Are natural resource windfalls a blessing or a curse in democratic settings: a case study – Ghana?

A thesis submitted in accordance with the requirements for the degree of Doctor of Philosophy

2016

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DECLARATION

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SUMMARY OF METHODS AND FINDINGS

In order to analyse the problematic impact of oil on Ghana's development, this study relied on qualitative methods, supported by descriptive statistics, tables and graphs. These qualitative and quantitative methods complement each other to explain the problematic impact of oil. Qualitative methods used for data collection include semi-structured interviews, focus groups and document reviews. A survey was conducted with fisher-folks to assess the impact of the oil exploration on local livelihoods, income, poverty and the relationship with oil companies and the government. Triangulation of diverse methodologies helped to present the diversity of views, increased the credibility and trustworthiness of the data and research findings.

Twenty-five key informant interviews were conduct to understand the impact of the oil industry on Ghana. The key informants included politicians and policy makers in Ghana, CSOs, executives from Kosmos and Tullow. Institutions and CSOs that informant interviewees were chosen from included; Ghana National Petroleum Corporation, Ministry of Petroleum, Ministries of Finance and Economic Planning, Ministry of Agriculture, Ghana Energy Commission and Environmental Protection Agency. Others included the Ghana Statistical Service, Bank of Ghana, Institute of Social, Statistical and Economic Research, Commission on Human Right and Administrative Justice, Integrated Social Development Centre, Centre for Democratic Development, and Africa Centre for Energy Policy. Themes discussed with the informants differ based on the knowledge of oil industry and how the activities of institution are related to it. Issues discussed included; the impact of oil on employment, agriculture and industrial development, governance, institutions and corruption and conflicts. Other issues focused on the impact of oil on economic growth, currency movement and environmental challenges such as gas flaring, pollution, waste management, and loss of biodiversity.

Eighty semi-structured interviews were conducted in Dixcove with fishermen, fishmongers and other community members to explore the impact of oil on local incomes, employment, economic activities, poverty and inequality, provision of social services, oil-related conflicts, and environmental pollution. Three focus groups were also organised to discuss how fishing restrictions impacted local incomes, livelihoods and employment. A survey was used to collect data from Dixcove to assess the impact of the oil exploration on local livelihoods, income, poverty and their relationship with oil companies. Data for this research was analysed by identifying common and divergent ideas, developing themes and relating them to existing ones. Descriptive statistics such as tables and graphs were used to illustrate changes in incomes, currency movement, GDP, agricultural and industrial and impact of oil on local employment.

This study revealed that oil is problematic for development in developing countries, even in a democratic setting due to the negative impacts of oil; global, national and local politics and interests. The impact of oil on Ghana showed that although resources windfalls are problematic for development, the challenges are socially produced, shaped and conditioned by a country's political economy and its interaction with the negative impacts of oil, global politics, structures and actors, which formed a 'globalised assemblage'. How oil windfalls are utilised is shaped and conditioned through interactions between heterogeneous actors, agencies and structures. Due colonial legacy, the economy of Ghana is characterised by a lop-sided dependence on the export of raw materials, and the import of manufactured goods. Ghana's economy is integrated into the global economy in ways that makes unfavourable and ensures structural dependency. Oil has only help Ghana to diversify its dependency on gold, timber and cocoa. There have not been structural changes in the national economy, it is instead reinforcing and reconstruction of the country's deep seated structural dependency. Ghana's case also revealed that although democracy does not insulate a country from the problematic impacts of oil, it can mitigate them. The Ghana case also revealed that the directionality of the problematic elements associated with oil-based development is not predetermined. For instance, while the resource curse literature noted that resource windfalls often leads to local currency appreciation, the Ghana cedi has defied this. Oil export has not reversed the depreciation of the local currency, indicating that the impact resources windfalls on currency movement are embedded in the globalised socio-economic and political conditions. This study also revealed that there are temporalities and spatialities to the problematic nature of oil and development in the developing world. Temporally, increased Ghana government borrowing, backed by oil is creating a 'deferred or delayed debt curse' where future generation will be burdened with, and spatially, whereas oil has had positive impacts on the provision of social services and generated some employment, the fisher-folks experienced decline in income due to restrictions on fishing in the sea near their locality. The study revealed that whereas the incidence of poverty in Dixcove is not as bad as compared to other parts of the country, it is unevenly distributed among the people, with fishermen and fishmongers in the area experiencing decline in income. The impact of oil on development is differentiated across sectors and spaces, and manifest unevenly. This study argues that while democracy does not insulate a country from the problematic impacts of oil, it mitigates them. The directionality of the problematic elements associated with oil development is not predetermined, they have temporal and spatial dimensions and are embedded in the existing socio-economic and political conditions

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ACKNOWLEDGMENT

I am indebted to individuals and organisations that assisted me during this study. My heart-felt gratitude goes to my supervisor, Prof Padraig Carmody, for his expert supervision. His patience and critical comments shaped my thoughts. The critical feedback from Dr Mark Hennessy and Dr Martin Sokol during the transfer report was very insightful.

I am thankful to Trinity College, Dublin for awarding me the Trinity Awards to study in Ireland. Trinity Travel Grant Award Scheme also provided some of the funds for my field work in Ghana. I would like to record my debt of gratitude to the Department of Geography, Trinity College Dublin for the various forms of support I received during my study. Most grateful to all organisations and individuals in Ghana who provided useful information during my fieldwork. Special thanks also to my research assistant, Emma and Edem.

I am grateful for my family and friends who have been supportive over the years. To my mum, it is a privilege to have you as a mother, I am most grateful for all the support. I am grateful to brothers Emma, Nuetey, Atter, Lawer, my sister Vero. Friends worthy of mention include Owuraku, Denis, Raph, Mark, Agyekum, Francis, Ben, Prosper, Matilda, Hilda, Elder Ken and Elder Mike for their various support. To my graduate mates, Immanuel, Adwoa, Jane, Lauren, Niamth, Ankit, Chris, Shan, Rachel, Amir, Kelvin, Lucy, Shane and Donal, Geography Department, TCD, your companionship has been awesome.

The thesis is dedicated to my mother, Mary Awo and my later father Anthony Kofi Siakwah. I am grateful to God for the strength and how far He has brought me through my studies.

ABSTRACT

The resource curse has generated much research since the 1970s because natural resource rich countries in the developing world seem to perform poorly economically and on development indicators compared to resource poor ones. Researchers and development practitioners have explained the curse in terms of how natural resource windfalls are implicated in a country's poor economic growth, governance, government borrowing and debt, currency movement, decline in manufacturing and agricultural sectors, environmental degradation and violent conflicts. Indeed, whereas the growth rate of resource rich economies has been erratic, it is essential to put the explanation and whom the growth benefit in context.

The existing literature on the curse is problematic for its methodological nationalism where it does not account adequately for global and local factors (actors, agencies and structures) interact with national politics in shaping the differentiated impact of natural resource windfalls on development. While this study recognised the importance of the national economy in shaping the impact of resource windfalls on development, it relies on actor network theory (ANT) to analyse the problematic impact of natural resources (the curse) as a socially constructed phenomenon and conditioned through interactions between a 'globalised assemblage'. The assemblage comprises transnational oil companies, states, CSOs, global energy discourses and local politics. Thus, where the curse manifests, it is produced through the interaction between actors, agency and structures, and the resource rich economies are sometimes governed through a transnational contract of extraversion. In Africa, weak democracy is noted as the main factor that shape the impact of oil, this study uses network perspective to analyse the diverse actors, agencies and structures that condition the impact of oil, and whether or not the curse will manifest in a democratic setting on the continent.

