, and Nigeria to Angola and even Russia, dependence on resource exports leads to a decrease in individual income taxes to national GDP (Schubert, 2007). This results in weak linkages between governments and their citizens, since countries that are able to generate revenue from oil lose the incentive to tax their citizens for domestic revenue. Therefore, untaxed citizens are denied valuable information pertaining to the affairs of their government as well as the leverage necessary to influence the political and

economic actions of their government. As a result they are unable to hold the government accountable (called the “taxation effect”) for their actions.

3.5 - Dutch Disease

According to Schubert (2007), an integral component to a stable economy is the diversification of a nation’s economy. When diversification is absent in resource rich countries, governments will forsake all other industries and focus all the attention on that the limited income from oil. This will produce an “enclave” oil economy where no linkages with other sectors of the economy exist. Dutch Disease is the most cited explanation for the problems associated with the resource curse (Larson, 2003). In 1970, during the discovery of oil in the North Sea, the Dutch suddenly discovered a steady decline in their manufacturing sector (Humphreys et al., 2007). A commonly observed effect in resource-rich countries, where a decline in the manufacturing or the agricultural sectors of the economy is seen, have been termed by economists as the Dutch disease. The mechanisms for this process of deindustrialization is two fold. First, resource boom causes the real exchange value of a country’s currency to appreciate in response to the large capital inflows from oil. This results in the higher price of non traded goods when demand increases and surpasses domestic supply. The appreciation of the currency allows traded goods to be imported more cheaply, thus making domestic production of these goods less desirable (called the “spending effect”). As a result, a high volume of imports enter the county causing the domestic industrial sectors of the economy to be wiped out.

Moreover, Gary (2009) and Pegg (2009) assert that in the outcome, the balance of trade with other countries becomes greatly affected and the non-energy sector areas of the economy risk being completely devastated. This results from materials and capital being drawn away from the agricultural and manufacturing sectors into the extractive sector (this is called the “resource pull effect”). In response to this, workers rush to get the limited jobs that are only found in the extractive sector; unfortunately those that fail are denied the best opportunity to generate income and earn a living. As described, the shift away from agricultural and manufacturing exports to oil leads to a shift in the sectoral composition of the labor force. Table 3 compares the sectoral employment patterns in two countries with large oil sectors (Nigeria and Saudi Arabia) to otherwise similar countries that lack oil; Egypt in 1995 and Ghana in 1990, prior to its oil discovery. In both cases it is clear that oil exporters have considerably lower employment in agriculture relative to services.

Table 4	Employment by Sector in Selected Countries		
Middle East/ North African Comparison	Agriculture	Industry	Services
Egypt (1995)	34	21.9	44.1
Saudi Arabia (1990)	19.2	19.8	61
West African Comparison			
Ghana (1990)	62.2	10.1	27.9
Nigeria (1995)	2.9	22	75.1

(Humphreys et al., 2007)

The consequences of the resource pull effect and the spending effect can be costly and have long term consequences for the economy. When the activities in the extractive industry slow down, it may be extremely challenging for the other sectors to recover, and after the initial euphoric period of high oil revenues subsides, the subsequent downturn that follows can be devastating. Karl (2004) offers some examples that show North Africa and the Middle East exhibiting the typical employment increases, infrastructure improvements and rapid per capita income growth associated with an oil boom. Per capita exports, however, declined in these areas from its 1980 high of \$2042 to \$407 in 1992, due to oil prices falling and subsequent population increases. Evidently, unprepared governments must be concerned with the fact that oil dependence can have dramatic shifts in the social welfare of their society; an occurrence which can only be addressed with the proper policy initiatives.

3.6 - First Law of Petropolitics

Another perspective of the resource curse can be found in an article written by Friedman (2006). In his research, he attempts to measure and graph the correlation between the price of oil and the pace, scope and sustainability of political reforms in certain oil rich nations. He focuses on “petro-states”; those countries which according to him are dependent on oil production for the majority of their exports or Gross Domestic Product (GDP), and have weak institutions or outright authoritarian government.

Friedman (2006) postulates, according his First Law of Petropolitics (FLPP), that the price of oil and the pace of freedoms always move in opposite directions. In effect, “The higher the average price of oil rises, the more free speech, free press, free and fair

elections and independent judiciary rule of law and independent parties are eroded” (Friedman, 2006). Conversely, as the price of oil declines oil rich nations embrace a more democratic political system and governments do more for the social well being of their people. In the case of declining oil prices, these governments become more sensitive to opposition voices both internally and internationally. They then prioritize building legal and educational structures to maximize the potential of its people, and support greater measures for transparency within their societies.

The list of petro-states offered by Friedman (2006) included Uzbekistan, Azerbaijan, Angola, Chad, Egypt, Sudan and Nigeria. Friedman concedes that countries whdemonstrate strong institutions, a solid rule-of-law and political stability are exempt from this dark rule as well as most of the manifestations of the resource curse. These include Norway, Russia, Canada, United Kingdom, the Netherlands and Denmark and other industrialized countries whose societies were already diversified and that had established well functioning institutions before their discoveries of oil.

Friedman concedes that his research findings may not be scientifically proven, nonetheless, the FLPP has started to gain popularity in peer-reviewed journals, being cited by Cole et al. (2007), to support a new analysis of governance issues, as well as Mignone (2007) and Stevens et al. (2008), proposing changes in energy policy. However, an opposing argument is brought forward by Townsend (2009), refuting the FLPP and asserting that Friedman’s argument may lack statistical evidence to support his claim. He explains that a single factor such as oil price cannot fully explain the complex process of political reform but that a proper analysis of the effects of oil price on political reform

needs to consider other measures, such as the extent of reserves, production levels and production revenues, cost and ownership. Still, Friedman's analysis does seem to have a place in the mystery surrounding the resource curse phenomenon and the troubling experiences in so many parts of the world.

Table 5: Key Terms of the Resource Curse	
Spending Effect	Pressure for Democratization is dampened by Patronage Spending.
Group Formation Effect	Independent Social Groups are obstructed by authoritarian governments.
Repression Effect	Increased spending on police and internal security chokes democratic movement.
Modernization Effect	Decreased priority for occupational specialization, urbanization, and the securing of higher levels of education by citizens.
Taxation Effect	Limited political freedoms that arises when taxes from the society are no longer needed by government for national development needs.
Dutch Disease	Results in “enclave” oil economy where no linkages with other sectors of the economy.
Resource Pull Effect	Pulls materials and capital away from agricultural and manufacturing sectors into the extractive industries.
Spending Effect	Appreciation of the country’s currency causes non-Natural Resource Commodities more Difficult and Imports very cheap.
Nigerian Disease	Corrupt Spending and Mismanagement of Oil Windfall.
The First Law of Petro-Politics	The price of oil and the pace of freedoms always move in opposite directions.

3.7 - The Effects of Oil Exploitation in Africa: Country Profiles

Vice President of Ghana, Mr. John Dramani, in an address at an oil and gas symposium in 2010 remarked that, “The manifestations of the resource curse, as it has been seen in so many African countries, [would] not be allowed to happen in Ghana.” However, this statement seemed rather premature, especially given how little had been done in Ghana to prepare for oil extraction (further explained in Chapter 4). One might ask, how could Ghana be certain of any different outcome with the resource curse having been exhibited in virtually every oil producing country in Africa’s history (Karl, 2004). In fact, Karl (2004) adds that there are almost no cases of successful development of exports based on petroleum. Moreover, the experiences in Ghana’s mining sector do not leave much grounds for optimism; however, Ghana’s oil rich neighbors in Africa may provide valuable lessons for the country.

With the tremendous revenue gained from oil, many of these resource rich countries should rank among the among the richest in the world, instead only a few on the top benefit while the majority are left in abject poverty. Nobel prize winning economist Joseph Stiglitz has called this situation “rich countries with poor people” (Schubert, 2006). Karl (2004), Schubert (2007) and Gary (2009) also point out the unusually high poverty rates, high rates of child mortality³, poor health care, and poor levels of education that have been perpetuated in these countries. This is seen by the following review of Nigeria, Sudan, Gabon, Angola, and Equatorial Guinea.

³ Among the 20 African countries with the highest infant mortality rates (that is the number of deaths per thousand live births), Angola tops the worldwide list with 182.31, followed by Chad 100.36 percent, Nigeria 93.93 percent, and Equatorial Guinea 83.75 percent
www.cia.gov/library/publications/the-world-fact-book/rank

3.7.1 - Nigeria: Turmoil in the Niger Delta

According to Edoho (2003) no discussion of African oil would be complete without referencing Nigeria. This is true for many reasons: First, Nigeria is the largest producer of oil in Africa and has had the longest history of international oil trade on the continent. Second, the oil producing region of the Niger Delta has gained worldwide notoriety for the rampant social upheaval and the decades of environmental degradation which its indigenous people have had to endure. Third, underdevelopment and abject poverty has incited the indigenous people to violence towards the government and the multinational corporations in Nigeria resulting in many casualties.

The long history of oil exploitation in the Niger Delta has yielded monumental environmental impacts. According to Ogunleye (2008), the abuses of the environment have taken the form of oil spills and leakage, oil-related fires and explosions, land degradation causing loss in soil fertility, unsafe drinking water, species' extinction, and gas flaring perhaps the most egregious of all the impacts. Gas flaring has rendered farmlands barren and when oil communities have protested against the government and the activities of the multinational organization in their land, their concerns have gone unheard. Such social unrest lead to the arrest and executions of Ken Saro-Wiwa and eight other community activists (called the Ogoni nine) due to the peaceful demonstrations against the harsh injustices and the lack of compensation which was denied their community (Humans Rights Watch, 1999). This infamous incident gained attention by human rights organizations around the world and Shell received public disgrace and backlash for their involvement in the murders. The company was accused of colluding

with the government and paying for military intervention against the demonstrations in the Niger Delta which resulted in the murders. In 2010, Shell finally made restitution to the families of the deceased, not accepting blame for the incident, but for the unfortunate role the company played in the tragedy.

Nigeria's experience with exploiting oil is also filled with great inequalities and rampant corruption. By some accounts Nigeria's former president Abacha (military dictator Abacha, president of Nigeria from 1993 to 1998) was responsible for theft of as much as US \$3 billion from Nigeria's coffers (Humphreys et al., 2007). The "Nigerian disease," as demonstrated by his wasteful spending of oil revenue, is described by Williams (2010) as being another impetus alongside the Dutch disease for the noted resource curse. Resource revenue is wasted by governments who lack the institutional capacity to rightfully allocate windfall gains prudently; as a result poverty and underdevelopment are perpetuated in oil rich societies.

Between the years of 1990-2004, forty-three percent of the population lacked sustainable access to improved sanitation and fifty-two percent lacked sustainable access to improved clean water (Ogunleye, 2008). Furthermore, the poverty rate (measured as the share of population subsiding on less than \$1 U.S day) increased from nineteen million in 1970 to about ninety million in 2000 (Ogunleye, 2008). Also, the period between 1970 and 1982, saw the Dutch disease severely attack the agricultural sector in Nigeria. According to Ghazvinian (2007), production of cocoa fell 43 percent, rubber 29 percent, cotton 65 percent, and ground nuts 64 percent. Finally, the percentage of Nigerians living in poverty rose from 28 percent in 1980 to 66 percent in 1996.

Interesting, Nigeria is the sixth leading exporter of oil in the world, so one might ask, where is all the revenue going and how are the indigenous people truly benefitting from it? Furthermore, the most distinct cases of pollution and environmental abuse can be seen with Nigeria's history with oil. Countless oil spills, loss of biodiversity, and severe degradation of land, water and air have characterized decades of oil development within the Nigerian environment.

3.7.2 - Sudan

Although Sudan has had a shorter experience with oil exploitation, Bassey (2001) compares the massive war in the oil areas with the atrocities that have transpired in the Niger Delta. "Southern Sudan, where most of the oil is, has long been a zone of extraction rather than of development. As a way of keeping the oil operations areas clear of conflict, the Sudanese government has resorted to bombings and the burning of entire communities to create no-man's lands around the production wells. Moreover, with the creation of Southern Sudan (an area rich in oil) conflict between north and south Sudan has intensified.

3.7.3 - Gabon

Gabon is yet another example of an African oil exporting country trapped in the natural resource curse. It is estimated, according to Bainomugisha (2006), that Gabon is only a decade away from depleting its oil reserve. This is especially troubling because as of 2006 no contributions had been made into their oil fund (Fund for Future Generation) and no strategy had been put in place for post-oil boom economy. Dutch disease has

devastated its agricultural sector and currently all food is imported into the country (only about 1% of the total land is used for cultivation). Oil exploitation has not improved the standard of living for its citizens; 50% of those living in the three major cities lack access to electricity and running water.

3.7.4 - Angola

Angola's government has so mismanaged its oil revenue that millions of Angolans live without access to hospitals, clean drinking water and schools. This despite supposed spending by the government amounting to \$4.27 billion U.S. on public and social expenditures between 1997 and 2002 (Bainomugisha, 2006). However, according to IMF audits, \$4.2 billion in oil revenue went missing between 1996 and 2001 (Schubert, 2007). Like so many other countries, oil has been used as collateral in Angola which means that much of its oil output has been pledged to pay back loans. Angola is a prime example of an oil rich nation whose endowment has been more of a curse than a blessing. According to Bassey (2001), civil war has over the years torn Angola apart and has virtually halted every national endeavor for progress and sustainable development. Furthermore, because oil is produced offshore, it has meant the negation of corporate responsibility to the real owners of the resources. "The war in Angola, as in many other countries in Africa, is a war of resource control and conflict" (Bassey, 2001).

3.7.5 - Equatorial Guinea

The story of oil exploitation in Equatorial Guinea remains unchanged from that of its African neighbors. "The political situation in the country is characterized by

repression, human rights violations, no accountability or transparency and virtually no civil society” (Bainomugisha, 2006). Until the discovery of oil, agriculture was the dominant source of livelihood for its people. Today, coffee and cocoa production, as a result of Dutch Disease, has declined severely. Another striking feature of Equatorial Guinea's oil mismanagement is the ineffective negotiation of its oil contracts with the multinational corporations (by international standards the government take is considerably low).

Finally, the aforementioned manifestations of the resource curse have been far too menacing in developing countries for any government to be overconfident about its avoidance. Unfortunately, where corruption and government secrecy is concerned, Ghana has a political environment very similar to the above mentioned countries. Therefore, Ghana has a very poor legacy to overcome. Still there are successful cases of wealth management and good governance in the extractive industries which prove that it can be done.

3.8 - Successful Cases of Resource Management

Despite the preceding descriptions, the mere possession of large amounts of petroleum resources does not necessarily induce the resource curse phenomenon. It would therefore be unbalanced to describe all the woes associated with oil without mentioning how these consequences have been avoided elsewhere, both in industrialised and underdeveloped nations. As mentioned previously, success in resource management depends on a nation's ability to, among other things, counter the general equilibrium

effects of expansion and contraction that ensue when resource production and extraction begin. Also, success depends on efforts to diversify a nation's economy and on the ability of a nation to distribute oil wealth to its populations. The following three countries will demonstrate these successes: Norway, Dubai and Botswana.

3.8.1 - The Case of Norway

The onset of Norwegian oil exploitation presented the same dangers which have become so prevalent in other places. However, Norway's prudent management of its oil resource has ranked it, according to the United Nations Human Development Index, as the best place to live in the world today (Human Development Report, 2010). Norway's long escape from the resource curse and Dutch disease is seen as a lesson to oil rich nations and this success is due to the initial conditions within the country before oil was found. Humphreys et al. (2007) and Breisinger et al. (2010) support this assertion explaining that empirical evidence suggests that the impact of resource inflows critically depends on initial conditions, especially on the strength of institutions and human capital. In the case of Ghana, strengthening institutions will entail a determination of which existing ministerial departments or bureaus need to be responsible for implementing the different policies in petroleum management. Norway, in contrast, has four well functioning institutions with major involvement and clearly defined roles in policy execution. These are the Ministry of Oil and Gas (concession policy), Ministry of Municipalities and Labor and Ministry of Environment (safety and environmental protection) and the Ministry of Finance (taxation policy) (Larson, 2003).