This study revealed that while Ghana is not experiencing a curse, oil can be problematic for development in the developing world, even in a democratic setting due to the negative impacts of oil; global; national and local politics. Ghana's case yet revealed that while democracy does not insulate a country from oil-related development challenges, it can mitigate them. Competitive electoral pressure has compelled the state to be responsive, by directing oil windfalls for provision of social services. This study also revealed that the directionality of the problematic impacts oil are not predetermined since Ghana's currency has depreciated instead of it appreciating as noted in curse literature. There are also temporalities and spatialities to the problematic nature impact oil where increased Ghana government borrowing is creating a 'deferred debt curse' and similarly, whereas oil positively impacted the national provision of social services, fisher-folks experienced decline in income due to restrictions on fishing.

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ACRONYMS

ABFA	Annual Budget Funding Amount
ACCORD	African Center for the Constructive Resolution of Disputes
ACEP	African Center for Energy Policy
AfDB	African Development Bank
AGC	Ashanti Goldfields Corporation
ANT	Actor Network Theory
AOPIG	African Oil Policy Initiative Group
AWDA	Ahanta West District Assembly
BOG	Bank of Ghana
BRICS	Brazil, Russia, India, China and South Africa
CDB	China Development Bank
CDD	Ghana Centre for Democratic Development
CHRAJ	Commission on Human Rights and Administrative Justice
CNPC	China National Petroleum Corporation
CPI	Corruption Perception Index
CSOs	Civil Society Organisations
CSPOG	Civil Society Platform on Oil and Gas
CSR	Corporate Social Responsibility
DRC	Democratic Republic of Congo
EC	Energy Commission
EDC	Enterprise Development Center
EHSS	Environmental Health and Safety
EIA	Energy Information Administration
EIA	Environmental Impact Assessment
EITI	Extractive Industries Transparency Initiative
EPA	Environmental Protection Agency
ERP	Economic Reform Programme
EU	European Union
FAO	Food and Agriculture Organisation
FDI(s)	Foreign Direct Investment(s)
FON	Friends on the Nation
FPSO	Floating Production Storage and Offloading
GGC	Ghana Gas Company

GDP	Gross Domestic Product
GHEITI	Ghana Extractive Industries Transparency Initiative
GII	Ghana Integrity Initiative
GIPC	Ghana Investment Promotion Council
GLSS	Ghana Living Standards Survey
GNADP	Ghana National Aquaculture Development Plan
GNCFC	Ghana National Canoe Fishermen Council
GNP	Gross National Product
GNPC	Ghana National Petroleum Corporation
GOIL	Ghana Oil Company
GPN	Global Production Network
GSGDA	Ghana Shared Growth and Development Agenda
GSS	Ghana Statistical Service
HIPC	Highly Indebted Poor Country
HDI	Human Development Index
HDR	Human Development Report
IDA	International Development Association
IEA	Institute of Economic Affairs
IEZ	Inshore Exclusive Zone
IMF/WB	International Monetary Fund/World Bank
ISSER	Institute of Statistics, Social and Economic Research
ISODEC	Integrated Social Development Centre
LEED	Livelihood Enhancement and Enterprise Development
MDRI	Multilateral Debt Relief Initiative
MLP	Multi-Level Perspective
MNCs	Multinational Companies
MOFA	Ministry of Food and Agriculture
MOFEP	Ministry of Finance and Economic Planning
NAFAG	National Fisheries Association of Ghana
NDC	National Democratic Congress
NEP	National Energy Policy
NEPDG	National Energy Policy Development Group
NGOs	Non-Governmental Organisations
NOC	National Oil Company

NORAD	Norwegian Agency for Development Cooperation
NPP	New Patriotic Party
NVTI	National Vocational Training Institute
ODI	Overseas Development Institute
OMCs	Oil Marketing Companies
OPEC	Organisation of the Petroleum Exporting Countries
PC	Petroleum Commission
PERC	Property and Environment Report Center
PIAC	Public Interest and Accountability Committee
PNDC	Provisional National Defence Council
PRMA	Petroleum Revenue Management Act
PWYP	Publish What You Pay
RCC	Regional Coordinating Council
RWTI	Revenue Watch Transparency Index
SAP	Structural Adjustment Program
SHS	Senior High School
SINOPEC	China International Petroleum Corporation
SMEs	Small and Medium Enterprises
SSSS	Single Spine Salary Structure
STMA	Sekondi-Takoradi Metropolitan Assembly
SPOCL	Saltpond Offshore Producing Company Limited
TEN	Twenboa, Enynra and Ntmme
TI	Transparency International
TNCs	Transnational Corporations
TOCs	Transnational Oil Companies
UCDP	Uppsala Conflict Data Program
UN	United Nations
UNCTAD	United Nations Conference on Trade and Development
UNECA	United Nations Economic Commission for Africa
UNDP	United Nation Development Program
US	United States
WANEP	West African Network for Peacebuilding
WCED	World Commission on Environment and Development
WTO	World Trade Organization

1 Chapter 1: Are oil windfalls a curse or blessing in Ghana?

1.1 Introduction: resource windfalls – development paradox

The connection between natural resource endowment and development has been under scrutiny since, apart from a few countries, it seems most of the natural resource rich economies have had poor economic growth compared to the resource poor ones (Stevens 2015; Ploeg and Venables 2011; Collier 2010; Rosser 2006). Natural resource rich economies also appear to have performed poorly on other development indicators such as level of poverty, access to social services like health and education, governance and quality of environment. Development experts, social scientists and economists describe such a seemingly inverse relationship between natural resource abundance and poor economic growth as a 'paradox of plenty' (Ploeg and Venables 2011; Karl 1997) since natural resource endowment should serve as a basis for economic growth and development (Rosser 2006; Wright and Czelusta 2004; Krueger 1980). Citing the US as an example, the geographer, Norton Ginsburg, for instance argues that a country that possesses a sizable and diversified amount of natural resources should be advantaged in accelerating economic growth in other sectors of the economy (Rosser 2006, p. 7; Higgins 1968, p. 222; Ginsburg 1957). Neoliberal economists such as Krueger (1980) also argues that natural resources endowment can facilitate industrial development in a country through providing funds for investment in other sectors of the national economy (Sheppard et al. 2009; Rosser 2006). There were other economists and development theorists however such as Prebisch (1950), Singer (1950), Hirschman (1958) and others who challenged the view that natural resource abundance alone can be advantageous for economic development since the global economy has been characterised by declining terms of trade for primary commodities, price volatility and limited linkages between natural resource extraction and national economies, partly making the resource exporting countries in the developing world to be governed through a transnational contract of extraversion (Carmody 2009).

Because of the seeming paradox between natural abundance and poor economic development, the economic development of natural resource rich countries in the developing world has become the subject of study since the 1970s as they were performing poorly economically compared to natural resource poor economies such as Korea and Singapore (Humphreys et al. 2007; Auty 2001; Sachs and Warner 2001; 1997). The economies of oil and mineral rich countries, especially in Africa have been under scrutiny since in spite of the windfalls that accrued to them, their economic growth has been poor (Bradshaw 2014; Bridge

and Le Billion 2013; Zimmerer 2011; Watts 2010; African Development Bank 2009; Oliveira 2007). Some of the oil producing countries have experienced high economic growth rate due to recent commodity booms. Whereas it can be assumed that the windfalls accruing from the hydrocarbon industry while promoting economic growth could also lead to poverty reduction, the empirical evidence is contrary in most of the countries (Stevens 2015).

The tendency for resource rich economies to exhibit poor economic growth and to perform poorly on other development indicators has been described as a 'resource curse' (Auty 2001; 1998; 1993; Sachs and Warner 2001; 1997; 1995; Karl 1997). The curse can be said to manifest where natural resource endowed countries exhibit poor economic growth, neglect and/or decline of a country's agricultural and manufacturing sectors, increased government borrowing and debt, weak institutions and corruption, poverty, natural resource induced violent-conflict, environmental degradation, and the Dutch Disease (Collier and Goderis 2007; Humphreys et al. 2007; Sachs and Warner 2001; Karl 1997; 2003). The Dutch Disease is named after the experience of the Netherlands in the 1960s where its local currency appreciated due to the influx of windfalls from gas that made imports cheaper and resulted in the decline of the manufacturing and agricultural sectors of the economy (Ross 2012; Mcsherry 2006; Stevens 2003; Karl 1997). Weak institutions, corruption and price volatility that characterize some of the economies of the resource rich economies affect their fiscal policy and transparency (Bridge and Le Billion 2013; Brunnschweiler and Bulte 2008; Alexeev and Conrad 2009).

Humphreys et al. (2007) and Heal (2007) contend that the dilemma between natural resource affluence and economic development is visible in countries like Korea, Singapore, and Taiwan where with little natural resources, these countries have made strides in economic development, whereas most people in oil rich-countries like Angola, Gabon and Nigeria live in poverty. In Nigeria, for example, whereas between 1965 and 2000 the country received about US$350 billion dollars from oil revenue, its GDP growth rate was 1.3% per annum during the same period, and most of its citizens live on less than US$1.5 dollars per day (Sala-i-Martin and Subramanian 2003). Maass's (2009) study shows that oil windfalls in Nigeria have been 'mismanaged' by the political elites leading to poverty and conflict in the country. Natural resource-based or infused conflicts have ruined countries like Sierra Leone and Angola as well (Collier 2010; Oliveira 2010). In some cases, the political elites used natural resource rents to consolidate political power and for personal enrichment (Oliveira 2007; Ghazvinian 2007).

In spite of wide acceptance of the curse thesis, as put forward by Auty (2001; 1993) and Sachs and Warner (2001; 1997; 1995), and that is visible in countries like Nigeria and Angola in Africa (Stevens 2015; Chindo et al 2014; Oliveira 2010; 2007; Watts 2010; 2009), it is also the subject of debate in terms of why it manifests in some countries and not in others like Norway and Australia which are also natural resource endowed economies (NORAD 2013; UNDP 2011; Mehlum et al. 2006; Rosser 2006). It must however be pointed out that the economies of countries like Norway and Australia are not dominated by natural resources.

Davis (1995) challenged the idea that mineral rich economies performed poorly compared to non-mineral rich economies with respect to Gross National Product (GNP) per capita (the value of goods and services produced by nationals both in and outside the country) and on social indicators like health and education. According to Davis (1995), the oil rich economies have had high growth increments (Morris et al. 2012, p.7). Lederman and Maloney (2007) also used resource intensity (net resource export per capita) as an indicator to analyse the relationship between natural resource and economic growth and concluded that, although countries like Norway, Canada, Finland and Australia economies are more resource intensive compared to countries like Democratic Republic of Congo (DRC), the former are still well developed and more industrialised than DRC, hence resource intensity alone cannot explain why one country is more industrialised than another. Wright and Czelusta (2004) argued that strong institutions and technologies have enabled countries like the US to harness their natural resources for economic development. Countries such as Norway and Botswana have also exploited their oil and diamond resources respectively to promote economic development partly due to their strong institutions and prudent investments policies (Moss 2011; Moss and Young 2009; Heum 2008). A recent study by Ross (2012) suggests that though the economic growth of resource rich economies might be erratic, they have neither grown slower or faster than the resource poor economies, suggesting that both economies grew at 1.5% pa between the 1970s and 1990s. Given the differentiated impact of natural resources on development in different countries, the curse should be seen as a tendency, not a law, which is created through social actors as they interact with the natural resources (Auty 1993). The curse is not pre-determined, but socially created through the interplay of multifaceted factors such as corporate profit interest, politics, greed, corruption and poor institutions. The experiences of countries suggest that the relationship between resources and economic development is non-deterministic and the impact can be differentiated and manifest unevenly.

It seems whether or not natural resource windfalls will be a blessing or a curse in a country is partly dependent on the nature of the political economy in question and how it interacts with global, national and local politics and conditions. It is suggested that natural resource windfalls will potentially be a blessing in a political economy that adheres to transparency on how revenues are spent, devoid of, or with limited patronage and corruption, leadership that have priority areas that the resource rents are invested in and ability to invest in long-term productive sectors (Whitfield and Buur 2014; NORAD 2013) instead of cyclical political investments (Kelsall 2013; Whitfield and Therkilsden 2011; Whitfield 2011; 2009). It is however important to recognise how the national political economy interacts with 'globalised' actors, agencies and structures and local politics to shape development outcomes.

The cross-sectional studies across countries by Auty (2001; 1993), Sachs and Warner (2001), Gelb (1988) and others on the impact of natural resource on development can be criticised since they seem to have failed to account for the differentiated manifestation of the curse in each country across space and how the national scale interacts with the global and local politics and conditions to shape the impact of natural resources. Due to the challenges with the cross countries analysis, Collier (2010; 20008) advocated for country specific analysis of the curse, but this also seems not to adequately account for the differentiated manifestation of the curse across space and class in a country. Both the cross-sectional countries and country specific analysis of resource based development and the curse suffered from methodological nationalism where the national government failure or competence is assumed to determine the success or otherwise of development outcomes (see Bridge 2008). The analysis of the impact of natural resources in development is therefore state-centred since both those who argue that natural resources can promote economic growth and those who contend otherwise focused much on the national political economy. According to Bridge (2008, p. 393), most analysis of the role of natural resources in development is characterised by a national-scale modes of analysis that pushes questions of the role of transnational organization of production and their impact on development outcomes to the background. They also failed to account for geography in terms of how the curse can be differentiated across space. It also fails to account for the assemblage nature of the hydrocarbon industry and how this conditions and shapes the manifestation of the curse. But as Smith (2010) argues, the hydrocarbon industry that produces and shapes the manifestation of the curse is a globalised assemblage. Using ANT perspectives on networks, enrolment and assemblages (Latour 2005), the curse can be analysed beyond the default national-scale (Bridge 2008) to a multi-scale one where we can explore how the curse

is produced through the interactions between firms, global energy security concerns, national politics and local conditions. In this study, scale is used as socially or politically constructed, which challenges existing notion of geographic scale of a fixed hierarchy of bounded spaces [global, national and local] (Delaney and Leitner 1997). The political construction of scale views scale as nested hierarchy of interwoven spaces of divergent size. It also recognises network and agency of the actors in the scales (Leitner and Miller 2006). Understanding scale as politically constructed helps us to appreciate how various actors' interests fit along various spatial, temporal, jurisdictional multi-levels (Lebel et al. 2005, p. 1). The multi-scale analysis will help to explore the complex geography of the curse which has been underexplored since the curse has been more applied at national level (Auty 2001; Sachs and Warner 2001) in most countries in the developing world without examining how a curse can manifest locally (Obi and Rustad 2011) in natural resource rich economies such as Ghana.