Moreover, as revenue became increasingly large in Norway, the government decided against investing oil wealth to fund public projects. Instead the government established, in 1990, the Government Petroleum Fund (GPF) (Larson, 2003). This oil fund is necessary for stabilising and balancing the spending of volatile oil revenue and is the model by which many developing countries today manage their oil endowment (Humphrey's et al., 2007). It is also advantageous to Norway's ageing population, as these monies are allotted to future pension commitments. As a result, the joint efforts of these ministries have perpetuated the ideals of sustainable development for Norway's citizens, thus demonstrating that oil and gas undertakings do not have to be the "doom and gloom" predicament found in the developing world. In Norway, the distribution of oil earnings is very fair and equitable. With already extensive physical and human capital in place, the oil revenues are distributed to the public through pension benefits. According to Larson (2003), success in resource management depends on a nation's ability to counter the general "bust and boom effects" that ensue when production and extraction begin, expands and contracts.

3.8.2 - The Case of Dubai

Dubai offers an entirely different model for managing an economy dependent on oil. Their foresight in the 1950s, after realizing the dangers of oil dependence, set the country on a diversification plan that has now taken decades to come to fruition. Its fruits have now yielded the opulence that is seen in Dubai's landscape and the high standard of living of its people. However, Dubai's oil wealth did not immediately build the lavish

palaces and armies seen in other oil producing countries. As Schubert (2007) points out, diversification requires infrastructure such as roads, ports and telecommunication. With the early intuition that diversification was going to be a key to avoiding the resource curse, Dubai invested in building a port to aid in commerce. This would become the first of many successful investments. Following, Dubai invested in manufacturing facilities, tourism, and health care, ultimately building some of the world's finest media centers and hotels. The key to Dubai's success was not relying solely on its petroleum exports but rather finding other sectors of its economy to invest in through oil wealth.

3.8.3 –The Case of Botswana

Few examples on the African continent demonstrate the possibility of overcoming the resource curse; however, Botswana has proven to be a beacon of light for resource-rich countries involved in the extractive industries. As the world's largest producer of gem quality diamonds, it appears that Botswana has avoided the resource curse. Botswana, according to Moss et al. (2009) had the highest per capita growth rate in the world between 1965 and 1998. Today wealth from Botswana's diamond industry has benefitted its society by leading to tremendous investments in infrastructure, education, and health. Moreover, it has allowed the country to be one of the only countries in Africa to provide universal access to HIV/AIDS treatment (Moss & Young, 2009). According to Moss & Young (2009), the success of the country stems from the pre-colonial institutions that enabled citizens to hold their government accountable, thus reducing corruption and mismanagement of oil revenue.

Table 6: Lessons Learned From Case Studies	
Keys to Successful Resource Management	
Countries	
Norway	<ul style="list-style-type: none"> • Investment into Social Services • Commitment to Transparency: National Oil Company is EITI Compliant • Prudent Management of Oil Windfall: Resource Funds
Botswana	<ul style="list-style-type: none"> • Investments in Infrastructure, Education, Health • Strong Institutions that Enforce Government Accountability
Dubai	<ul style="list-style-type: none"> • Diversification of Oil Revenue into Infrastructure Development (ports, roads) and other viable sectors such Tourism, Manufacturing, Telecommunications
Failures in Resource Management	
Nigeria	<ul style="list-style-type: none"> • Degradation of Environment • Investment away from Agricultural Sectors • Patronage Spending • Corruption • Excess Public Expenditures, Theft, Wasteful Spending of Oil Windfall - 'Nigerian Disease'
Equatorial Guinea	<ul style="list-style-type: none"> • Poor Negotiation on Oil Contracts
Angola	<ul style="list-style-type: none"> • Collateralization of Oil • Civil War • No investment in Social Services
Gabon	<ul style="list-style-type: none"> • Inappropriate use of Oil Funds • No post oil exit Strategy
Sudan	<ul style="list-style-type: none"> • Degradation of Environment • Human Rights Violations

3.9 - Measures against the Resource Curse

According to Schubert (2007), the evidence linking resource wealth to a wide array of social, economic, and political problems has, over the last twenty years, led to a range of programs designed to combat the differing elements of the resource curse. These measures exist at different levels and target, for instance, such things as government corruption and abuse of power. Several programs have been commonly established to mitigate the symptoms of the resource curse. These programs include anti-corruption and transparency initiatives (championed by many international non-governmental organisations that have sought to create greater accountability in the extractive industries), and natural resource funds which are designed to smooth out public spending and investment. The following review will provide further detail about the pros and cons of these measures against the resource curse.

3.9.1 - Anti Corruption and Transparency Initiatives

Many believe that the first step towards reversing the oil curse is to remove the layers of secrecy that keep so many aspects of industry away from public scrutiny. According to the World Bank, companies that make unreported payments to governments may be rightfully accused of perpetuating corruption (World Bank, 2007). Similarly, when governments do not disclose contract agreements and how proceeds from the sale of natural resources are used, this lends itself to great abuses of power.

In the United States, the Securities and Exchange Commission (SEC) in 2011 made a great stride towards transparency. Section 1504 of the financial reform act

(Disclosure of Payments By Resource Extraction Issuers Section) demands that payments (type and total) submitted to foreign governments be reported to the SEC by all oil and mining companies who sell their shares on the U.S stock exchange (CSPOG, 2011). This means that American companies in the extractive industries that do business in the various developing countries around the world will have to provide information to the U.S government regarding the amounts of money paid in royalties and other payments to host governments.

Moreover, numerous other efforts around the world have targeted transparency in the extractive industries. These have been championed by international groups that have lobbied to enable public access to information regarding public finances and increases to transparency and government accountability at the national level. According to Schubert (2007), one such organisation is the Revenue Watch Institute (RWI) whose mandate is to support and fund NGOs and build the capacity of civil organisations, national governments, intergovernmental agencies, and the media in the fight against the resource curse. RWI partners with organisations in over 25 countries such as the World Bank, Transparency International, RAND and Oxfam, making it one of the most effective and well funded programs against the misappropriation of oil revenue (Schubert, 2007). Likewise, Publish What You Pay (PWYP) is another international advocacy movement which compliments the efforts of RWI and focuses its efforts on corporate spending and revenues. Both the RWI and PWYP work hand in hand with another more powerful international movement called the Extractive Industries Transparency Initiative (EITI).

The Extractive Industries Transparency Initiative (EITI) is the culmination of efforts in the movement to promote advocacy, accountability and good governance in exporting and importing countries (Schubert, 2007). It was founded in 2002 by former Prime Minister Tony Blair of the United Kingdom at the World Summit on Sustainable Development. Supporters of the EITI include the World Bank along with five other international NGOs, private investors (including Merrill Lynch, ING and Deutsch Bank), numerous oil and gas companies, industry associations, as well as national governments.

As Gillies (2010) explains the EITI is a voluntary agreement intended for countries where revenue from the extractive industries constitutes a large share of the total government revenue, total exports, or gross domestic product. Since it is voluntary, the real power of EITI is its ability to revoke membership and enable public criticism or humiliation of countries that are uncooperative with EITI commitments (World Bank, 2007). These commitments include that a country first acknowledges that the resource wealth of nation should benefit the citizens and the commitment to full transparency and disclosure. The requirements for implementation according to the World Bank (2007) include the following:

- Publishing all “material” oil, gas and mining payments by companies to governments on a regular basis (Published materials should be comprehensive, understandable, and publicly accessible to a wide audience).
- All payments must be subject to public audit,
- Auditing of payments and revenues by a credible and independent third party,
- Government engagement of civil society of these processes in public debate,

- Developing a public and financially sustainable work plan, including measurable targets, timetables for implementation and assessment of potential capacity constraints.
- Host governments are responsible and accountable for establishing a financially stable work plan with assistance from international financial institutions.

The EITI is not without its criticisms and short falls as pointed by PWYP and RWI (2006). Some of these criticisms include the following: it is voluntary and does not include any country from the Middle East; there is no international law or treaty backing the EITI and very few national foreign policies in which EITI compliance would be a requisite for receiving foreign aid. There is no standard legal form for national EITI programs and committees.

3.9.3 - Natural Resource Funds

Another measure to combat resource revenue misappropriation is the use of natural resource funds (NRF), also known as stabilization funds, future generation funds, rainy-day funds and saving funds. According to (2007), the instability of oil windfalls derive mainly from two factors: the high volatility of world commodity prices in the short term, and in the long term, the fact that oil is a non-renewable resource which cannot be exploited in perpetuity. Therefore, NRFs serve to offset the national budgets and the pressures caused by shortfalls in income. Furthermore, they allow money to be put away for a time when the primary resource has run out; in a sense, saving in the plentiful years to compensate for the meagre years.

The two most well known natural resource funds (NRF), recognised for their benefits to their respective societies, are the Alaskan Permanent Fund (established in 1976) and the Norwegian Petroleum Fund (established in 1976). The savings in the former allow for a dividend payments to be made directly to each citizens on an annual basis and likewise the latter fund. However, despite popular beliefs, the research does not support the idea that funds lead to the better management of natural resources (Humphreys et. al., 2007). There are numerous experiences with natural resource funds which prove that, though they may take care of the economics of managing money, they rarely takes care of the political economy incentives of decision makers.

For example, Chad was admonished to put in place a fund for future generations as a precondition for financing by World Bank for its funding of the Doba oilfield developments and the Chad Cameroon pipeline. Nonetheless, despite this fund, Chad remains among the most corrupt and least democratic countries in the world, and as recent experience has shown, the government felt free to simply change the rules when it wanted greater access to the oil revenues (Humphreys et. al., 2007).

Moreover, a study which sampled twelve resource exporting countries, of which five had rainy day funds, demonstrated that fiscal spending patterns did not differ between the resource rich nations and resource poor nations. Schubert (2007) concludes that without transparency, public auditing and restrictive access, NRFs are predominantly ineffectual in the long term to manage the accumulation of oil wealth. To elaborate the latter point further, restrictive access is necessary to reduce the temptation of misuse by government personnel. This may entail a separation of decision-making authority

between different political constituencies on the amount and use of the capital being removed from the funds. Also, it maybe necessary to put a cap on how much money can be used from the funds annually.

3.10 - Chapter Summary

Building the right environment for managing oil revenue and ensuring sustainable development in the petroleum industry is not a task to be taken lightly. It encompasses many dimensions which the preceding literature review has detailed. Sustainable development should include society-wide participation between citizens and host governments in three very important areas: the economy, the society, and the environment. Unfortunately, the challenges which have been observed in places such as, Nigeria, Angola, Equatorial Guinea and Chad show that the extractive industries can do more harm than good to these areas with positive outcomes never being significant enough to truly benefit the population at large. Nonetheless, for those resource rich countries which have embraced transparency, accountability, and diversification, oil wealth has truly transformed their societies. Botswana is a rare African example proving that natural resources can be a blessing when managed efficiently. Moreover, Norway has demonstrated a highly successful framework for managing oil revenue through its natural resources fund, though this requires other mechanisms of transparency and the rule of law for its success.

Finally, there is a wealth of information concerning the resource curse and its many manifestations in developing countries. However, there are relatively few published examples of these effects, particularly in the nation of Ghana since knowledge of its

petroleum resources has only recently emerged. As such, this study will help address key gaps in the academic knowledge which beforehand was scarce in the literature. Ghana has numerous advantages over many of its African neighbors which indicate why the familiar outcome of exploiting oil in Africa does not have to be its fate. The motivation for this research is therefore to identify what ways this can be accomplished.

4.0 - Ghana: Country Context

The republic of Ghana is situated on the western coast of Sub-Saharan Africa. It borders Cote d'Ivoire (Ivory Coast) to the West, Togo to the East, Burkina Faso to the North and the Gulf of Guinea to the South (see figure 1). Formerly known as the Gold Coast, the name Ghana was chosen after gaining independence in 1967 to reflect the ancient Empire of Ghana, which extended through much of West Africa. The total surface area of Ghana is 239,460 square kilometres with a coastline spanning 539 kilometres. This coastal area contains diverse and productive habitats important for settlements, developments and local survival of its 24,791,073 citizens⁴.



Figure 3: Ghana and Africa Map (CIA World Fact Book, 2010)

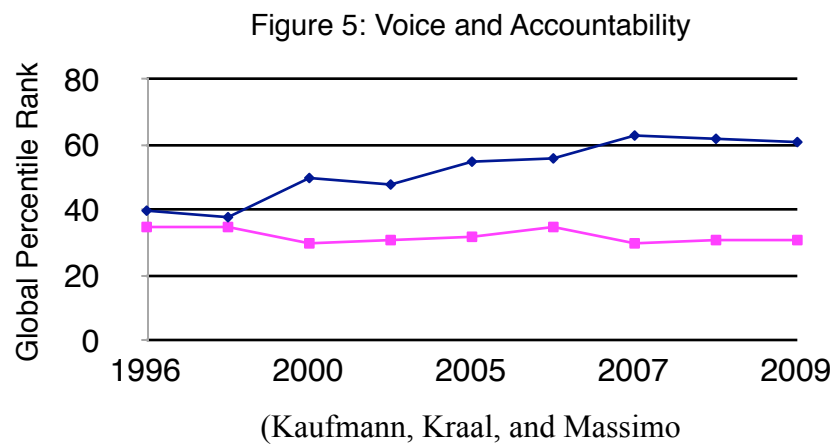
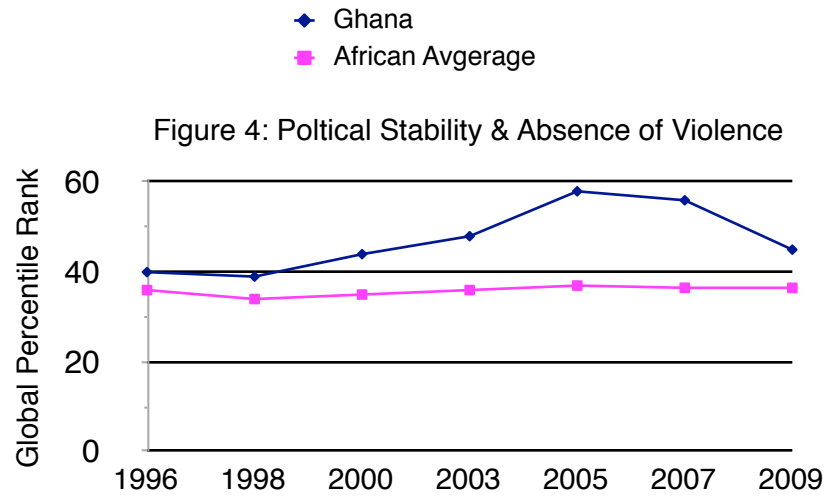
⁴ Information obtained from the CIA World Fact Book. Key word: Ghana
<https://www.cia.gov/library/publications/the-world-fact-book/geos/gh.html>