There have been some studies to examine the impact of oil on Ghana's socio-economic development since the discovery in 2007 and the start of commercial production of oil in 2011 (Adusah-Karikari 2015; Obeng-Odoom 2015a; 2015b; 2014a; 2014b; 2014c; 2014d; 2013; Phillips et al. 2015; D'Alessandro et al. 2014; ISODEC 2014; Mihalyi 2014; Asamoah 2013a; Stevens et al. 2013). Some of the early studies on the impact of oil on Ghana's development focused on the potential impact of oil on governance (Amoako-Tuffour 2010), assessing Ghana's petroleum fiscal and regulatory framework (Amoako-Tuffour and Owusu-Ayim 2010; Pamford 2010), Extractive Industries Transparency Initiative (EITI) and transparency in Ghana's oil sector (Manteaw 2010), citizens' expectation management (Agbefu 2011; Attafuah 2010; Asafu-Adjaye 2010; 2009), GNPC acting as both the country's NOC and industry regulator (Banful 2010) and the preparedness of the country for potential oil spillage (Mensah 2010). Other studies on Ghana's oil industry focussed on revenue management and a proposal for direct cash payment as a strategy for curbing the resource curse (Moss 2011), employment opportunities and training of the youth for oil and gas industry (Darkwah 2013; Ablo 2012), oil and human capital development (Obeng-Odoom 2015a), and the limit of good governance in the resource curse debate (Phillips et al. 2015). At the local and community level, there has been some studies on oil and urban development in Sekondi-Takoradi (Obeng-Odoom 2014a; 2014c), oil and land grabs (Wemegah and Kwesi 2014; Yalley et al. 2012), and oil and women's livelihoods (Adusah-Karikari 2015; Boohene and Peprah 2012).

While some of the studies analyse the impact of the oil industry at the national level (Moss 2011; Amoako-Tuffour 2010; Pamford 2010), others focused on the impact of oil and

the hydrocarbon industry on local fishing communities (Phillips et al. 2015; Wemegah and Kwesi 2014; Yalley et al. 2012). Although the above studies seem to provide some analysis of how oil is impacting Ghana's development (Adusah-Karikari 2015; Obeng-Odoom 2015a; 2015b; Phillips et al. 2015; Darkwah 2013), they have not examine whether or not the country is experiencing the dimensions of the curse, both at the national and local levels. Examining the national and local impacts of oil on Ghana brings to focus that complex nature of the challenges associated with the hydrocarbon industry. Interrogating how restrictions on fishing in local communities in Ghana due to activities of oil companies affect local economic activities, income and poverty. Exploring the geography of the curse in Ghana is important to understand how even within countries, the impact of oil can manifest unevenly across class and spaces. This research maps out the dimensions of the curse, interrogates whether or not Ghana is exhibiting the dimensions of the curse or what challenges oil poses to Ghana's development nationally and locally.

1.2 **Research questions and objectives**

This research aims to analyse whether or not Ghana is experiencing the dimensions of the resource curse with respect to its economic growth, currency appreciation, employment creation, corruption, conflict, excessive borrowing, environmental pollution and neglect and decline of the agriculture and manufacturing sectors since the discovery of oil. The question is: 'Are natural resource windfalls a blessing or a curse in democratic setting such as Ghana?' In Africa, Botswana is often held up as having managed natural resources effectively while Nigeria is noted to have 'mismanaged' its oil windfalls. Will Ghana follow in Botswana's footsteps or go the way of Nigeria?

The study specifically seeks to analyse;

a) Is there a 'resource curse' and if so, what are it's the dimensions?
b) How can we assess whether or not Ghana is experiencing a resource curse?
c) What is the current evidence of the impact of oil discovery and exploitation in Ghana?

1.3 **Justification for Ghana as a case study**

In Africa, Botswana is often cited as having managed natural resources effectively for the benefit of its populace because of its democracy. Botswana's development success is partly

attributed to a democracy that is conscious of its institutional requirements and accountability and the political and economic unity of the dominant class or leadership that is disciplined (Samatar 1999), although its development has been criticised since it seems to be characterised social inequalities and 'jobless growth' where high GDP have not translated into corresponding employment and improvement in living conditions for everyone (Mogalakwe 2003), with an unemployment rate of 17% in 2010 (UNECA 2012). Nigeria's poor management of oil windfalls, to the detriment of the majority of its citizens, high poverty, environmental pollution and oil induced violent conflict is partly attributed to its weak democratic polity, and oil that seems to have weakened the country's democratic process and undermined the proper functioning of its institutions (Watts 2010; 2009; 2004; 2002; Stevens 2003; Sala-i-Martin and Subramanian 2003). Ghana being relatively democratic, where there are competitive elections and successful alternation of political power between at least the two political parties, relatively good institutions, respect for human right and vibrant CSOs (Bratton 2004; Crawford 2004), it is interesting to examine whether or not democratic polity inoculates against the curse or if its tendencies like poor economic growth, weak institutions, and corruption and 'mismanagement' of oil windfalls still manifest in such a democratic context as well.

Ghana is located in West Africa's Gulf of Guinea, a few degrees north of the Equator. The country is bordered at the east by Togo, north by Burkina Faso, the west by Ivory Coast and the south by the Gulf of Guinea as shown in figure 1.1 below. It has low coastline with sandy beaches, vegetation that are intersected by streams and rivers and the sea serving as fishing grounds for locals living along the coast. The country is endowed with natural resources such as gold, diamond and timber. In terms of socio-economic development, Ghana attained a lower middle income status in 2010 due to a rebasing of the economy (Ghana Statistical Service [GSS] 2011). Its economic growth rate averaged 5% per annum over the past two decades, hence the country is seen as one of the success stories of Africa's development (Breisinger et al. 2010) by some though this is spatially uneven. Some regions and sectors growing faster than others, while inequalities still persist between north-south and urban-rural (GSS 2014a; 2013) and about 24% of the population still living in poverty (GSS 2014a; 2013; 2010; World Bank 2010). Bello et al. (1999) noted that the era of Structural Adjustment Program (SAP) that was championed by the World Bank in Ghana was characterised by economic decline, poverty, unemployment and poor health and education delivery. This raises questions as to whether or not recent discovery of oil in the country can help to improve economic growth, reduce poverty and improve the provision social services.

Figure 1:1 Map of Ghana [Geography Department, University of Ghana, 2014]

Ghana is fascinating for this study because compared to Botswana, the characteristic of the political elite of the country appears to differ, and this potentially affects their policies and development outcomes. Botswana seems to have a dominant and 'homogenous' political class that are united (Samatar 1999; Mogalakwe 2003) while Ghana's political elites seems fragmented along historical, ethnicity and personality cleavages (Whitefield 2011), often focused on how to win elections and to keep their parties in power (Opoku 2010). Despite an increasing consolidation of the country's democracy where there have been relatively free and fair elections and alternation of power between the two leading political parties (Ayee 2012; Awal 2012; Bratton 2004; Crawford 2004), the competitiveness of the Ghana's elections and

the 'fear' of losing the next election have made the political elites more concerned with programmes that could help them maintain their political base to win power. Elections in Ghana appears to be based on competitive clientelism (Whitfield el al 2015; Whitfield and Buur 2014) and maintaining such a patronage networks can be expensive and undermine the political elites' ability to invest in structurally transforming ventures (Whitfield 2011; Whitfield and Therkilsden 2011; Bayart 1993; Chabal 1992).