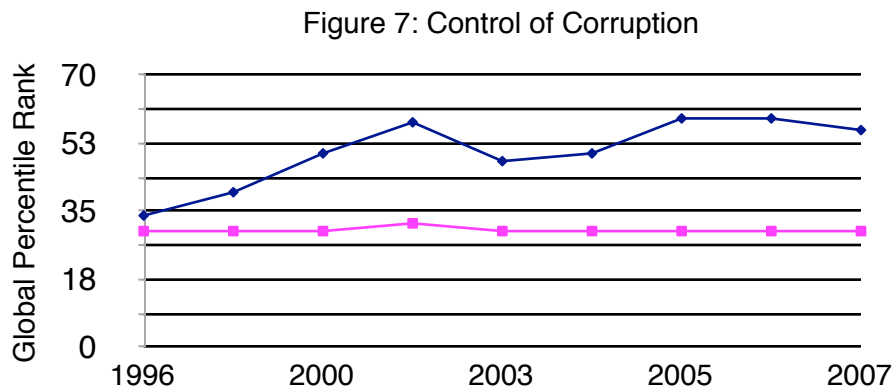
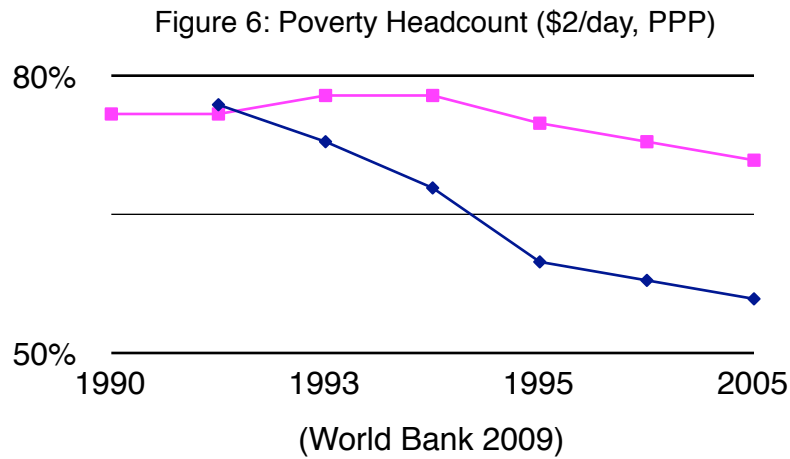
Ghana and its neighbouring nations have half of their population living within 60 kilometres of the shoreline. Sandra Kloff and Clive Wicks (2004), experts in the environmental management of offshore oil development and maritime oil transportation, note that this could rise to three quarters by the end of 2020. As a result, coastal resources are vital for many local communities and the indigenous population of the Exclusive Economic Zone (EEZ). The EEZ of the West African Marine Ecoregion is a very important because of the unique biodiversity of its flora and fauna. The region generates an annual revenue of 500 million Euros from the fisheries industry, making it the single most important source of foreign exchange and key source of economic and social developments in that region (Kloff & Wicks, 2004).

Ghana has been considered the rising star of Africa by many observers (Breisinger et al., 2010). In 2010, the nation gained worldwide news coverage by being the first African nation chosen by American President Barak Obama to visit. The hallmark of Ghana's success has been its democratic processes and the peaceful coexistence between its communities and ethnic groups (Gary, 2009; Moss et al., 2009; Breisinger, 2009). This is in sharp contrast to the fragmented civil unity and tribal warfare which have ravaged many societies in Africa.

Furthermore, governance indicators reported by the World Bank show that Ghana is steadily improving its governance. In 2007, Ghana ranked above the regional averages of Latin America, Asia and Africa in governance indicators, which measures things such as regulator quality, government effectiveness, control of corruption (Breisinger et al. 2007; Kaufman et al. 2008). Finally, Ghana is on a steady pace, according to the World

Bank, towards reducing its poverty by half, thereby meeting its Millennium Development Goals ahead of its 2015 scheduled date (Bresigner et al., 2010). (See Figures 2-5 below which demonstrate Ghana's performance in relation to the rest of Africa)





Since 1981, Ghana has politically become highly stable, returning to multiparty democracy in 1992. According to Moss et al. (2009), the country has since enjoyed five consecutive fair and free democratic elections (1992, 1996, 2000, 2004, 2008). Moreover, the 2000 and 2008 elections saw the peaceful transition of executive office between opposing parties: the New Patriotic Party (NPP) to New Democratic Congress (NDC) governments in the former election and vice versa in the latter election. Figure 3 demonstrates Ghana is on a steady upward trend in political stability and the lack of

violence which is well above Africa's regional norm. The success of Ghana's democracy is also in large part due to the high level of freedoms of media, speech and political association as demonstrated in Figure 4. Also, as indicated by Figure 6, Ghana has shown some strides in the control of corruption in comparison to the rest of Africa, moving from the thirty-fourth percentile in 1996 to fifty-sixth in 2008.

These aforementioned achievements have thus far made Ghana a frontrunner in African politics and development and the addition of oil to its economy will undoubtedly provide a substantial source of foreign exchange, additional government revenue and an alternate route for industrialization. However, against the precarious background of oil exploitation in Africa, the benefits of oil in Ghana will be met with considerable challenges.

4.1 - Ghana's Oil Discovery: The Jubilee Fields

Ghana's offshore discovery of oil in 2007 was met with great excitement by its citizens as well as the international oil industry. There was a great surge of high expectations, which included the belief that Ghana will transition from third world status to being a middle income country (Gary, 2009; Breisinger et al., 2009). Other expectations by the Ghanaian people included new infrastructure developments and other amenities which would immediately transform the standard of living within the country. According to Gary (2009), 78.5% of Ghanaians live on less than \$2 a day and Freeman (2010), points out that there are serious sanitation, clean water, electricity and waste issues in the country.

Before 2007, efforts to discover oil in Ghana culminated in a mere 600 barrels per day which was being produced by the Salt Pond Fields (Manteaw, 2009). The previous administration, however, did not relent in its determination to discover oil. The government's Growth and Poverty Strategy of 2006 placed emphasis on five key areas which would boost the economy. These included good governance, social service enhancement and the agricultural sector, but most importantly, it included initiatives to promote infrastructure development as well as encourage private sector development. This resulted in exploration licenses which were granted to international oil companies that came to Ghana in search of the much heralded hydrocarbon potential of the West African region.

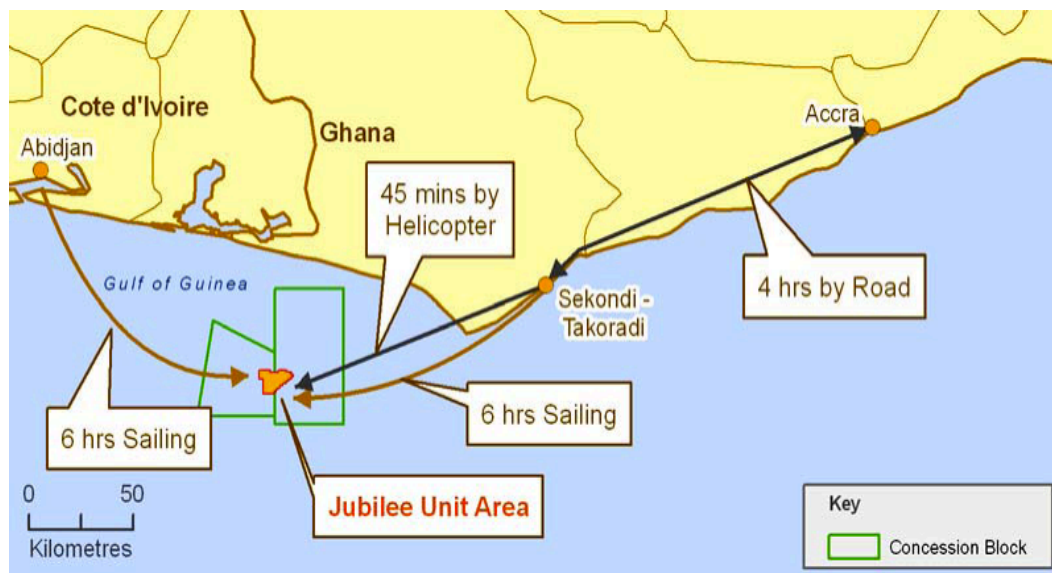


Figure 8: Map of Jubilee Fields Oil Development (Pacific Environment, 2009)

The subsequent discovery of oil coincided with Ghana's 50th anniversary of independence from British colonialism, hence the name given to the discovery. The Jubilee Fields (Figure 7) appropriately described the hope and elation of the entire nation; they were seen as the conduit by which the penury of the country would be eradicated. Moreover, many in the industry have called it the largest recent find in Africa and as a result, numerous international companies have begun vying for the exploration licenses for the remaining blocks. Thus far there have been over forty applications by international companies since 2007 attempting to take advantage of Ghana's oil boom as well as the stable political environment, unlike many on the African continent, which Ghana provides (Manteaw, 2009).

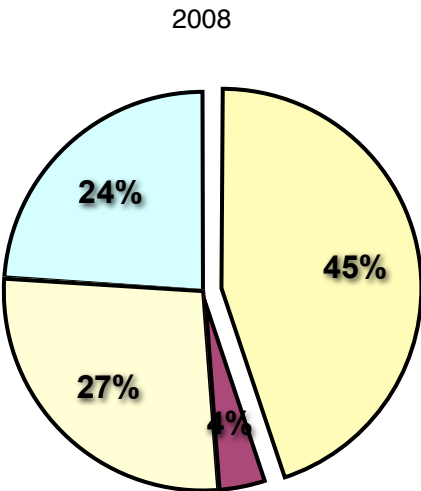
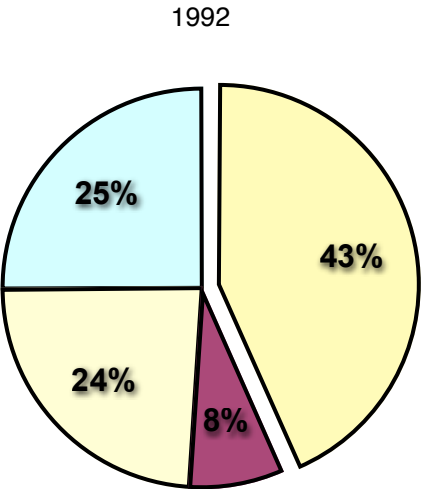
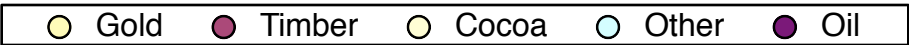
The Jubilee Fields are situated on the West Cape Three Points and Deepwater Tano concession blocks, 60 km off Ghana's western coast. This location was heavily disputed by the Ivory Coast claiming that the area belonged to their territorial waters; a dispute which is currently is being arbitrated by the United Nations. Beginning in December of 2010, the Jubilee Fields area was set to produce 70,000 barrels per day of oil which eventually would increase to 120,000 barrels of per day in June 2011. The Jubilee Fields have 600 million barrels of proven reserves and a potential of over 1.5 billion barrels of Oil. According to the International Monetary Fund (IMF), oil production will add \$1.3 billion dollars per year by 2013 (Moss et al. 2009), thereby bringing in cumulative revenues of \$20 billion over a production period of 2012-2030 in the Jubilee Fields alone. To put this revenue into perspective, \$1.3 billion dollars is equal to nearly 40% of government revenue in 2009. Moreover, these numbers may be considerably

higher due to several other oil fields which have been found, and others which have shown tremendous potential.⁵ Therefore, as figure 9 demonstrates, the gold and cocoa commodities which have been the mainstays of Ghana's economy will soon be surpassed by oil and gas as a percentage of the country's exports by 2015.

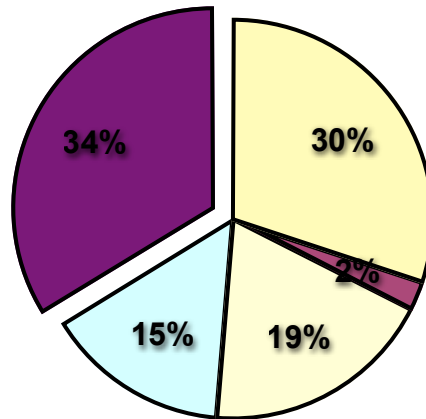
Unfortunately, as Steven (2008) reiterates, "There is no automatic positive link between the revenue generated from exploiting natural resources and spending that supports economic development and increased social equity." Undoubtedly, revenue will enter into the Ghanaian economy; however, income from oil tends to be disproportionately distributed so that only a small few benefit while the majority are left in poverty (Humphreys et al., 2009). The question, therefore arises, what mechanisms has the government established to equitably distribute the revenue from the oil and ensure the protection of the environment?

⁵ IMF estimates are based on the early predictions of the Jubilee Field's capacity (120,000 bbd), however subsequent appraisals have shown larger production potential. Also, Ghana's most recent oil find, the Tweneboa and Enyenra Fields, may hold an additional 400 million barrels of oil and a development application is set to be submitted in early 2010, with a possible first production date set in 2014.

Figure 9: GDP Percentage of Ghana’s exports, 1992-2015 Moss et al., 2009)



2015



4.2 - Central Actors in Ghana's Oil Industry

The dynamics of the international oil industry are influenced by multinational oil corporations (MOCs), host governments, civil society organisations (CSOs), and International Financing Institutions (IFIs) such as the World Bank and the IMF.

The corporations “wield their clout to maximise their own benefits, in large part shaping the regulatory environment in their own interests” (Humphreys et al., 2007). In many cases, the corporations have sought and have been successful in limiting government regulations which would restrict environmental damage or the responsibility of having to pay for the costs of environmental damage they inflict. In addition, they are skilled in contract negotiations and often have an unfair advantage in knowing the value of the resource in comparison to host governments (Humphreys et al., 2007). This unequal expertise allows MOCs to have stronger bargaining power and thus a disproportionate rate of return for their investment.

Host governments are the next important players. They are responsible for representing the best interests of their citizens. However, to attract MOCs, governments will often circumvent their own national laws (typically environmental laws) to attract foreign investment. Also, they will seek to limit transparency to make it more difficult for their citizens to know how much revenue is being received. The society at large is the other important player and perhaps the most marginalised group. The citizens of countries are typically denied valuable information about the extractive-industries related decisions of their governments. Moreover, they are left to deal with the perverse environmental and social consequence of oil exploitation often perpetuated by their own government (Kloff and Gary, 2003).

The commercial partners in Ghana's oil development include Tullow Oil which has assumed the primary operator role of the gas fields with a 34.7 percent stake in the project. The other partners include Sabre Anadarko (23.49 %), Kosmos Energy (23.49 %), Sabre Oil and Gas (2.81%), EO Group (1.75%) and the Ghana National Petroleum Company (13.75%)⁶ (CSPOG, 2011). There seems to be an apparent conflict of interest with GNPC having the role of advising the Ministry of Energy (according to PNDC Law 84) while at the same time participating in petroleum operations for commercial reasons. Therefore, Gary (2009) suggests that there should be a clear separation of the regulatory

⁶ The GNPC holds exclusive rights in the petroleum sector as de facto competitive authority. Its duties include allocating acreage by direct negotiation and participating as state partner in joint ventures and contracts. By holding exclusive rights to Ghana's onshore and offshore basins, the GNPC is the sole channel by which any foreign oil company gains access to petroleum exploration.

and commercial functions of the GNPC to avoid the high possibility of corruption and the politicisation of the economy.

4.3 - Legal and Political Development

Politically, Ghana has been hailed as being a leader in democratic government (Gary, 2009). Unfortunately, “Other rules of democracy limit how power is used and these are concerned with checks and balances on government abuse of power” (Collier, 2006). As such, there have been tremendous vacancies in these checks and balances and despite Ghana’s praise and accomplishments, there remain many holes in its regulatory oversight and laws. In contrast to the famed reputation of Ghana’s democracy, Booth et al. (2005) and Nugget (1999) have noted that Ghana exhibits political characteristics of a “fractionalized democracy” and perhaps some lingering remnants of past autocracy.

The nation has been notorious for having new governments take office and overhaul the decisions of previous regimes; in the process throwing out good decisions with the bad (Manteaw, 2009). For instance, any prudent developments that aid in national development is always undermined or disregarded by incoming governments simply, because an opposition party perhaps was the proponent of such decisions. For this reason, the policy development of the previous Kufour-led administration was nullified after his party was defeated in the 2008 election. This caused tremendous delays in policy development due to the change in government and political wrangling.

For instance, a bill designed to establish a “Ghana Petroleum Regulatory Authority” had not passed before the new government took office. Thus Ghana embarked upon oil production without any legislation empowering an independent regulator for the oil and gas sector. Also, plans to introduce a local content bill, a local participation bill, a Petroleum Exploration and Production Bill and Petroleum Revenue Management Bill were all unsuccessful (at being adopted). Therefore at this point, the entirety of the regulatory framework and oversight over Ghana’s petroleum sector is summed up by a few dated laws which contain several gaps that need to be addressed:

- The Ghana National Petroleum Corporation (GNPC) law of 1983 (PNDC 64) gave the GNPC the right to undertake exploration, development and production of petroleum.
- The Petroleum Exploration and Production law of 1984 (PNDC Law 84) placed the responsibility for regulating the hydrocarbon sector with the Ministry of Energy.
- The Petroleum Income Tax Law of 1987 (PNDC Law 188).

This low volume of updated regulations, policies and laws relating to the oil industry, meant that Ghana has eagerly developed its oil fields without important regulatory conditions. The government seemed content with an ad hoc approach to oil management. According to Humphreys et al. (2008), this exemplified the error of many resource cursed nations that do not properly pace the development of mineral exploitation.

4.4 -- Challenges of Oil Development in Ghana

The apparent challenges to Ghana's continued development are quite significant. They are marked by weak and unenforced environmental standards (Appiah-Opoku 2001), coupled with the lack of specific regulations to sustainably manage the upstream oil industry. Also, according to Kloff and Wicks (2004), the West African region (because of inexperience and lack of technical capacity) is a priority region for improvement of its oil spill response capabilities and its level of preparedness against pollution of the coastal environment.

Another worrying aspect of Ghana's preparation for oil development is the fact that the Government of Ghana (GoG) has failed to make significant progress on budget openness since the Jubilee Fields were discovered (CSPOG, 2011). According to the Civil Society Platform on Oil and Gas (CSPOG, 2011), the executive branch's budget proposal is the "most important policy instrument, as it presents the ways the government plans to raise revenues and where these funds are allocated." In Ghana's case the government has not provided specific financial information in the budget, such as benchmark oil prices which will be used in the budget, as well as information regarding "transfers to public corporations, expenditure arrears, and contingent and future liabilities and quasi fiscal activities" (CSPOG, 2011)

For the above mentioned reasons, former president of Ghana, John Kufour described best the challenges Ghana faces when he said, "It is a difficult and tortuous endeavor to move from the generation of oil wealth to its proper investment" (Gary,

2009). While interviewing Dr. Steve Manteaw, campaign coordinator for the social activist group, Integrated Social Development Center (ISODEC)⁷, he shared that Ghana had faltered in developing the proper sequencing of policies and laws: Ghana first required an overarching policy for the oil and gas industry. Afterwards, it was necessary to follow the policy with laws and regulations to operationalize this vision (Personal Communication, Dr. Steve Manteaw, August 1, 2010, Accra, Ghana). He said, “I have a problem with the approach of the government to manage its oil and gas sector, they are currently working out the policy, legal and regulatory framework in tandem and this simply should not be.” (Personal Communication, Dr. Steve Manteaw, August 1, 2010, Accra, Ghana) Dr. Manteaw’s evaluation precisely intimated that, in the face of unprecedented stress which would soon befall Ghana’s citizens, the country had not passed a single law to ensure the prudent management of oil revenue and the protection of its environment.

Interestingly, Ghana was one of 176 states that signed the 1992 Agenda 21 action points for sustainable development in Rio de Janeiro. Despite this agreement, sustainable development has not seemed to have been a priority area for the government, especially pertaining to its oil industry. The international recommendation as stipulated in Agenda 21 says that plans for oil and gas exploitation should protect the marine environment and should be developed within the context of national strategies. Unfortunately, without a

⁷ Steve Manteaw is one Ghana’s experts in extractive industries policy research and advocacy. He has been a member of the World Bank Extractive Industries Advisory Group and represents PWYP-Ghana on the Ghana EITI Multi stakeholder Group.

national strategy governing Ghana's oil and gas sector, complying with this recommendation and other guidelines for Agenda 21 is virtually impossible.

Furthermore, the haste with which the government awarded exploration licenses to the Tullow Oil Company may have demonstrated the true motives of the government-to quickly gain oil wealth. The president and General Manager of Tullow-Ghana was quoted as calling the Jubilee oil development the "fastest-ever full-scale comprehensive development" (Gary, 2009). Indeed, Ghana had achieved first oil in less time than Angola's Girassol Fields and Nigeria's Bonga fields, despite having roughly the similar status and significance. In contrast to the three years that it took the Jubilee Fields to be developed, both of these fields took five years from the date of discovery to its commercial production.⁸ Moreover, it is usually in the time between discovery and production that all the necessary institutions such as government agencies, laws and regulations are established to be able to effectively manage the sector. Also, this time allows for environmental assessments to be produced by the proponents of the project so that anticipated negative environmental impacts can be mitigated.

4.5 - Lessons From Ghana's Mining Sector

As Ghanaians consider how best to invest their oil endowment, the reality unfortunately is that mineral resources in Ghana have not left any identifiable blueprint for ensuring sustainable development and poverty alleviation. Though Ghana is the

⁸ Information derived from internet article by Energy Global titled: First Oil Proves Historic for Ghana
<http://www.energyglobal.com/index.aspx>

second leading exporter of gold in the world (mining constitutes the largest source of foreign direct investment) the sector has been deficient in helping to reduce the poverty and development challenges in the country (Manteaw, 2009).

Consequently, the Ghanaian government has myopically focused on accruing revenue from the gold sector without factoring in the social consequences and the adverse stress that it places upon the environment. When Dr. Steve Manteaw was interviewed about the significance of the mining sector to the achievement of sustainable development in the country, he revealed that studies had been conducted by Ghana's Environmental Protection Agency (EPA) and the World Bank showing that mining operations had had a negative effect on the environment. This effect equaled between four and ten percent of the country's GDP, respectively. Thus, when these figures were compared to an economy which typically grew at 6% per year, a simple cost benefit analysis showed that the environment and the local people were being severely cheated (Personal Communication, Dr. Manteaw, August 1, 2010, Accra, Ghana).

Furthermore, as a result of not having strong financial institutions, Ghana is among the low-income countries in the world that have lost most of their entitled taxation (DanWatch and Concord Danmark, 2010.) The World Bank has indicated that the government lacks the capacity to collect revenues and audit payments from gold mining companies (Manteaw, 2009). Dr. Manteaw confirms that it was only after Ghana became compliant with the Extractive Industries Transparency Initiative (EITI) in 2010 that their inefficiency in collecting oil revenue became evident. (Personal Communication, Dr. Manteaw, August 1, 2010, Accra, Ghana). The EITI audit revealed that over several years

Ghana had received less than the amounts it deserved from royalty payments by the mining corporations. For instance, during a span of three years, the price of gold had more than doubled; however, the government was unable to factor the changing price of gold and the appropriate tax rates for adequately collecting revenue. According to the Ghana Chamber of Mines, a reported U.S \$53.8 million was paid in royalties to the Ghanaian government by all mining companies in 2007. However, a report under the Ghana Extractive Industries Transparency Initiative (EITI)—reconciling reported government receipts and reported Company payments, including royalties, dividends, corporate taxes, etc. showed a total of 40,635,725 Ghanaian cedis, or approximately U.S \$34.8 million in 2005 (Gary, 2009). Unfortunately, given that oil accounting is much more complex than mining, as Gary, (2009) and Humphreys et al., (2009) discuss, the readiness of the government to follow through the tax computations of oil companies is deeply in question.

Furthermore, the GoG's past record in handling the extractive industries has demonstrated many other problems with its environmental management. Gary (2009), notes that spanning many years there has been poor coordination between the EPA and the Mineral Commission on Environmental Impact Assessments which have led to grave impacts of arsenic poisoning in local waters and soil. According to Marful-Saul (2009), a 2007 UNCTAD world investment report determined that foreign companies which engaged in mineral activities in Ghana contributed immensely to air and water pollution which amounted to about 10 percent of all industrial pollution in Ghana. In response, residents of mining areas have repeatedly complained about the ineffectiveness of

institutions established to ensure compliance with environmental regulations, namely the competence of the EPA. In 2001 there was a cyanide spill caused by Gold Field Ghana Limited which contaminated two local rivers. This caused serious health problems for the local communities and the death of several fish and plant life. It required the initiatives of the local NGO, the Wassa Association of Communities Affected by Mining (WACCAM), to pressure the Ministry of Environment, the local EPA and the Water Research Institute before any investigative action was taken. WACCAM described the local office as being self-centered and treating environmental issues of public concern as confidential information (Personal Communication, Richard Elima, July 4, 2010, Accra, Ghana)..

The UNCTAD report goes on to mention that whatever environmental compliance is adhered to by these MNC stems from conditions attached to loans from international financial institutions rather than on the strength or the enforcement of domestic legislation in Ghana. In the following chapter we see that while that bureaucracy has been established to handle environmental issues in Ghana, there are many constraints that exist within Ghana which, if not changed, will prove detrimental to the achievement of sustainable development in the oil and gas industry.

5.0 - Environmental Management in Ghana

According to Appiah-Opoku (1994), there was a surge of environmentalism in the 1960s which for a long time was limited to the industrial countries of the northern hemisphere. Thus, the effects of this movement did not penetrate the societies of many developing nations, especially in Africa. The results of this were that many development projects such as the construction of the Volta Dam in Ghana, and the Aswan High Dam in Egypt, were undertaken without conscious planning for environmental protection Appiah-Opoku. It must be added, however, that the slow transfer of environmentalism to Africa was such because the industrialization processes, which had alarmed so many in Europe and North, had not been a priority during a period where most African states were still under colonial rule. Therefore, with little opportunity to use natural resources for national benefit, there would have been no incentive to protect the environment.

Nonetheless, 1972 was a pinnacle moment in African history for environmentalism. It was a turning point when the shroud of ignorance was lifted and attitudes and perceptions of policy makers and major donor agencies became focused on environmental issues and problems in the developing world. According to Appiah-Opoku (2001), a catalyst which helped cause this change was the United Nations Conference on Human Environment in Stockholm. Shortly after this juncture, the discussion no longer hinged on whether it was a necessity to incorporate environmental consideration in developing countries, but rather the topic focused on the method by which the Environmental Impact Assessment (EIA) could be incorporated into the planning, management and implementation of development projects (Appiah-Opoku, 2009).

5.1 - Environmental Protection in Ghana

As the first of Africa's colonial nations to receive independence in 1957, Ghana added another first in 1973 by establishing the first governing body in Africa to focus on issues pertaining to environmental management (Appiah-Opoku, 2001). The Environmental Protection Council (EPC) was given the authority to advise the Government of Ghana (GoG) on all issues relating to the environment. Soon after its inception, the EPC sought to introduce into legislation a systemic procedure for evaluating environmental impacts for major development projects within the country. In 1981, the EPC seized the opportunity to accomplish this goal, by advocating that provisions be included in the country's investment code. This code sought to attract large scale foreign investment into the country; the EPC deemed it important to safeguard the country against the environmental degradation and deleterious effects that these investments could bring.

With environmental protection as its driving force, the EPC in 1985 set up a committee to examine the methods by which an EIA could be developed in the country. The fruit of their labor was the inauguration of a National Environmental Action Plan (NEAP) in June of 1989. NEAP can be said to be Ghana's comprehensive environmental policy paper. It contains six main working documents on mining, industry and hazardous chemicals, marine and coastal ecosystems, human settlements, forestry and wildlife, land management, and water management.

NEAP outlined the need for an environmental quality control program in the form of an environmental assessment that would be required for all new projects with the

potential of harming the environment. NEAP and other developments strengthened the EPCs argument for formal legislation backing the EIA process, and in support the Ghanaian parliament passed Act 490 in 1994. Under the Act, the EPC was renamed the Environmental Protection Agency (EPA) and it was given the legal backing for requesting proponents of major development projects to produce and submit an EIA. Thus, the EPA had the authority to regulate the environment by ensuring that every project with the ability to harm natural resources took the necessary measures to protect the environment, public health, and safety.

5.2 - Introduction to Environment Impact Assessment

There are now several mechanisms for protecting the environment in Ghana. These include the establishment of an Environment Protection Agency (EPA), a process for environmental impact assessment (EIA), and a commitment to environmental protection which is backed by law. Unfortunately, most of these laws suffer in their effectiveness because supporting agencies are very weak and lack the capacity to enforce laws (Appiah-Opoku, 2001). In addition, it has been observed that though Ghana may have a process for EIA, it may fall considerably short of international best practices. Moreover, there are serious constraints to effective environmental management which include constraints with respect to EIA experts, monitoring, and the incorporation of civil participation and indigenous knowledge.

One important tool of environmental management is the environmental impact assessment (EIA). EIA is a decision making tool utilised to identify and evaluate the potential environmental impacts of certain proposed development actions in order to mitigate adverse consequences (Cashmore, 2004). The first EIA system was formalised by the U.S National Environmental Policy Act (NEPA) of 1970 as a political response to growing concern about the environmental consequences of economic development, failure of existing decision making tools and changing industrial development factors post World War II. According to Cashmore (2004), EIA is viewed as a tool which strengthens environmental governance to empower stakeholders, promote an egalitarian society and foster a very strong interpretation of sustainable development. Likewise, Sadler (1996) and Sinclair et al. (2008) recognise that EIA is a key element in participatory resource and environmental management which aids in the achievement of sustainable development.

To date, about 169 countries around the world have incorporated the American EIA template as part of their country's environmental management (Netherlands Commission of Environmental Assessment, 2010). However, despite the efforts of various international organisations to aid in the development of effective EIA systems, there are arguments that EIAs, and decisions based on them in developed countries, are poor (Alshuwaikhat, 2005; Appiah-Opoku, 2001). Alba (2010) asserts that much of the emphasis of the EIA process in Africa is directed towards the approval of oil and gas projects rather than taking a life cycle approach to the issues which relate to environment and to the society.

According to Cashmore (2004), an environmental assessment system is defined as a set of rules, regulations, and capacities of the proponent, authorities, civil society agencies and project-affected communities; all determinant factors in the performance of EAs. The critical EIA components are the descriptions of project and the environment, the prediction of potential hazards of the project, and the evaluation of the project and its alternatives. In general, four different EIA stakeholder groups can be identified. A project proponent is the usually responsible for a physical undertaking like the construction of a gas pipeline or reclamation of land. Another stakeholder is the competent authority (CA), responsible for issuing licensing and permits upon approval of an EIA, the civil society groups (non-governmental organisations who attempt to represent the interests often ignored by the political and market actors) and those communities and individuals who participate in public hearings and information meetings and are directly impacted by a given project (hereafter these stakeholders will be referred to as the EIA key actors). In order for an EIA to be effective, though not the only requirement for effectiveness, it must involve the cooperation of all EIA key actors to ensure that environmental and social considerations are taken into account in all decisions about undertakings that may pose danger to the environment or to the society.