Ghana also has other natural resources like gold and diamond which the political elites have managed over the years, it is interesting to examine what lessons (if any) the country has learned from the management of its mining sector. The government has been criticized for poor management of mining windfalls and enforcement of mining regulations, conflicts among local communities, small scale miners and multinational mining companies and degradation of the land and water bodies (Banchirigah 2008; Hilson and Yakovleva 2007; Hilson and Nyame 2006; Hilson and Potter 2005; Hilson 2002). What the experience with the gold mining sector in Ghana suggests is that, governance goes beyond having institutions and laws on paper. Governance involves examining the people who implement the laws and under what conditions, the structures and policies at the global, national and local scales, and how they interact to shape and mediate the role of natural resources in development.

Examining the impact of oil on Ghana's development is important because oil production has put the government in a position to earn sizeable windfalls for its socio-economic development. Some suggest that to a large extent Ghana's economic, social and political development since 2011 will be shaped by oil (Asamoah 2013b). The Ghanaian government has received over US$1.8 billion dollars in oil revenue between 2011 and 2013 (ISODEC 2014). Since 2011 to date however, oil constitutes about 5.8% of total revenues (Ministry of Finance and Economic Planning [MOFEP] 2014; Bank of Ghana [BOG] 2015; 2014). It has also being a source of Foreign Direct Investments (FDIs) and other investments such as a gas processing plant that is shaping Ghana's energy generation from its reliance on thermal sources (diesel) to gas. The hydrocarbon industry has also contributed to creating some employment in the country through localisation of employment where transnational oil companies are supposed to ensure that as much as possible locals are employed and their capacity improved for employment in the oil sector (Tullow's Corporate Social Responsibility [Tullow's CSR] Report 2012; 2011).

The excitement that greeted Ghana's oil must however be treated with caution given the experiences of countries like Nigeria where huge oil windfall does not automatically guarantee economic growth and improved living conditions for the majority (Moss 2011; Attafuah 2010; Asafu-Adjaye 2010; 2009). Also, the national and local impact of Ghana's history in mineral exploration has been mixed, with some positives and negatives (Darkwah 2010; Garvin et al 2007; Aryee et. al 2003; Hilson 2002). The question is: does democracy insulates a country from the curse or is the curse produced and manifested differently in a democratic polity? A critical analysis is needed to appreciate to what extent the impact of oil on Ghana on a national and local scales confirms or confounds to the curse literature and in what ways the challenges posed by the hydrocarbon industry can be differentiated and manifest unevenly across space and class in a country.

1.4 **Structure of this thesis**

The thesis is organized into seven (7) chapters. Chapter one (1) examines how the relationship between natural resource endowment and socio-economic development has been explained and conceptualised over the years, the research questions and objectives of the study, and why a study on Ghana's oil sector will respond to the call for a move from cross-country studies to multi-scale analysis in order to appreciate the differentiated impacts of natural resources like oil on socio-economic development. Ghana's case also helps to analyse whether or not democracy can insulate a country from the curse or how it might be produced and manifest differently in a democratic setting. The chapter revisits the debate on the role of natural resources in socio-economic development since whereas some studies suggest that natural resources windfalls are a curse instead of a blessing, some countries have used their natural resource windfalls to stimulate their socio-economic development. The chapter argues that while there is a non-deterministic relationship between natural resources endowment and socio-economic development, the analysis of the curse seems to suffer from methodological nationalism and has also failed to sufficiently account for geography [the spatial manifestation of the challenges associated with the hydrocarbon industry]. Interrogating how the hydrocarbon industry affects the national economy and fishing communities in Ghana due to restrictions on fishing and its implications for the local economy and income brings to the fore the differentiated impact of oil. This helps one to understand how even within countries where there is no full-scale resource curse, the challenges that the hydrocarbon industry poses to

development can manifest unevenly across space, and the factors that shape its manifestation transcends the national scale to global and local politics and conditions.

In chapter two (2), the discussion focuses on the political economy of the curse. It answers the question as to whether or not there is a curse, and if so, what are its dimensions? It maps out the dimensions of the resource curse. The chapter argues that the curse is a multi-dimensional phenomenon that shows not only an inverse relationship between natural resource endowment and poor economic growth (Rosser 2006, p. 8), but also how natural resources shape and are implicated in conflict, environmental challenges and institutional atrophy and poor governance. In mapping out the dimensions of the curse, themes discussed included: natural resource abundance and economic growth; Dutch Disease and high priced economies; natural resource price volatility, government borrowing and public debt; rent-seeking and entrepreneurial development; how natural resources harm industrial and agricultural development; natural resource abundance and poor governance; and natural resource induced environmental degradation and conflicts. The chapter argues that the relationship between natural resources and socio-economic development is non-deterministic. Also, whereas most existing analysis of the curse seems too focused on the national scale, it seems to overlook 'globalised' network of heterogeneous actors that shape and mediate the manifestation of the curse across space and time. Existing explanations of the curse seem not to sufficiently account for external political and economic environments and structures (Rosser 2006), and how they interact with national and local politics, institutions and actors to shape development outcomes in resource abundant countries in the developing world.

Chapter three (3) discusses how ANT and its perspectives on networks, association and assemblages help to analyse how the resource curse is produced and manifest in specific spaces. Themes discussed in this chapter comprise networks, associations and assemblages; production networks, value chain and hydrocarbon assemblages; and ANT, state, world system and development. The chapter situates the study within ANT, natural resource and development geographies and political economy. Political economy examines the complex relations between political and economic decision making processes and how this relates to governance, law and production (Collier 2006). It relates to how social relations like patronage shape development outcomes since the political elites can sometimes use wealth to secure and consolidate power, leading to misuse of resources and corruption (Kelsall 2013; Whitfield 2011; Acemoglu 2005; Bayart 1993; Chabal 1992). Using ANT, this study argues that although a political economy perspective enables us to understand how social relations within countries mediate natural

resource windfall use, it limits analysis of the curse to the national scale. ANT perspectives on networks, associations, relational networks and globalised assemblages therefore, provide a lens to extend explanation and analysis of the manifestation of the curse beyond the national level factors to global and local politics and conditions. It argues that the curse should be seen as a product and function of interactions between an assemblage of global, national and local heterogeneous politics, actors and structures.

In chapter four (4), the methodological processes that were involved in data collection, organisation, interpretation and analysis are discussed. It outlines the reasons for choosing a specific methodological approach, data collection tools and the need for triangulation of methods and data source to improve the credibility and trustworthiness of the research findings. Specific issues discussed in this chapter comprise: the qualitative-quantitative impasse; importance of qualitative interviews; methodological triangulation; ethics and positionality; multi-scalar case study; data collection through document analysis, interviews, focus group interviews and surveys; and data analysis. Given the merits of depending on multiple methods and data sources, this study recognises the importance of triangulating different methodological strategies in data collection and analysis, and the researcher's situatedness and research participants are partners in the data collection in the research process. Triangulation of diverse methods helped to capture the diversity of experiences and increase the credibility of the data used to elucidate whether or not Ghana is experiencing dimensions of the curse.