5.3 - The Role of the EPA in Environmental Management

As the environmental decision making authority under Ghana's EIA regulations, the EPA is responsible for determining what developments require a full EIA. The purpose of environmental management according to the EPA (2002) is to "identify human

activities that may threaten and affect the quality of the environment, implement mitigation measures at the appropriate time to manage these effects, ensure that anticipated effects are maintained within the levels predicted, manage anticipated effects before they become a problem and, optimise environmental protection.” Initially, an environmental permit must first be obtained by a proponent before the commencement of any work, thus the submission of an application for permit is required.

The screening report of the application will be deemed by the EPA as either approved, objected to, requires the submission of a full environmental report or the submission of a full environmental impact statement. An unfavourable decision of significant impact results in the proponent being asked to prepare a scoping report where all affected stakeholders are consulted. The report involves a rigorous and detailed analysis of the potential impacts of the undertaking. The outcome of the scoping report may make it necessary for a full scale EIS that the proponent may be asked to produce.

5.4 - Constraints with Ghanaian Environmental Management

5.4.1 -Constraints with EIA experts

It has been noted by Kakonge (1999) that Ghana along with many other African nations suffers from work force shortages, especially in environmental disciplines. This assertion is documented by Appiah-Opoku (2001), whose research ranked the lack of organised baseline data and lack of local EIA experts as the most significant constraints to the Ghanaian EIA procedure. According to Appiah-Opoku (2001), the insufficient baseline information has been a key element in the general economic decline in Ghana.

Particularly absent are updated information and data on the following: ground water and wetland ecosystems; soil, water, and air quality; inventory on pollutant emissions; and noise pollution levels (Appiah-Opoku, 2001).

5.4.2 - Constraints in Monitoring

Ghana has also shown a lack of capacity in monitoring and inspecting projects to ensure that proponents are following environmental guidelines. However, monitoring is “a crucial and integral activity of the EIA. Indeed, only through monitoring [can] the actual effects of any activity...measure the validity of pre-project predictions” (Kakonge, 1999). Among the reasons given for this constraint in the EIA process is the lack of equipment such as laboratories for testing, data collection, and monitoring. Therefore, there is a need for simpler procedures and techniques that local authorities can apply, as well as a greater realisation of the importance of baseline data. Coupled with these shortcomings is the lack of capital and financial investment for training staff and acquiring transportation vehicles for the authorities to carry out their assessments. Citizens also have a very important role in the EIA process which is often overlooked. The incorporation of citizens in environmental management could very well entail their involvement in monitoring, as mentioned below.

5.4.3 - Constraints with Civil Participation/Indigenous Knowledge

According to Appiah-Opoku (2001), the inclination of the Ghanaian government has been to rely on scientists from within and outside government agencies for the

identification and prediction of environmental impacts. Although the role of the scientific method cannot be replaced, it has seldom been able to answer all the EIA questions. For example, the involvement of native people during the impact assessment study conducted for the Beaufort Sea Hydrocarbon Production and Transportation, and the Norman Wells Oil Field Development projects in Canada revealed insightful nontechnical information that proved to be invaluable to researchers (Appiah-Opoku, 2001). The contributions of the native people provided useful baseline and monitoring information which shows that the involvement of indigenous people in impact assessment studies is crucial, not only because it “balances the apparent bias of proponents but also it helps to reveal and evaluate the nontechnical choices that underlie much of the decision making on environmentally significant undertakings” (Olokesusi, 2005).

Moreover, indigenous knowledge in Ghana is not used enough to supplement the scant scientific data and information that exists in the country, (Personal Communication, Anonymous Participant, July 3, 2010, Accra, Ghana).. The civilian population are not engaged in an efficient manner to contribute to the public meetings which are mandated by law to accompany EIAs. For example, a period of twenty days has been allotted by law for the public and civil society organisations to prepare a response to the issues they feel to be pertinent. However, before the public has a chance to review the document (having only twenty days to do so), a week has passed leaving a limited amount of time to understand the report. “Given the technical language in the EIA reports, the public have no chance to fully comprehend all the implications of a project” (Personal Communication, Anonymous Participant, July 3, 2010, Accra, Ghana). Even the NGOs

have difficulties understanding the reports and struggle to explain the issues to the public within the given time and with the current knowledge and capacity. This significantly reduces the importance of public consultations and weakens the value of the EIA.

Moreover, the public's biggest grievance with the EPA was its handling of the Jubilee Fields EIA. It was the opinion of many in the civil society that there were too many deficiencies in the document which should have been amended by the project proponents before approval was granted (Personal Communication, Stephen Yeboah, July 27, 2010, Accra, Ghana). As will be discussed below, this was clearly a situation where economic prospects trumped good environmental governance.

5.5 - Analysis of Jubilee Phase 1 Development Process EIA - Introduction

The Ghanaian Environmental Assessment Regulation (1999) mandated that an EIA be completed for oil and gas field development or any other undertaking which had the potential for adversely affecting the environment. Due to the Ghanaian environmental legislation, the extraction and development of the Jubilee fields could not advance to its commercial stage without sanctioning by the Ghanaian EPA. Therefore Tullow Oil was mandated to conduct an EIA of the Jubilee Phase 1 Development Project. A study commissioned by Oxfam America in 2009 on the environmental material for the first phase of the Jubilee project summarised the weaknesses in the assessment (Pacific Environment 2009). The analysis of the Jubilee Fields EIA borrows from this report as well as the Canadian Environment Assessment Agency's (2009) guide to the preparation

and comprehensive study of the EIA for proponents and responsible authorities (CEAA, 2009)

According to Lind (1983), “The application of the environmental impact assessment (EIA) reflects the economic and political system of each country that uses it.” As a result, evaluating the contents of this EIA is critical in assessing the strength of Ghana’s governance and environmental management as well as what improvements are needed to sustainably manage Ghana’s oil industry. As the very first EIA of its kind in the country, this EIA set a precedent for subsequent oil extraction undertakings in Ghana. Simultaneously, it would be instrumental in forming the basis for Ghana’s planning and decision making concerning the petroleum sector.

5.5.1 - Description of Project

The development of the Jubilee Fields was to be undertaken in phases, with subsequent phases depending on the “success” of Phase 1. The initial phase of development was to consist of production wells, water injection wells, and gas injection wells that would be gathered through a network of subsea structures and connected to a Floating Production Storage and Offloading (FPSO) vessel. The FPSO is a single hulled, ship-shaped hydrocarbon processing facility that separates crude oil and natural gas from the water. After this point, the processed crude is stored in the facility’s storage tanks and offloaded to oil tanker vessels for distribution to international petroleum markets every 7 to 10 days.

The Phase 1 EIA was highly criticised within the media by civil society organisations on radio programs and television stations in Ghana. One representative of an Accra-based NGO, described the document as merely cosmetic, meant only to satisfy environmental legislation rather than producing an outcome that encompassed their opinions and contributions (Personal Communication, Anonymous Participant, July 3, 2010, Accra, Ghana). Much of the criticism of this type came from mitigation measures and project alternatives which many CSOs and NGOs in Ghana felt were purposefully ignored.

5.5.2 - Project Alternatives & Mitigation Measures

According to Ebisemiju (1993) an EIA should be initiated at the inception of a proposed project and before any site preparation to have a real opportunity to evaluate among alternative routes of action. These actions can be alternative sites, designs, feasibility studies strategic studies and even a “zero” action or the alternative to do nothing. In the Jubilee Phase 1 report, no alternatives are provided for the project, an outcome, according to the CEAA (2009), that arises when an EIA is started too late in the project. According to Gary (2009), a chief operating officer was reported as saying that, “A strategic decision was made to pursue a parallel, fast track appraisal and development strategy due to combination of factors, including the size of the discovery, the project’s importance to the partners, and a ‘strong encouragement from Ghana’s government.” As this statement indicates, there seemingly was an insufficient government commitment to

alternatives and that they government and its partners perhaps were more keen on capitalising on oil revenue.

According to Lee et al. (1999), a key objective of an EIA is to describe and develop practical and cost effective measures to avoid, reduce, remedy, control and compensate for the potential negative effects of a given project. As well, mitigation should continue throughout the entire life cycle of the given project without preference for or restriction to any single stage. Unfortunately, the focus of Tullow's Phase 1 EIA concentrated on the activities in the commissioning stage solely and mitigation considerations for the project design, initialisation and decommissioning stages were omitted. Granted, mitigation is most affected in the design phase; however, it may have been excessively optimistic for the proponents to assume that the design phase alone could have avoided all associated impacts of a project of this size.

Moreover, the mitigation plan is lacking in many other areas, which Lee et al. (1999) point out are necessary parts of a comprehensive EIA. These include the following: a feasibility assessment of all the proposed mitigation measures, a schedule indicating when and where mitigation will be implemented and an indication for the sources of funding for implementing the mitigation objectives (Lee et al., 1999). Also, part of mitigation often involves simply modifying or delaying certain scheduled dates to provide more time for assessing all alternatives and mitigation conditions. As discussed below, one such alternative for the project which perhaps required further deliberation by the project proponents, was in the choosing of the oil extraction vessel.

5.5.3 - Floating Production Storage Vessel (FPSO) Selection

The oil industry presents many challenges to economic development which has garnered much of the attention of the resource curse literature. However, of equal significance is the effect of oil spills and other environmental hazards. The Exxon Valdez oil spill was one of the first indications to the international community of the potential detrimental effects of oil related disasters. These impacts again received notoriety in 2010, due to the environmental damage caused by British Petroleum's (BP) Gulf of Mexico accident.

One of the key aspects to oil extraction which determines the efficiency of the process, and the reduction of oil spills, is the design of the Floating Production Storage and Offloading Vessel (FPSO). The Jubilee Field Phase 1 project will use a refurbished single hulled oil tanker which was intended to be sold for scrap after being in operation for over twenty-five years. International rules (MARPOL) no longer allow this type of vessel to operate as a conventional tanker for petroleum exploitation, however, there is no legally binding rule for the design or hull configuration of FPSOs.

While some scientists believe that the climate and sea conditions of the West African Region are temperate enough to use this older design, "Other scientists are in disagreement with this point of view and believe that double hulled FPSO's should be used as standard everywhere in the world" (Kloff and Wicks, 2004). They further assert that the double-hulled design must be used as a precaution especially in areas of important marine biodiversity. This is also true in regions where high collision risk, due

to dense maritime traffic, is predominant. Evidently the West African marine ecosystem combines both of these characteristics.

Furthermore, the joint venture partners attempted to minimise the potential negative impact of oil spills in the Jubilee Field development. However, the West African region is a priority region for improvement of its oil spill response capabilities. The region has been designated as a category 2 (medium risk); however, it is probable that may soon fit in to category 3 (high risk) with the increase of offshore development (Kloff and Wicks, 2004). The project proponent attempted to make comparisons between total oil production and the much smaller percentage of total oil spilled as an explanation why oil spills are not a threat to the Ghanaian environment. However, whether a spill is small in relation to the global percentage, this does not infer that it cannot have devastating effects in a coastal environment such as Ghana's coast.

Moreover, the accidents that have already taken place by crude oil transporters in the African continent are listed among the amongst the world's worst oil spills, as Alemagi (2007) points out. For example, in 1991 an explosion aboard the supertanker, ABT Summer, off the Angolan coast spilled 260,000 tonnes of oil. Similarly, a platform accident in 1980 in Nigeria polluted the sea with 54,000 tonnes of oil. Although the EIA acknowledges the potential for some impacts due to oil spills, it concludes, without supporting data, that weathering and spill response capabilities will keep the impact small. Finally, the EIA does not use computer generated models of oil spill dispersion patterns, or spatial planning maps showing sensitive areas of biodiversity as is typical for an EIA of this kind.

Finally, an offshore development of this magnitude may not have many viable options for extraction; nonetheless, the choosing of the Floating Production Storage and Offloading Vessel (FPSO) should have received much deeper consideration. The EIA document provides no rationale for the use of the single hulled vessel over the more superior and widely used double hulled model. So while virtually the whole world has progressed to better technology for the extraction of crude oil, Tullow Oil with the approval of the government, selected an inferior vessel for exploiting oil.

5.5.4 - Impact Identification and Assessment

Under ISO 14001, an international standard for environmental management systems, an environmental impact is defined as any adverse or beneficial change which, wholly or partially results from an organisation's activities, product or services (International Organisation for Standardisation, 2004). These environmental impacts for offshore oil development is documented by Salter and Ford (2001) into the following categories:

- Direct: those impacts associated with the actual installation of structures, the spillage of chemicals, emission of a gas that immediately affects the environment.
- Secondary: impacts arising as a consequence of direct impacts.
- Indirect: impacts due to related activities and possible associated development outside the physical extent of the field development.

- Cumulative: impacts that result from chronic effects which result from a continual discharge or emission, building up over time resulting in progressive damage to environmental quality.

The key impacts of the Jubilee Field Phase 1 development which are identified in the report are the following: impacts to water, impacts to the atmosphere, waste management, biodiversity, socio-economics and accidental events. The EIA seeks to identify the impacts of the project by predicting the magnitude of the impact in comparison to the ecosystem (or other resources and sinks). The term “magnitude” as indicated in the EIA describes the predicted impact on both the natural and social environment including temporal and spatial extent of the area affected and the nature of change. “Magnitude and value sensitivity are looked in combination to evaluate whether an impact is, or is not, significant and if so its degree of significance, (defined in terms of Minor, Moderate, or Major)” (Environmental Resources Management, 2009). The following is the criteria that was used to determine impact significance for the Jubilee Fields oil development (Environmental Resource Management, 2009):

- A **High Magnitude Impact** affects entire populations of species in sufficient magnitude to cause a decline in abundance and or/change in distribution beyond [the limits of] natural recruitment (reproduction, immigration from affected areas) [and the impact] would not return that population of species, or any other populations species dependent upon it, to its former level within several generations.
- A **Moderate Magnitude Impact** affects a portion of a population and may bring about change in abundance and/or distribution over or more generations, but does

not threaten the integrity of that population or any population dependant on it. A moderate magnitude impact may also affect the ecological functioning of a site, habitat or ecosystem but without adversely affecting its overall integrity.

- **A Low Magnitude Impact affects** a specific group of localised individuals within a population over a short time period (one generation or less) but does not affect other tropic levels or the population itself.

The majority of impacts that are listed are said to have moderate or low significance according to the project proponents (Environmental Resource Management, 2009). However, Tullow used an ecological impact identification method based on evaluations which were founded twenty years ago, and there are no explanations provided why this particular method is applied. It is possible that this outdated model was opted for because modern impact evaluations would have made the approval of the EIA considerably more challenging against the criteria of the International donor organisations as well as the Ghanaian EPA. Impacts found to have high magnitude impacts would have required more time spent on project alternatives and mitigation, thus not a single impact in the EIA was listed as having a high magnitude impact. According to the civil society organisations, Tullow had already put together its development plan and thus it did not want controversies or conflicts to arise during public debates because such disputes would have caused increased capital expenditure by the company as well as unwanted time delays (Personal Communication, JoJo Grant, August 10, 2010, Accra, Ghana). Consequently, the EPA seemed not to respect the free, prior and informed consent

of communities before licenses were granted (this is mandated in the Agenda 21 Action points to which Ghana is signatory to).

It was evident that Tullow and its partners had already moved forward with the project even before the licenses were approved. Tullow's commitment to environmental protection was also in question. Critics, in another petroleum project in the country of Uganda, show that Tullow may have a track record of abuse of the EIA process and disregard for public perception. A press statement was attributed to Mr. Peter Javis, senior Manager of Tullow-Uganda where he states, "One square kilometre oil refinery will be built in Chaise-Tonya Wildlife reserve, Hoima district before the end of the year *despite concerns by environmentalists*" (Civil Society Organisations, 2008)

5.6 - Chapter Conclusion

There are many challenges and constraints to environmental management in Ghana as the preceding section has demonstrated. Perhaps the most worrying aspect of Ghana's environmental management, as discussed in this chapter, is the application of EIA procedures and the granting of licenses for development projects. Undoubtedly, the loopholes which allow companies to circumvent the normal use of the EIA will always undermine environmental protection in Ghana, unless this issue is addressed by the government. Evidently, Ghana has a problem with showing the relationship between impact assessment and the decisions leading to sound environmental management.

Moreover, Ghana has seemingly ignored the internationally accepted use of EIA. This is demonstrated in the Jubilee Fields EIA, which in spite of public protest of its

many deficiencies received approval by Ghana's EPA. Unfortunately, the approval of this EIA has set a precedent for the quality and standard of EIAs which will subsequently receive approval in Ghana. Proponents of future oil and gas development projects may come to expect the approval of licenses after submitting substandard EIAs of similar quality. This is why there is a call by many in Ghana's civil society for there to be a moratorium in the granting of licences until these deficiencies have been properly addressed. The government, however, has refused these requests and has continued to offer multinational oil companies access to concession block licenses with the same oversights still remaining.

Finally, public confidence in the GoG has been greatly been undermined by the ineffectiveness of the EIA process and marginalization of the primary agents of Ghana's natural resources - its people.

6.0 - RESULTS AND DISCUSSION FROM FIELD RESEARCH

The preceding literature has described many consequences of the resource curse, namely the societal instability, environmental costs, and economic failures of many resource rich countries mainly in developing countries. Also previous sections have documented the best practises (Norway, Botswana, Dubai) involved in sustainably exploiting oil, many of which had not been established in Ghana before the onset of its oil industry in 2011. These practises include mechanisms to handle the Dutch disease, transparency and anti-corruption initiatives, and prudent revenue management (EITI implementation, the use of natural resource funds, and even direct distribution of oil wealth). Chapter five documented the positive aspects of environmental management (strong public consultation processes and compliance with the best practises of the EIA process) which has proven to be among the weak parts of GoGs governance.

The following section presents the results of fieldwork and the interviews which asked specific questions to decipher what Ghana's citizens in general believed were the major constraints and challenges to sustainable exploiting oil in Ghana and the ways that Ghana must proceed to benefit as a society from its oil industry. This section will comprised primarily of the observations and themes which emerged from the interviews and the participant observations.

6.1 - Socio-economic Observations of Oil in Ghana

During the field work, the country was bustling with economic activity. New infrastructure and high rising condominiums were being built in the capital city,

displaying drastic changes in Accra's downtown landscape. These developments were likely helped along by the anticipated oil wealth and the myriad of returning Ghanaians and other personnel who would be drawn in to capital as a result of the country's Jubilee Fields project. In close proximity to these new infrastructure developments was the headquarters of Tullow Oil; a newly constructed building which was visible from miles away. There was no doubt that it would become one of the new monuments commemorating Ghana's transition to its future oil regime.

Discussions of the impending oil revenue dominated the airwaves and public discourse from the marketplaces to the university campuses. There were also television discussions and daily call-in radio programs which highlighted the citizens' hopes and fears of the forthcoming oil wealth to Ghana. Topics focused on issues relating to how Ghanaians could benefit from its oil endowment and what the country needed to do to avoid the perils experienced by their neighbours in Nigeria. The educated citizenry seemed to have a general awareness of the manifestations of the resource curse (Nigeria's Niger Delta was frequently referenced) as well as the apparent lethargy of the government in dealing with the issues which they respondents were being ignored.

It was observed during the study period that the societal implications of oil had already begun to hamper the standard of living of several of Ghana's coastal communities. Mr. Ansong, a representative from the Line Hook Canoe Fishermen Association (LHCFA) had this to say when asked about these problems, "Fisher folk have already started suffering adverse impacts from oil. They have been instructed to avoid a particular radius surrounding the oil rig. Incidentally, all the fish appear to have taken

cover in areas close to the rig, making it difficult for the fishermen to catch fish without incurring the displeasure of the navy that patrols the waters” (Personal Communication with Mr. Akwesi Ansong, July 17th 2010, Accra, Ghana).

When asked about this issue and how he believed oil arriving in Ghana would affect the local fishing trade, Yaw Kusi, a local fisherman said: “We don’t know what will happen tomorrow. There could be accidents on the water which can cause the fish to disappear. We are worried about these things because we rely heavily on the ocean for our livelihoods and do not know what the potential effect of this project will be for our future” (Personal Communication, Mr. Yaw Kusi, July 17, 2010 Accra, Ghana -- translated from local language.)

The GoG had apparently made tremendous investments in its Navy as well as its coastal defences in preparation for the commercial stage of its oil production. This was because in recent years, there have been incidents of cargo piracy in the coastal waters near Somalia and an increasing frequency of vandalism such as had been experienced in Nigeria. Unfortunately, the interviews revealed that the navy in several cases had been accused by local fishermen of brutality, physical abuse and theft of catch for those who violated the no-fishing zones. As a result, the fishing communities seemed to be the most vocal about Ghana’s oil exploitation. This was because they were seeing the first hand effects which of the arrival oil imposed upon their livelihoods.

Moreover, there was growing quarrelling which had begun to emerge between the Nzema and Ahanta ethnic communities who live closest to Jubilee Fields. This stemmed from each feeling that they had rightful ownership to oil in Cape Three Coast - the site

where oil was being exploited. At the heart of the issue, each group was vying for recognition as the group likely to be most affected by any negative environmental or social impacts which potentially could result from exploitation. More specifically, they were fighting for the right to compensation. Nevertheless, despite their disputes and their continued insistence to the government, the government was adamant that no preferential treatment would be given to any specific group of people.

The government declared that no recommendations for cash distribution of revenues or any fixed percentage payments would be allotted outside of existing mechanisms within the national budget (Mahama, 2010). Although many in the country felt indifferent to this point of view, this stance by the government was not well received and incurred the displeasure of many in the communities closest to the oil development. According to Nana M.K. Sallah, tribal chief of the Ahanta community, he and other tribal chiefs of the six coastal districts were demanding ten percent of the oil proceeds. A similar arrangement existed for other communities in the mining sector and he asserted that his people were willing to fight for fair treatment and compensation (Personal Communication, Nana M.K. Sallah, July 27, 2010, Accra, Ghana). Nevertheless, in spite of the governments stance on compensation, Moss and Young (2009), make a strong case for direct cash distribution of oil receipts to the populace of Ghana. They propose that this approach would allow oil revenue to be allocated in an equitable, transparent and efficient way. They add that this would offer Ghanaians the best mechanism for benefitting from oil, rather relying on GoG to invest in public expenditures which the majority of citizens may not be able to enjoy.

Nevertheless, the GoG justified this stance of no-preferential treatment by arguing that there was no evidence indicating that any specific community would suffer any adverse effects from oil exploitation (especially since the oil operations were offshore). Of course, without baseline studies to corroborate this assertion, civil society organisations deemed the government's argument to be without merit. Thus the Integrated Social Development Centre (ISODEC) and Oxfam America, two civil society and advocacy groups, teamed together to petition the government for baseline studies to be commissioned in the Sekondi-Takoradi Metropolitan region, (Personal Communication, Dr. Steve Manteaw, July 27, 2010, Accra, Ghana).

According to Steve Manteaw, coordinator of ISODEC, there were already concerns that food prices were increasing as well as fuel prices and rents in the areas closest to the oil development. According to Dr. Manteaw, tenants were being unfairly evicted from their homes by landlords in order to make room for incoming workers both from abroad and within the country who were flooding into the area and could afford to pay higher rents.(Personal Communication, Dr. Steve Manteaw, July 27, 2010, Accra, Ghana)

It was therefore imperative in Dr. Manteaw's opinion that baseline information be immediately gathered to record these changes to the society. The government agreed and funded the project. (Personal Communication, Dr. Steve Manteaw, July 27, 2010, Accra, Ghana).

6.1.1 - The Graphic Business Roundtable Forum

In August of 2010, the Graphic Communications Group, a leading newspaper company in Ghana held a public forum on the theme, “Ghana’s Emerging Oil Economy: Prospects and Challenges.” The panel of speakers included senior members from the Ghanaian EPA, who discussed the environmental considerations of the government in response to protecting the Ghanaian environment against oil exploitation; the Minister of Mining, who discussed lessons that could be derived from Ghana’s mining industry; and, a representative of the high commissioner of Nigeria, who spoke about the best practises that could be shared between Ghana and Nigeria. The purpose of the forum was to discuss the way forward in sustainably managing Ghana’s new oil industry and involved an audience comprised of members of academia, civil society organisations, students, the media, and professionals both young and old, as well as Ghana’s Vice President John Dramani Mahama who was the keynote speaker.

The Vice President’s keynote address opened the forum, in which he discussed the promising future and the precautions needed by the government in managing the prospects of oil. “Ghana cannot see the oil industry as a miracle wand to solve the challenges of our economy,” he said, “rather the country can prudently use this resource to achieve a significant economic turnaround.” He also added, “Let me assure fellow Ghanaians, that that the government will not abandon or reduce spending in the development of agriculture...[therefore] the Dutch Disease...will not be allowed to happen in Ghana” (Mahama, 2010) He further pointed out that as a means of overcoming the resource curse, the GoG would commit to extending the Extractive Industries

Transparency Initiative (EITI) to the oil and gas sector to ensure transparency and good governance in the country's oil management. He also promised that a local content and local participation bill would be drafted to ensure that multi-national oil companies actively recruit and involve Ghanians to comprise of at least 90 percent of the industry workforce by 2020.

After these encouraging words he deemed the forum officially opened to fruitful deliberation and debate. Surprisingly, the Vice-president stepped down from the podium and immediately was escorted by his personnel out of the auditorium. He did not stay to participate in the forum any further so that he could hear the opinions and suggestions made by his constituents. His abrupt departure may have reinforced the public perception, as revealed during the interviews, that the government was not genuinely interested in the public consultation process. Essentially, this was the sentiment of many civil society groups, regarding many of the community meetings which had been lead prior to the approval of the Jubilee Fields EIA (Personal Communication, Albert Benle Afful, July 19 2010, Accra, Ghana). All such meetings, according to Albert Benle Afful, a representative from the Community Monitoring and Advocacy Group, were criticised for being purely cosmetic, since decisions seemed to be determined before anyone in the society could have the chance to add any meaningful contribution to the issues.

Moreover, the Vice-president was absent to hear many of the questions, which perhaps he alone could have answered. One individual asked how the government proposed to have 90% local content in the Ghanaian petroleum industry when, after decades of oil exploitation, Nigeria, had only achieved 40%. Many individuals

recognised the importance of transparency and wondered exactly what stage the government had reached in implementing EITI in the oil and gas sector. Further along in the questions and comments segment of the event, a university professor remarked that government had absolutely failed in engaging the members of academia--a major gap since, in his opinion, they were responsible for equipping the current generation of young Ghanaians with the skills and knowledge necessary for work in the environment and in the petroleum sector. No funding had been proposed for the universities and colleges and there was no dialogue between the government and the educational institutions regarding the necessary curriculum for the different aspects of the petroleum industry.

Another individual commented that she was doubtful that average Ghanaians would truly benefit from the rewards of the country's oil wealth. She did not believe that Ghana's oil discovery would lead to sustainable development within the country because of government corruption. It was her suggestion that the multinational oil companies doing business in Ghana be compelled by the government to put company shares on the Ghanaian stock exchange. This would enable Ghanaians the opportunity to invest in the companies, thereby becoming direct shareholders in company profits. Her idea and passionate plea for Ghanaian government to involve Ghanaians in the decision making processes and the ideals of sustainable development resulted in a standing ovation from the audience. The entire event seemed to be more beneficial for the corporate sponsors which attended the forum, rather than those who were left with their questions and concerns unanswered. The best that the Graphic Communication Group could offer was to agree to send the concerns and suggestions of the attendees to the government. The

government's responses would be printed in subsequent issues of their newspaper (perhaps the main motivation for the forum).

Thirteen individuals were interviewed at the conference. Some of these individuals were students and others worked for the civil society organisations and non-governmental organisations in Ghana. The following four questions, each specifically targeting the research objectives, were posed to all individuals:

- Do you believe that the discovery of oil in Ghana is a blessing, or is it a curse?
- How would you like to see oil proceeds used in the society?
- What policies or initiatives will support sustainable development in Ghana's exploitation of oil?
- How do you perceive the strength of environmental management in Ghana?
How efficient is it in protecting natural resources and the environment?

Eight of the thirteen individuals commented that Ghanaians were blessed to have oil in the country. Frinjuah Manasseh, a student at the University of Lagon, hoped that oil would transform Ghana into a more technologically advanced society where its citizens could have greater access to internet services and other telecommunications (Personal communication, Frinjuah Manasseh, August 10, 2010, Accra, Ghana.) Also, University student, Paul Kwanim Munkoh, hoped to see oil revenue invested in infrastructure developments to upgrade and build new roads, provide greater access to electricity in Ghana, and create jobs so that he and other students could look forward to joining the workforce after graduation (Personal communication, Paul Kwanim Munkoh, August 10,

2010, Accra, Ghana). Stella Agyemang, remarked that oil revenue should go to funding better social services, especially better health care to pregnant mothers to reduce the high incidence of maternal fatality and infant mortality. Mrs. Agyemeng also hoped that oil revenue would be used for the training and capacity building of environmental officers as well as environmental management procedures (Personal communication, Stella Agyemang, August 10, 2010, Accra, Ghana). JoJo Grant, of the Freedom Institute, was in agreement with oil being a blessing; however, that depended, in his opinion, on the availability of information which would allow the civil society to hold the government accountable. Mr Grant feared that the secrecy that existed around petroleum exploits would only breed future government corruption. Moreover, the petroleum agreements signed by the governments, in his estimation, had important financial information that was necessary in determining exactly how much money was coming into government coffers. He was therefore a big advocate of oil and gas EITI implementation and the passing of a Freedom of Information Bill into legislation. (Personal communication, JoJo Grant, August 10, 2010, Accra, Ghana.)

Nigerian environmental consultant, William Ekem, commented that the current management of Ghana's environment was much the same as in his home country Nigeria. "I believe that the government [of Ghana], perhaps has too much of hand in the decisions of the EPA, so that it cannot adequately regulate the environment in the best interests of the Ghanaian people; this has been the unfortunate story of environmental management in Nigeria." (Personal Communication, William Ekem, August, 10, 2010, Accra, Ghana)

6.2 - Environmental Implications of Oil: The Ghanaian EPA

During the study it was surprising to discover the awareness of the Ghanaian people to environmental issues. There were posters and signs in several communities protesting against the World Bank's plan to have Ghana be the repository for waste hauled from industrialised countries. Several interviewees showed concern with Ghana's approval, seemingly, of the mounting stock of electronic waste equipment which was being allowed to pollute Ghana -- this despite international laws banning the practise. NGOs in the country were very critical of the EPA's role in environmental management, especially when such blatant violations were happening with the EPAs full knowledge.

In 2009 and 2010, Kosmos Energy was reported to have spilled over 700 barrels and 500 barrels, respectively, of toxic substances into the ocean. The Ministry of Energy responded by ordering Kosmos to pay a fine of \$23 million dollars. Kosmos, however, explained that the spillage took place under the seabed and that no harm to marine life resulted from the spill. As a result, the company had refused to pay the fine because of these reasons. Of course, they were also aware that Ghana lacked the technical capacity to verify the extent of environmental damage, and that there were no laws which technically made such an infraction illegal. Nonetheless, it was publicised later that an amicable settlement had been reached between the government and Kosmos, although the terms of the settlement were not released to the public.