Chapter five (5) analyses whether or not Ghana is experiencing the dimensions of the curse at the national scale. The chapter discusses the history of oil exploration in Ghana; global interests in Ghana's oil industry and how it influences FDIs inflow into the country; revenue accruing from oil and how it is utilised; impact of oil on economic growth; government borrowing and public debt; currency movement; industrial and agricultural growth; employment, skills and technology transfer; and democratic polity and corruption in Ghana. Ghana's case suggests that democracy might not necessarily insulate a country from the challenges that oil poses to development. The impact of oil can be differentiated across space, sector and class. The national scale analysis showed that although oil has been problematic for the country's development, Ghana has not experienced a wide-scale curse such as poor economic growth, industrial and agricultural declined, environmental pollution and violent-conflicts. Ghana's national debt has however increased due to increased government borrowing, sometimes backed by oil. The impact of oil manifests unevenly and sometimes exhibit contradictory tendencies. For example, whereas between 2012 and 2015 Ghana's GDP,

industrial and agricultural growth rates are relatively declining compared to 2011, the country has however experienced improvements in the provision of social services such as education and health in the country. In Ghana, it seems the political elites use the provision of social services to the citizens (nationally and locally) as a means of 'enrolment' for electoral purposes. The chapter argues that the factors that mediate and shape the national scale challenges that oil poses to Ghana include national level politics, activities of TOCs like Tullow and Kosmos, China's interests in oil, global initiatives such as EITI and local politics in the country. By the Ghanaian state and the TOCs signing to the EITI, they are for instance 'enrolled' into a globalised natural resource governance system that requires they disclose windfall receipts and payments. Thus, while national politics and institutions shape how oil revenues are utilised, the national institutions and actors operate in tandem with local and transnational factors. Ouma (2015) for instance used network perspective to analyse how local farmers in Ghana are enrolled and assembled into the global export markets. Marketing or entrepreneurship is not just about recognising unexplored opportunities or combining resources and ideas in new ways, but it also involves 'heterogeneous engineering' (Law 2011; 1987) where companies find ways to mobilise adherents to its projects (Ouma 2015). The engineering involves assembling human and non-human elements to ensure access to raw material as well as stable objectification and exchange of goods within an anthropological retail market (ibid.). As ANT perspectives on networks and assemblages have shown, phenomena that appear enclosed are in fact, produced in networks by diverse actors (Law 1999). Ghana's oil industry highlights how networks and flows such as natural resources, production, trade and investments enable countries to be connected beyond political boundaries. The negative impacts of oil itself such as its price volatility and capital and technical intensity have interacted with global, national and local politics and conditions to shape the impact of oil on Ghana.

Chapter six (6) analyses the local impact of the oil industry on fishing communities around Dixcove, Ghana. The local analysis brings out the complex geography of the challenges associated with the hydrocarbon industry, even where there is no wide-scale local resource curse. Geography is important in analysing the impact of oil since people/spaces are impacted differently and unevenly by oil exploration. The chapter examines the contribution of the fisheries' sector to Ghana's development; political economy of Dixcove; polluted environment and loss of aquatic species; non-violent conflict between fishing and oil exploration; uneven manifestation of poverty and income decline; oil and disruption of local livelihoods and lack of alternative livelihoods and employment for locals; and oil and increasing vulnerability of

women. A local curse can be said to manifest where exploration of natural resources, such as oil, leads to disruption of local economic activities due to pollution of rivers and farmlands, violent conflicts, poverty, inequality and increased local economic vulnerability (Badmus 2010; Watts 2010; 2004; 2003). This study revealed that although oil exploration in Ghana near the offshore of Dixcove has negative impacts on the local economy such as pollution of its environment, some conflict between oil companies and fishermen, increased economic vulnerability of women, and change in social systems and religious practices, there is no large scale manifestation of a curse in the area as in the case of the Niger Delta, Nigeria. It also revealed a gendered dimension of hydrocarbon impacts since the fishmongers (mostly women) in Dixcove have to confront economic vulnerability and marginalization, but at the same time have seen some improvement in economic and social status because of their ability to shift to alternative livelihoods such as trading to contribute to family well-being.

Chapter seven (7) concludes and summarizes the main finding of the research. Theoretically, the analysis pointed out that while the broad national political economy is important, a national scale analysis of the curse, where state government failure (competency) alone is seen to determine the success or otherwise of development outcomes suffers from methodological nationalism and over-territorialises the hydrocarbon industry that produces that curse (Bridge 2008). The dimensions of the curse such as poor relationship between natural resources on economic growth, decline or neglect of manufacturing and agriculture sectors and violent conflicts should not be seen as inevitable outcomes of resource windfalls. Instead, they should be seen as being constituted and mediated by activities of transnational hydrocarbon companies, national level politics and local conditions in specific countries. There is the need to view such realities [dimensions of the curse] as constituted, mediated and performed by several actors. As Sheppard (2011, p. 46) argues, a relational sensitivity of the relationship between the economy, space/time and socio-nature, within a broadly political economic view of development creates space for multiple understanding of development trajectories and livelihood assemblages. The development challenges associated with oil in Ghana can be explained in terms of the negative impacts of oil such as its price volatility which does guarantee stable revenue and the capital and technological driven nature of the hydrocarbon industry with limited linkages to other sectors of the economy; national level politics such as patronage and global interests from TOCs, the US and China.

Ghana's case revealed although oil is problematic for Ghana's development despite its democratic setting, the country is not experiencing a curse since the democratic polity seems

to mitigate the problems associated with oil-related development. The relatively poor economic growth rate in Ghana since 2012 for instance must be placed within the broader political economy of the country where there has been falling prices of gold and cocoa as well as an energy crisis that affected economic growth. On the impact of oil on industrial growth for instance, Nti (2015, p. 4) identified compounding factors such as competition from imported goods; excessive taxes, levies, and fees; energy crisis; lack of funding and high interest rates; and lack of government commitment to manufacturing as main impediment to industrial growth and not necessarily the negative impact of oil and gas development. Whitfield et al. (2015) also argues that the large extent to which power is dispersed among the political elites in Ghana affects their ability to focus on long terms structural transformation policy as they are concerned with politics that ensures political survival. Competitive clientelism, where there is fragmentation among the political elites affects their ability to focus on policy that promote economic and industrial growth as they are often focused on short-term politically beneficial policies and programs (Whitfield el al. 2015; Khan 2010). Beyond the problematic nature of oil on Ghana's development, the differentiated manifestation of the challenges that natural resources pose to developing economies is a mode of governance by the transnational assemblage where TOCs with the technology and capital are able to control how the values from the hydrocarbon assemblage is appropriated. This is possible where the resource rich state failed to develop its national institutions to enable it to harness its windfalls for development.

The overall argument in this study is that, while democracy does not insulate a country from oil-related development challenges, it can mitigate them since competitive electoral pressure can compel the government to be responsive to the citizens by using windfalls for provision of social services. Oil is however, reinforcing dependency development since Ghana has only diversify export of natural resources, without structure change to its economy. Ghana's intensification of resource extraction whilst dependency deepens, increase inequality and de-industrialisation is problematic. These deep seated extant political and economic structural challenges, in addition to Ghana political environment conditioned the problematic impacts of oil. This study also revealed that the directionality of the problematic elements associated with oil-based development are not predetermined, and there are temporalities and spatialities to the problematic impacts oil on development. Temporally, Ghana government borrowing seems to be creating a 'deferred debt curse', and spatially, whereas oil had positive impacts on provision of social services nationally in Ghana, fisher-folks have experienced decline in income due to restrictions on fishing in their locality.