Agnes Nkrumah, (Friends of the Earth- Ghana), pointed out in an interview, that the apparent lack of government commitment to transparency and public disclosure of

information was her organisation's biggest frustration with the GoG. Her main concern was with the secrecy of the Jubilee Fields oil development; the non-disclosure of oil contracts and agreements, and the lack of access to the licence conditions, as well as the EPA review comments on the Jubilee Field EIA (Personal communication, Agnus Nkrumah, July 28, 2010, Accra, Ghana).

Consequently, as a result of the efforts of many civil society organisations, there was considerable awareness by the citizens of the many deficiencies in Ghana's EIA process, and specifically its handling of the Jubilee Phase 1 EIA. Tullow was criticised for many things which included over-emphasising the benefits of the project in the public consultations instead of informing the public about the actual social and environmental consequences of the project. Stephen Yeboah, (Osagyefo Network for Rural Development (OSNERD), an NGO based in Kumasi, Ghana), explained: "The public consultation meetings felt like monologues rather than dialogues...moreover the information was too technical and too extensive and beyond the understanding of the our local people" (Personal Communication, Stephen Yeboah, July 27, 2010, Accra, Ghana).

When asked what the response of Tullow was to the criticism, an employee from their environmental division appeared uncomfortable with responding to the questions (Interview date, July 28, 2010, Accra, Ghana). The fact that the interview was conducted in an office in full view of his coworkers may have explained his apprehension to many of the questions which were posed. He was asked to address the allegations that Tullow had already begun the development of Jubilee Fields (with government support) prior to

official EPA approval. He was also asked to defend the claim that Tullow had purposefully conducted a “quick and dirty” EIA because of government pressure to have an EIA finished to meet the proposed production deadline. He was delighted to share all the corporate social responsibility actions that Tullow, in the coming years, planned to initiate to help improve the lives of Ghanaians. However, he cautiously averted these questions and simply said that he was unaware of any such criticism; that Tullow had done everything according to good public accountability practices and the requirements set by Ghanaian legislation. The truth was that Tullow had done a poor job in engaging the civil society. While presenting all the positives of the Jubilee Fields oil development, the company along with the government, a proponent of the project, had seemingly been negligent in presenting the harmful aspects of oil development in Ghana as well as the ways to mitigate against them.

6.3 - Interview Responses to Research Sub- Questions

The central question of the thesis as stated in the methodology section has three accompanying sub-questions geared towards identifying Ghana’s preparedness in dealing with its new found oil endowment. The first of the questions was: *“Has Ghana developed mechanisms to ensure that the oil wealth helps alleviate poverty and achieve sustainable development?”*

This sub-question spawned several other related questions with themes regarding the public perception of the oil as a blessing or curse as well as government transparency and corruption. When asked if Ghana had the capacity to overcome the failures of other

oil rich countries in Sub-Saharan African countries, there were two very clear distinctions in the responses. Several interviewees considered the oil discovery a blessing, and motivated by their faith, believed that the country could defeat the many challenges it was yet to face. Doris Adusei, University Professor of Economics at Lagon University remarked, “We are a very resilient people here in Ghana...and we are not intimidated by what has gone wrong in Nigeria, we believe in ourselves and believe in God.” (personal communication, Doris Adduce, June 30th 2010, Accra Ghana).

The overwhelming majority of Ghanaian according to those who were interviewed for the research as well as discussions heard in the media did not share this same optimism. This was evident both in the interviews and in opinions shared in public discourse and in the media. Several individuals pointed to the striking similarities between the corrupt leaders in Nigeria and those who governed their own country. They were not confident that there would be enough political restraints to use the oil wealth wisely. They also did not believe in the many promises made by their government, that in a post-oil Ghana, money would be spent for education, infrastructure, and the electrification of their homes. Patrick Ansah, a university student voiced this opinion when interviewed, “With our government being as corrupt as it is, I am amazed at the confidence of some people who think that oil will make any real difference to the way we live now” (Personal Communication, Patrick Ansah, August 27, 2010, Accra, Ghana).

Dr. Manteaw commented, when interviewed, that if GoG truly had the mechanisms in place for sustainable development in the oil industry, it would have enshrined it in a national policy prior to the oil development (Personal Communication,

Dr. Steve Manteaw, July 27, 2010, Accra, Ghana). Since such measures were not put in place, it was clear in his estimation that bad governance would be the reason why Ghana might very well see the resource curse. Furthermore, he pointed out that government planning required that appropriate compensation measures be put in place for the communities in the Western region. Already, there was such a measure available in several mining communities, with a small portion of revenue from gold being allotted to the district assemblies.

Moreover, when interviewed about some of the challenges to sustainable development in the oil industry, Peter Suburb, from the Centre of Sustainable Development, responded by saying, “Ghana will surely have to overcome many political barriers in the government to successfully benefit from oil as a society...and it won’t be easy. That is why the work of our organisation in promoting transparency and anti-corruption initiatives like EITI is so important. Holding the government accountable to the citizens of Ghana will be a very big challenge, and it will require the joint efforts of all of Ghana’s advocacy groups” (Personal Communication, Mr. Peter Suburb, August 10, 2010, Accra, Ghana). The accountability that Mr. Suburb was referring to was greater public access to information about the revenue flows so that citizens can know exactly what monies are coming into government coffers and how they are being spent.

Furthermore, the second research sub-question which was investigated was: *“What additions or changes in policy should be implemented to promote the management and allocation of oil revenues in a way that will benefit Ghanaians?”* Mohammed Amin Adam, National Oil Coordinator of Publish What You Pay – Ghana, when asked this

question responded, “Collateralization of oil revenues lead to the demise of other resource exporting countries and I hope that our government avoid[s] this mistake.” (Personal Communication, Mr. Mohammed Amin Adam, August 12, 2010, Accra, Ghana). He continued to say that, if the government should follow this path, future prosperity and development would be traded for repaying debts once oil revenues had declined. In his estimation, this would ultimately undermine any achievement of sustainable development in Ghana’s society. His solution was therefore to restrict oil backed loans (using future oil windfall as collateral for receiving loans) and to have oil revenue interlinked with other viable sectors of the economy which often succumb to Dutch disease like the agricultural sector.

EITI is led solely by governments and not by civil society or industry individuals. Nonetheless, pressure from these stakeholders, as well as international organizations can have the potential to twist the arm of governments into compliance. EITI implementation of the oil and gas sector is therefore a vital component to managing the petroleum industry.

Moreover the necessity for capacity building of Ghana’s EPA and its EIA procedures was also a central concern raised in many of the interviews. The third research sub-question asked: *“Does Ghana possess adequate environmental management procedures and governance to aid in protecting the society and the environment against the challenges of exploiting oil?”* To address this issue three EPA officers were interviewed who provided tremendous insight into many aspects of environmental management in Ghana. One vital area, according to one EPA officer, which needed to be

improved to build the capacity of the EPA was the transfer and organisation of information within the agency and between EPA members (Anonymous EPA staffer #1, August 9, 2010, Accra, Ghana). He pointed out that, for instance, many documents and evaluative reports with individual learning outcomes were not structurally archived and stored. Different people in various departments were involved in the many processes within the agency; however, knowledge and individual learning outcomes were not frequently shared among EPA staff. Therefore, the exchange of ideas regarding the main challenges, strengths and weakness, and organisational capacity of the EPA were discussed only a few times every several years.

Consequently, new members within the agency did not have many resources to draw upon regarding the experiences of the EPA, except for minimal training and discussions. “These things are very hard to institutionalise,” said the officer. He further discussed in the interview that EPA authorities were underpaid and thus lacked the motivation often times to adequately enforce rules. He suggested that it was normal for officers to accept bribes in exchange for licences and permits and that there were inappropriate monitoring procedures and protocols to make sure that the terms of licenses were being adhered to.

In addition, it was revealed during an interview with another veteran EPA officer that the agency had requested the help of international third party agencies like the Norwegian Ministry of Environment and the Netherlands Commission for Environmental Assessments (NCEA) in many of the EIA evaluations in the country (Anonymous EPA

staffer #2, August 14, 2010, Accra, Ghana). Guidance from the NCEA had helped to direct the EPA in assessing major issues in EIA reports. In several cases, a great portion of the NCEA review comments of the EIAs become an integral part of the final review letter which was sent to the proponent. This has been true for three major oil and gas development projects within the last decade. These include the Ankara Petrochemical Plant (APP) EIA in 2000, the West African Gas Pipeline (WAGP) EIA in 2004 and the Jubilee Field EIA in 2009.

Regarding the APP EIA, the help of the NCEA identified another constraint to Ghana's environmental management which validate the many of the criticism noted in this study: the negative influence and pressure from the government against the EPA's role to effectively manage the environment and approve EIAs. The EPA, as described by this informant, found itself in major opposition against political will, because the GoG and the Ministry of Energy were in support of the project, despite the lack of environmental and societal considerations within the EIA. Evidently, the government's focus on the economic prospects of the project was in stark contrast with the EPA's responsibility to the environment and the people of Ghana. "The NCEA's support really provided a boost of confidence and validity to our issues with the EIA...if they had not been on our side the project proponent would have won the favour of the GoG, thus compelling the EPA hierarchy to bend to their will" (Anonymous EPA staffer #2, August 14, 2010, Accra, Ghana).

As the examples above describe, the EPA and the GoG have at times been at odds with each other, and the opinions of the EPA have are not always been taken into full

consideration. This has been especially true when government pressure has pushed for approval of projects which are deemed to significantly affect national development. Dr. Manteaw offered one antidote which he felt ideally needed to be implemented to protect the natural environment and the society against the lightening pace at which the GoG was moving. “There needs to be a moratorium on the granting of licenses to any MNCs, so that GoG can have the time bolster the regulatory and legal framework to sustainably govern its oil industry.” (Personal Communication, Dr. Manteaw, July 27th 2010, Accra Ghana).

Finally, it was apparent after speaking with EPA staffer #3, that a moratorium of oil licenses would truly benefit the development of environmental legislation. When asked if any new regulations for EIA or environmental protection would be implemented to help manage pollution and protect biodiversity in the coastal area, he responded by saying, “though there have been talks to amend some of our procedures, the EPA does not anticipate that any changes will be implemented before first oil” (Personal Communication, Anonymous EPA staffer #3, August 15th 2010, Accra, Ghana). By “first oil” he was referring to the commencement date, during the fourth quarter of 2010 when oil from the Jubilee Fields was scheduled to be produced. He could not identify, however, exactly what these procedures were, the effects they would have on environmental management, or when in the future these changes would be implemented. Evidently, like many of Ghana’s other institutions before first oil, the EPA was playing, and continues to play catch up in the race against protecting the Ghanaian environment against the impact of oil.

6.4 - Chapter Summary

There has been a huge contribution of the civil society organisations and NGOs to the development of policies and legislation for Ghana's petroleum sector and its environment. For instance, they have sought changes in environmental legislation and procedures, have petitioned for public interest and accountability committees, as well as citizen-based oversight to monitor the inflows and outflows of petroleum revenue. They have been the champions of the causes important to the everyday farmer and fisherman whose needs are being ignored by the GoG. Their efforts are consistent with the major themes identified in this study, one of which is the apparent societal distrust and the public perception of corruption in the government. The majority of those who were interviewed believed that transparency and corruption were the biggest constraints to the sustainable exploiting of oil.

Norway, offers very important lessons to Ghana. In particular, the need to have clear plans about how to manage oil wealth as well as have the regulatory and institutional capacity to manage the industry. Should petroleum policy be distributed among various departments in Ghana? Does Ghana, perhaps, need clear focus on petroleum governance by establishing a Ministry of Oil and Gas, alongside its Ministry of Energy? These are important questions which the GoG must consider. Consequently, Norway was one of the few countries which Ghana reached out to for assistance in its oil exploits. In all estimation, the friendship that has been developed and Norway's involvement Ghana's oil industry may encourage the GoG to adopt the use of the natural

resource funds and perhaps other management practises which have been so successful in the country.

Moreover, while revenue management gained the attention in GoG discussions, it was evident that environmental management had received the least attention in all the political rhetoric. However, for a country such as Ghana, which is heavily dependent on the local fishing industry for the livelihoods of its people, as well as the agriculture sector for national GDP, neglect of the environment, now more than ever, will prove detrimental for sustainable development.

7.0 - Research Recommendations

There is no simple panacea for avoiding the resource curse. Therefore the recommendations made for Ghana will not necessarily translate to all developing countries, since they are specific to addressing some of shortcomings observed in the country during the research. Also, these suggestions cannot guarantee that Ghana will overcome the resource curse; however, these recommendations, which are based on international good practises and the gaps revealed during the interviews will provide a stronger basis for achieving sustainable development and protecting the environment against the exploits of the oil and gas sector. As this thesis and the following recommendations suggest, success in oil exploitation in Ghana will depend on the support and pressure from international organisations, the technical capacity and professionalism from the EPA, the capacity building of the civil society and the continued legacy of democracy and peace which have been the hallmarks of Ghanaian governance.

The following recommendations are divided into three categories: Recommendations for environmental management and oil spill prevention in section 7.1 (table 4), recommendations to minimise the risk of Resource Curse or Dutch disease in section 7.2 (table 5) and recommendations targeting good governance and transparency in section 7.3 (table 6).

7.1 Recommendations for Environmental Management

The research identifies six recommendations listed in table 4 that may help reinforce good environmental practises and sustainable development of the petroleum

sector. These recommendations are supported by internationally accepted best practises, however they are derived primarily from the suggestions offered by CSO representatives and the EPA members who participated in the study.

Table 7	Recommendations for Environmental Management
1	Improve the capacity of the EPA : Commitment to baseline studies, adequately funded and motivated enforcement authorities, appropriate procedures and protocols for monitoring sites.
2	Reject stabilization clauses in petroleum agreements.
3	Improve the EIA process to include public participation and involvement, and indigenous knowledge.
4	Invest in training and higher institutions of education.
5	Establish environmentally-sensitive areas in the oil and gas sector and appropriate compensation for any abuse of property rights.
6	Oil Spill and Response Plan.

Much of the criticism concerning Ghana's Jubilee Fields stemmed from the civil society feeling that their involvement in the process was merely an afterthought; after all, the important decisions had already been made without official EIA approval. However, in order to fully benefit from the internationally accepted purpose of the EIA, the GoG must ensure that the impact assessment begins during the early stages of project planning and continues as an iterative process through the project feasibility and specification phases and detailed design and operation phases. In effect, the government should seek to obtain broad community support before the development of any significant undertakings. The government must establish good consultation processes prior to any proposed developments and it must continue throughout the life of the projects. It should also

involve appropriate knowledge dissemination so that affected communities can participate in the development and operation of projects. This will require that the EPA improves the public consultation processes, including adequate time notification, accessibility to information and a non-technical review made available to the civil society regarding the major issues in an easy to understand language (preferably translated also in the local languages).

As Agenda 21 points out, the involvement of civil participation is important because indigenous knowledge can aid in the EIA process by, for instance, supporting the extent of scientific knowledge surrounding environmental and social consequences of oil industry activities. In addition, Ghana can improve indigenous participation in environmental management by utilizing the support of fishermen and others in the coastal communities. These individuals can be recruited as the first line of defense against oil spills and other environmental disasters which may occur in the sea.

Also, it is critical that the GoG build the capacity for producing and maintaining baseline records. This will be an essential component for providing understanding to policy and decision makers. Unfortunately, in the absence of baseline data, there cannot be any meaningful evaluations of divergences away from baseline or natural conditions. Thus, attempts to determine mitigation or perhaps even measure the appropriate compensation for environmental impacts on project-affected people cannot be properly assessed. These baseline records should provide descriptions of Ghana's environment: its flora and fauna, endangered species, the biodiversity of the coastal ecosystem, as well as the socio-economic conditions of certain key areas in the country. Such information will

be helpful for designating critical habitats and areas which must remain off limits both to offshore and onshore oil developments. These “no go” zones or environmentally sensitive areas would ensure protection of critical environmental areas including forest and wildlife reserves, as well as protect many of the fishing zones important for the livelihoods of Ghanaians. Also, the GoG must expand its petroleum laws and regulations to include rules for sea pollution. This will enable the country to legally hold violators responsible for pollution or hazards that arise from upstream activities. The implementation of such a law would be dependent, however on the rejection of stabilization clauses in any subsequent petroleum contracts signed by the government. The government must reserve the right to change or add to the legal framework which will subsequently govern its environment, society and petroleum sector. This can only be accomplished in the absence of stabilization clauses.

Furthermore, as noted by one university professor at the Graphic Business Roundtable Forum, the academic community in Ghana has not been adequately engaged by the government. The GoG therefore requires significant investment into university level education; specifically covering the scientific disciplines as well as programs focused on the petroleum industry. This will help prepare skilled environmental specialists as well as a competent workforce who will be able to fill the 90% local content vision of the GoG.

Additionally, the Nigerian Petroleum Act (1990), as suggested by Nigerian environmental activist, William Ekem during the field research, provides a framework for Ghana in oil spill management. The majority of OPA 1990 provisions, as described by

Nwilo and Bodega (2006), are targeted at reducing the number of spills and reducing the quantity of oil spills. Included in the provision is also a comprehensive strategy to ensure that sufficient financial resources are available for the cost of cleanup, as well as compensation to be given to any persons damaged by spills. It is recommended that Ghana, like the government of Nigeria, join the Disaster Monitor Constellation, which is an early-warning satellite network which transmits real time information from the space. The Nigeria Sat-1, is an Orbit Satellite for geographical mapping, which is beneficial for combating and managing oil spill incidents. The satellite can identify the extent of coastal waters and coastal areas polluted and provide the spill position which would serve as input data into the oil spill model.

7.2 - Recommendations to Minimize the Risk of the Resource Curse:

The recommendations to minimize the risk of the resource curse derive also from the interview data, but also from information gathered from discussions heard on numerous radio broadcasts and television programs, as well as local newspaper coverage. Sustainable exploitation of oil will involve controlling what is perhaps the most prevalent manifestation of the resource curse - Dutch disease. This section will identify, as noted in table 5, the ways that Ghana can combat this looming threat.

Table 8	Recommendations to Minimize the risk of the Resource Curse.
1	Invest in agriculture and the other major sectors of Ghana economy.
2	Invest in the downstream sector of oil exploitation in order to diversify Ghana's economy as well to produce electricity for all its citizens.
3	Develop infrastructure: paved roads and highways, port and harbor facilities, access to telecommunications, power generation.

Ghana must take measures to enhance its agricultural production, since this is one of the most fragile sectors in oil dependent countries. Agriculture can diversify exports, boost employment and increase rural demand for domestic goods. Therefore investments can be made to Ghana's agricultural sector by, for example, providing subsidized seeds to farmers and greater availability to small business loans for farmers and entrepreneurs that can support the industry. The incoming oil revenue will also provide capital to invest in new industries as means of diversifying the economy. For instance, the natural gas associated with oil extraction may also allow Ghana to develop a lucrative natural gas export industry, as their counterparts in Nigeria have successfully accomplished. Therefore, oil revenue must be channeled to the necessary technology and facilities for natural gas production.

In addition, many oil-producing countries export their oil and gas without developing their own modern systems to generate energy. Ghana must also invest oil revenue into the downstream sector of its petroleum industry. The construction of oil refineries will increase diversification of its economy and allow Ghana to become self sustained in providing power generation and electricity for its citizens. In Ghana, whole communities can sometimes go up weeks without electricity and power to their homes and businesses,

(some areas do not even have the availability of electricity). As such, many of the politicians had campaigned using the promise of providing power generation from oil revenue to win votes. With Ghana emerging as oil-exporting country the frequent blackouts and power shortages should be a thing of the past.

Furthermore, the government of Ghana explicitly needs to convert the limited and depleting oil resources into long-term and sustainable benefits for the society. One way that diversification is achieved is through investment in public goods and merit goods. Public goods include infectious disease control, basic infrastructure like sanitation and urban water, and environmental protection. Merit goods include basic healthcare and basic education. The government, however, must exercise caution in the pace of these developments. Nigeria in the 1970s suffered tremendous adjustment costs due to the rapid overspending and infrastructure development. To avoid this occurrence, Ghana must invest according to the “absorptive capacity” of its economy. This means that there must be a spread out and strategic time path for all investment projects to avoid the disruption of other economic activities or congestion due to the investment projects.

7.3 - Recommendations for Good Governance and Transparency

Good Governance in the petroleum industry requires the removal of the secrecy that aides in the misappropriation of oil revenue. The most prevalent theme of the study was the need for increased transparency in the government management of oil windfall. Table 6 summarizes the major recommendations offered by several participants of this research study.

Table 9	Recommendation for Good Governance and Transparency
1	Restrict oil Backed Loans by Legislation
2	Extend the Ghana EITI process to include the oil and gas sector
3	Pass a strong Freedom of Information Bill as supported by many Ghanaian civil society groups

The enormous unpredictability and volatility of oil income flows can make using oil revenue for collateral and international borrowing a treacherous decision. As such, Norwegian and Alaskan oil revenue management laws prohibit borrowing against oil resources or the assets held in oil funds. Ghana's oil revenue management law should also follow the good practices of these countries and prohibit the borrowing from international capital markets with oil revenue or oil resources. To further manage oil windfalls, Ghana must empower the public with the information regarding sources and uses of the nation's oil wealth. EITI implementation of the oil and gas sector will therefore be a vital component to accomplishing this. Transparency in the payments received from revenue will aid in public oversight and this will be central to upholding the rule of law and insulate against the public perception of government misuse of funds. Unfortunately, EITI is led solely by governments and not by civil society or industry individuals, though pressure from these stakeholders, as well as international organizations can have the potential to twist the arm of governments into compliance.

Moreover, Dr. Manteaw suggested when interviewed that 'national accounting standards' must be employed which consider the incoming oil earnings, the rate of depletion of the oil resource, as well as the degradation of the environment. With this

understanding, Ghana's true wealth can be properly assessed so that oil income is not spent too quickly and there is not an over reliance on the depleting asset and neglect of the environmental complications of the oil industry. The use of oil funds will be important for stabilizing expenditures and budgetary planning of the oil proceeds. Strict rules will need to be put in place, however, so that the political leaders will not be tempted to raid these assets. These should include a separation or sharing of decision making authority between different political constituencies and rules that put a cap on amount of expenditures that can be made annually.

Beyond the extractive industries, Ghana performs poorly in providing civil society organizations, journalists and other members of society access to official information. A comparative study in 2006, rated government institutions the worst among 14 countries in regards to providing full disclosure of information when requests were made (Gary, 2009). A strong and comprehensive freedom of information bill, as mentioned by several of the interviewees, will therefore be an important component in enforcing transparency safeguards and the monitoring of oil windfall. NGOs and civil society groups in Ghana such as ISODEC, WACCAM, Friends of the Nation, and the Ghana Chapter of PWYP, to name a few, have been instrumental thus far in monitoring the financial, social, and environmental costs in the extractive industries. A Freedom of Information Bill needs to be finally passed by the parliament to enable these organizations, as well as the media sector, in continuing to combat the many challenges of Ghana's oil boom yet to be faced.

8.0 - CONCLUSION

Oil exploitation in developing countries results in many outcomes which, despite popular belief, do not always equate to national prosperity. Rather, some of oil's effects include the formation of political instability, corruption, underinvestment in education and social services, environmental degradation, and declining economic development. As such, some experts in the field (Gary, 2009, Karl 2004), have even gone as far to suggest that oil be left in the ground, rather than exploiting it devoid of the necessary institutions and legal infrastructure to manage it. Unfortunately, few governments in the developing world have demonstrated the patience, prudence and foresight required to sustainably manage their extractive industries.

In early 2011 Ghana emerged as a world exporter of oil, even though weak and unstable laws, institutions, and regulations dictated that it exercise restraint in this regard. Indeed, the opportunity for Ghana to export oil came sooner than even a national oil policy to direct the decisions surrounding petroleum activities. Unfortunately, as Appiah-Opoku (2001) describes, governance structures in Ghana have had overlapping and often conflicting powers and responsibilities. Currently, the Ministry of Environment, Science and Technology, the Environment Protection Agency (EPA), the Ministry of Energy and the Ghana National Petroleum Corporation (GNPC) all do not have clearly defined roles or co-ordination in management of Ghana's petroleum industry (Personal communication, Dr. Steve Manteaw, July 27, 2010, Accra Ghana).

The above research concludes that the government was not prepared to manage its oil exploits in a manner which would allow it to be exploited safely and sustainably. In addition, the GoG's anticipation of oil wealth meant that it was willing to compromise environmental protection, the rule of law, and the needs of its society as was made apparent by its use of the EIA process with Jubilee Fields Oil development.

As it stands, environmental problems cannot be resolved in Ghana without addressing the ineffectiveness of environmental management and EIA practices, and ending the marginalization felt by its people in respect to these issues. The research confirms that environmental protection was in fact the most undervalued aspect in the preparations leading up to oil development. Moving forward, the government must incorporate and harness local potential, knowledge and creativity. There must also be major efforts to consider the policies and processes for assessing, determining, or assigning the future liability costs of development, operation, decommissioning and abandonment of oil fields. As well, investments must be focused on strengthening environmental governance and improving the capacities of regulatory agencies like the EPA and GNPC.

Furthermore, the responsibility of overcoming the resource curse in Ghana and other resource-rich countries does not belong to these nations alone. The efforts of the United States, for example, in dealing with transparency (the Frank Dodd Investment) in the extractive industries is one way how governments and organizations from industrialized countries, can contribute towards the fight. Unfortunately, relying solely on the political will for change in Ghana may not yield any true reform.

Thus, the way forward is for Ghanaians to place political pressure for government buy-in into EITI implementation for the oil and gas sector. EITI implementation will help add transparency, perhaps the most important element in the global fight against the resource curse. Transparency will empower Ghana's civil society in keeping their government accountable with how money is spent. So ultimately, the power for change lies primarily in the lobbying of its civil society organizations; ideally with the help of international organizations and donor organizations around the world.

Finally, the outlook for Ghana's post oil development is not entirely bleak. As such, this study does not conclude that the resource curse will certainly befall Ghana. However the evidence of a resource curse in other settings reinforces that Ghana must have a country specific understanding of the policy, institutional conditions and capacity needed to protect it against the potential negative outcomes that will threaten the achievement of sustainable development for both current and future generations.

8.1 - Research Contribution

There is wealth of information concerning the resource curse and its many manifestations in developing countries. However, there are relatively few scholarly examples regarding sustainable development and the effects of the resource curse in the nation of Ghana. Recently, those that have used Ghana as a case study, have typically focused on many of the economic ramifications of oil, while neglecting the important environmental and social dimensions. As such, this study helps address key gaps in the

academic knowledge, which before the 2011 commissioning of the Jubilee Fields project was virtually nonexistent.

Furthermore, the research highlighted Ghana's environmental management practices and EIA processes in ways that contributes to the shortfall of academic writing pertaining to these matters. Evidence from the fieldwork heavily relied on the opinions and suggestions of various members of Ghana's society, thereby making the research very practical and poignant in the Ghanaian context. It is anticipated that the research findings will have several applications among Ghana's civil society organizations for increasing awareness in governance issues as well as the sustainable management of the environment and the petroleum industry. The recommendations made in this study may be beneficial for the societies in other resource-rich countries who may face similar domestic challenges to oil development.

8.2 - Limitations

The research attempts to provide an accurate and up to date assessment of the implications of oil exploitation in Ghana; however, there have been fast changing developments in Ghana's petroleum management which this study may not have been able to fully capture. The majority of the research focuses on fieldwork ending in January 2011. Also the study data are limited by the personal judgment, biases and knowledge of the participants in the interviews, some of which seemed to protect the images and reputations of their companies and organisations. In addition, there were many other individuals (personnel from GNPC, the Ministry of Energy, Ministry of Environment)

who declined to participate in the study but who could have added valuable information to the research. As such, the sample of individuals who were interviewed for the research may be considered a skewed population due to the limited number of participants which were involved.

8.3 - Future Direction

It would be worth investigating the change in Ghana once the oil industry has fully established itself in the Ghanaian economy. Perhaps three to five years or so beyond this point a better observations of sustainable development and the effects of the resource can be made. This should include an assessment of environmental management and biodiversity, fish resources and the fisheries industry, and the way of life of those that depend on these resources are affected. Future studies should not merely focus on the economic evaluation of petroleum exploitation in the country, although this will be important for gauging whether Ghana has experienced the Dutch disease, but it should also focus on the above mentioned areas. Bell and Morse (2008) articulate that the use of indicators as a means of gauging sustainability by governments and other agencies. Future research should explore the use of sustainability indicators for promoting understanding within indigenous communities, answering key issues surrounding sustainability and linking sustainability goals and objectives with initiatives to encourage national development.

9.0 - Appendix 1: Names of Interview Participants

Number	Name of Participant	Organization	Interview at Oil and Gas Forum	Requested Anonymity
1	Tullow employee	Tullow Oil		√
2	EPA#1 member	Ghana Environmental Protection Agency		√
3	EPA#2 member	Ghana Environmental Protection Agency		√
4	EPA#2 member	Ghana Environmental Protection Agency		√
5	Agness Nkrumah	Friends of the Earth-Ghana		
6	Stephen Yeboah	Osagyefo Network for Rural Development-Kumasi		
7	Steve Manteaw	ISODEC		
8	Mohammed Amin Adams	PWYP		
9	Richard Elima	WACCAM		
10	William Bruce	Individual	√	
11	Nana M. K. Sallah	Ahanta Tribal Chief		
12	Donkor Stephen	Youth and Concerned Citizens Association-Nkroful	√	
13	Benle Afful	Community Environmental Monitoring and Advocacy Group		
12	Osei-Amponsah	Local Fisherman		
13	Ed-Love Quarshie	Line Hook Canoe Fishermen Association		
14	Mike Abaka-Edu	Ghana National Canoe Fishermen Council		

Number	Name of Participant	Organization	Interview at Oil and Gas Forum	Requested Anonymity
15	Alfred Mensah	Youths for Nzema-Maanle & Western Development	√	
16	Malik bin Ibrahim	Green Ghana Initiative	√	
17	Yaovi Gada	Local Fisherman		
18	Peter B. Subaab	Centre for Sustainable Development	√	
19	Frinjuah Manasseh	University Student	√	
20	Emmanuel Wullingdool	University Student	√	
21	Anonymous Individual	Oil Watch/FoE		
22	Bishop Akolgo	ISODEC		
23	Dr. Augustine Tawiah	University Professor - GIMPA		
25	Dr. Doris Adusei	University Professor - Lagon University		
26	Paul Kofi Dwukwah Asanta	Individual	√	
27	Rosina Owusuaa Forster	Individual		
28	Mrs Emelia Abaka –Edu	Adom wo wim Fish Mongers Association		
29	Frinjuah Manasseh	Individual		
30	Jemima Agyare	Individual		
31	William Ekem	Environmental Activist	√	
32	Victor Nyianyi Kablan	Individual		

Number	Name of Participant	Organization	Interview at Oil and Gas Forum	Requested Anonymity
33	Kojo Afunam	Individual		
34	Paul Kwanim Munkoh	University Student	√	
35	Mustapha Maison Yeboah	Individual	√	
36	Jojo Grant	Freedom Institute	√	
37	Kennedy Kusi Mashall	WACAM		
38	Stella Agymang	Strategic Social Development Foundation	√	

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