2 Chapter 2: Political economy of the resource curse

2.1 Introduction

The resource curse has been initially used to explain the tendency where natural resources rich economies perform poorly economically (Auty 2001; 1993; Sachs and Warner 2001; Stevens 2015). It has been extended to include how natural resources mediate and are implicated in other development challenges such as weaknesses in governance institutions, corruption, excessive borrowing, currency appreciation, neglect and/or decline of manufacturing and agricultural sectors, environmental degradation and conflict (Watts 2010; 2009; Alexeev and Conrad 2009; Brunnschweiler and Bulte 2008; Heum 2008; Sachs and Warner 2001). Some academic and development researchers have described the inverse relationship between natural resource abundance and poor economic development and poverty as a paradox (Ploeg and Venables 2011; Karl 1997) since traditionally, economists viewed natural resource endowment as an advantage for economic development (Rosser 2006; Wright and Czelusta 2004; Krueger 1980). Prior to the 1980s, indeed, there was an orthodox view that abundant natural resources should be advantageous for economic development (Rosser 2006, p. 7). For instance, the geographer, Norton Ginsburg argued that a country's ownership of a sizable and diversified natural resource endowment should be advantageous to embark upon an accelerated economic growth (cited in Rosser 2006, p. 7; Higgins 1968, p. 222). Development theorist Rostow (1960) also argued that natural resource endowments can facilitate developing countries to make a transition from underdevelopment to industrial growth, as the case of developed countries such as the US, Britain and Australia (Rosser 2006, p. 7). Neoliberal economists such as Krueger (1980, p. 2) in the 1980s advanced a related argument, suggesting that natural resources should facilitate a country's industrial development by providing funds for investment and expansion of the domestic market (see Rosser 2006, p. 7). Prior to the 1980s, only a few economists such as Prebisch (1950), Singer (1950) and Hirschman (1958) challenged the view that natural resource abundance alone was not necessarily advantageous for economic development. They suggested that the structure of the global economy, characterised by declining terms of trade for primary commodities relative to manufactured goods, sharp fluctuations in the prices of commodities, and limited or lack of linkages between resource extraction and the rest of the national economies put natural resource exporting dependent developing countries at a disadvantage (Rosser 2006; Bulte et al. 2005).

Since the late 1980s, a substantial number of scholarly literature has emerged to challenge the conventional wisdom held prior to the 1980s (Auty 1993; Gelb 1988). Some

researchers argued that since the late 1980s, large quantities of natural resources have been a curse instead of a blessing for countries, since natural resources seem to have increased the tendency of a country to experience poor economic growth, political instability, weak institutions, environmental degradation, and conflict and civil wars (Ross 2013; 2003; Collier 2010; Karl 2003; Auty 2001; Sachs and Warner 2001; 1995). Natural resource economies have also been characterised declining terms of trade for natural resources to manufactured goods, inadequate or lack of diversification into manufacturing, rent-seeking that diverts resources windfalls into private gains and irrational behaviour of the political elites such as spending on exorbitant projects (Torres et al 2013; Rosser 2006; Bulte et al 2005).

Some studies however, argue that when we critically examine the economic performance of natural resource rich countries, especially the oil states, their economic growth might be erratic but they have neither grown slower or faster than the resource poor economies (Ross 2012). Other sceptics contend that, it is not abundance of the natural resources that causes less economic growth or development, instead it is the over dependence on the resource rent which have volatile prices affecting economic policy and planning (Alexeev and Conrad 2009; Brunnschweiler and Bulte 2008). Wright and Czelusta (2004) argue that countries like the US, Australia and Sweden because of their advanced technologies have exploited their natural resources to galvanise their industrialisation. Norway has also developed partly by exploiting its oil resources (Heum 2008). This suggests that although revenue from natural resources can be erratic, they can be harnessed for development. Thus, the curse, even though it provides a general picture about the relationship between natural resources and development, it is a tendency, not a law (Auty 1993). It is created through social, economic and political actors as they interact among themselves and the natural resources. The political, economic and social circumstances that mediate how resources are used are different from country to country, hence, there is the need for caution when making generalised statements about the effects of natural resources on development about specific countries.

In analysing the curse, we should be guided that although there a considerable evidence of the negative developmental outcomes connected with abundance of natural resources, the evidence is not conclusive (Rosser 2006, p. 7) due to how the curse is explained and manifest across space. Second, there is no deterministic relation between natural resources and poor development outcomes. Third, the existing explanations for the curse seem not to sufficiently account for external political and economic environments (Rosser 2006, p. 7), and how they interact with national and local institutions, actors and structures to shape and mediate development outcomes in resource abundant countries.

The chapter maps out the dimensions of the curse. It analyses the question as to whether or not there a 'curse' and if so, what are it's the dimensions? In mapping out the dimensions of the curse, the rest of chapter is organised into ten (10) sections. Section two (2) analyses the relationship between natural resource abundance and economic growth. In section three (3), the chapter examines the Dutch Disease [the appreciation of the local currency due to the influx on revenue from natural resources that makes imports cheaper and local products expensive]. Section four (4) discusses natural resource price volatility, excessive government spending and increased public debt in the resource rich economies. Rent seeking and how it affects entrepreneurial development is discussed in section five (5). Section six (6) maps out how natural resource abundance impacts the industrial and agricultural sectors development. Seven (7) examines how natural resources endowment mediates and conditions weak institutions and poor governance. Environmental degradation and conflict that manifest as a result of the curse is discussed in section eight (8). The section nine (9) examines what constitutes development and how the production and manifestation of the dimensions of the curse is shaped by the state and the world system. The conclusion notes that what is lacking in most previous analyses of the curse is its differentiated nature and ability to manifest unevenly across space. It also fails to account for how the curse as a product of a globalised hydrocarbon assemblage where there are interactions between actors, agency and structures to shape developmental outcomes.

2.2 **Natural resource abundance and economic growth**

How natural resources endowment impact and negatively affects a country's economic growth is one of the key dimensions of the curse (Auty 2001; 1993). Based on the curse thesis, there seems to be an inverse relationship between abundant natural resources and economic growth, making resource rich economies grew slower than the resource poor economies. Gelb's (1988) cross-country economic analysis of oil exporting countries (Algeria, Indonesia, Nigeria, Venezuela, Ecuador and Trinidad and Tobago) was one of the early studies on the negative connection between natural resources wealth and economic development. The study revealed that windfalls from natural resources during the booms periods of 1974 – 1978 and 1979 – 1981 were harmful for the economic development of these countries. Natural resource, like oil, windfalls are subject to upswings and downswings (volatility) in prices, and this affected economic planning and growth. Some studies suggest that per capita growth rates are significantly reduced by huge discrete negative commodity price shocks (Dehn 2000, p. 2). Price volatility can be attributed to removal of the fixed exchange rate, change in supply of oil

to the market and the inelasticity of demand and supply of oil products (Ross 2012). This affects the amount of money the governments gets at specific times (Auty 1993; Gelb 1988). Where prices go up, the government earns more money but downward swings have negative impacts on government revenue for its development programs. Some of the windfalls from the resources are also misappropriated by the politicians in these countries. The volatility in prices of oil and the plundering of windfalls by politician affects the countries' economic performance since there are limited resources to invest in the economy to stimulate growth that are sometimes associated with a boom era. When prices fall, government revenue also falls, making it impossible for the government to implement its programmes (Moss 2011).

A subsequent study by Auty (1993) on hard mineral economies (producers of copper, bauxite and tin) also revealed that despite consistent and significant investments in hard mineral economies, higher than in the low-income non-mining economies between 1971 and 1983, the mineral economies perform abysmally. The study revealed that GDP growth per capita in the hard mineral economies was minus 1% compared with plus 0.7% for the non-mineral economies' within the same period (Auty 1993, p. 5). Sachs and Warner's (2001; 1997; 1995) studies also confirmed the poor economic performance of natural resources exporting countries. Using 1971 as the base year, Sachs and Warner (1995) noted that based on data from 97 countries, economies with a high ratio of natural resources to GDP have lower growth rates during subsequent periods. They noted that even after controlling for trade policy, government efficiency, investment rates and the initial GDP per capita, there was still a negative relationship between natural resources and economic growth.

Sachs and Warner (1999) presented evidence from some Latin American countries where natural resource booms are sometimes connected with a declining per-capita GDP. They concluded that although there is no absolute inverse relationship between a natural resource boom and poor economic growth, there is evidence to suggest that a natural resource boom led to slower economic growth (Sachs and Warner 1999, p. 45). Sachs and Warner (2001, p. 835) also noted some inverse relationship between natural resource abundance and export contribution to economic growth, especially from manufactured goods due to the high priced nature of the local industrial sector products. A curse is said to manifest where apart from a country's natural resource sectors, a country's other export sectors are rendered uncompetitive, hindering its export-led growth (Sachs and Warner 2001, p. 835). It is noted that because resource-abundant countries in the developing world tended to be high-priced economies, except for the direct contribution of the natural resource sector itself to exports, these countries failed to achieve strong export led growth (Sachs and Warner 2001, p. 837).

There are outlier natural resource rich economies in the developing countries, such as Botswana, which has a high growth rate due to complexity of factors such as structured budgets that ensures checks and balances to regulate how windfalls are spent, and political elites and technocrats that are committed to the country's development (Collier 2008). Adherence to spending regulations ensures that the state is able to sterilise windfalls from destroying the economy and institutions by investing funds into education and diversification of the economy through processing of its diamonds locally. Local processing of the diamonds created some linkages to other sectors of the national economy as well as employment. Samatar (1999) however argued, the reasons behind Botswana's ability to use its diamond windfalls to stimulate its economic development is more nuanced. The country's economic success is partly attributed to the political and economic unity of the dominant class, under a political leadership that recognised the importance of institutions and fiscal discipline (Mogalakwe 2003, p. 86). Mogalakwe (2003, p. 86) argued that Botswana's economic development can be seen as a class project that is mobilised around a social group, nurtured systematically by its political leadership by their investment policies.

There is a case in a developed economy also where increases in GDP has been attributed partly to natural resources windfalls (Mideksa 2013). Mideksa (2013, p. 288) contends that since 1974, 20% of the annual GDP per capita increase in Norway was due to the natural endowment of oil and gas. Mideksa's (2013, p. 279) study suggests that the theoretical and empirical literature on the curse or economic impact of natural resource windfalls can be divergent. One can emphasize opportunities such as the extra capital stock a natural resource windfall brings to an economy or the harmful mechanisms through which natural resource windfalls negatively impact a country's socio-economic development (Mideksa 2013; Mehlum et al. 2006). According to Mehlum et al. (2006), sometimes, the manifestation of the curse is conditioned by poor governance and weak institutions at the time of natural resource discovery. Mideksa (2013, p. 288) notes that the empirical evidence from Norway's experience is interesting because it highlights the enormous opportunities endowments of natural resources entail for improving economic welfare, but this case may be exceptional as well since its political and economic institutions appear not to have been negatively affected by oil over the past decades. The country has been forward-looking by keeping the revenue from oil invested outside the country for the benefit of future generations instead of consuming it through tax cuts or direct transfers. Given the economic growth experiences of countries like Nigeria, Angola, Botswana and Norway, the relations between natural resources abundance and economic growth is fluid. Cross-sectional analysis must be treated with caution since it cannot

interpret country specific situations, and we also need to analyse events before, during and after the resources revenue comes on stream (Collier 2010), and how the sector impacts other sectors and living conditions, including its impacts on poverty, local currency and exports.

2.3 **Dutch Disease: natural resources and high-priced economies**

A country can be said to manifest a resource curse where revenue inflow from natural resource's sector export into its economy makes it susceptible to the Dutch Disease — the tendency of the local currency to appreciate, making imports cheaper, and subsequently leading to contraction of the local manufacturing and tradable sectors (Sala-i-Martin and Subramanian 2003, p. 6). The Dutch Disease is named after the decline of the Dutch industrial sector in the 1960s due to the influx of revenue from the sale of natural gas from the North Sea which led to appreciation of its local currency which made imports cheaper compared to exports (Ploeg and Venables 2009; Sachs and Warner 1997; Corden and Neary 1982). According to Sachs and Warner (2001, p. 821), natural resource rich economies tend to be high-priced economies and as a consequence, these countries seem to lose the opportunity to promote export-led growth.

Ross (2012) noted two causative drivers of the Dutch Disease: the 'resource movement effects' and 'spending effects'. Resource movement effect involves the rise in cost of production of manufacturing and agriculture as a result of the drawing of capital and labour from into to the booming natural resources sector. The spending effect on the other hand is the appreciation of the local currency which makes manufactured and agricultural products cheaper to import than to produce locally and exports uncompetitive (Ross 2012). As Maass (2009, p. 56) argued, the appreciation of the local currency due to the influx of foreign currency into the local economy makes foreign products cheaper to purchase with the strengthened local currency, while domestic products become more expensive for foreigners to purchase. Gelb's (1988) study demonstrated that the economies of Nigeria, Ecuador, Venezuela and Trinidad and Tobago suffered from the Dutch Disease after the oil booms, where production in manufacturing and agriculture in those countries declined. Oliveira (2007) noted that Gabon, during its oil boom can be described as 'a caricature of food dependency' where most of the country's food products were imported since the imported foods were cheaper compared to those that were produced locally in the country.

Ross (2012) however, suggests that goods and services such as education, health and security that cannot be imported are often not affected by the Dutch Disease. But when the boom subsides and the revenue from the natural resources sector is not enough to finance those

services, the economy can stagnate. Karl (1997, p. 5) contends that the Dutch Disease is non-deterministic since the extent to which it is manifest in a country is largely dependent on decision-making in the public realm on how windfalls are utilised. Botswana's experience in the diamond trade is an example of the importance of good economic policy [sterilisation of inflows] that have helped to prevent the Dutch Disease. Sterilisation involves fiscal prudence to prevent the revenues translating immediately into greater aggregate demand and inflation through the government resisting spending pressures and either to accumulate budget surpluses or to channel the revenues into some form of funds such as a heritage fund (Stevens 2003, p. 20). Countries like Equatorial Guinea, it is suggested, manifest the Dutch Disease due to neglect of other sectors of the economy and corruption by the elites (Mcsherry 2006).

Ross (2012) contends that economists have a narrow definition of the Dutch Disease as they seem to focus on the decline in the manufacturing and agricultural sectors due to an influx of revenue from a natural resource boom, ignoring the possibility that the natural resource can lead to booms in others sectors such as the service sector. He noted that during oil booms, retail stores, health care and construction will not necessarily be hurt by a rise in the exchange rate (ibid.), though it can raise cost for other sectors. Countries that are able to invest their windfalls in profitable economic activities and reduce wasteful expenditure can use the return on it to finance their development projects. How much windfall the country is able to accrue is also dependent on world commodity price volatility that resource rich economies do not control and how the political elites are willing and able to avoid wasteful expenditure and debt.

2.4 **Price volatility, shocks and government spending and debt**

Natural resource rich countries can accumulate huge national debt from exorbitant public expenditure since natural resources provide a fetish appeal or appearance of wealth (Watts 2009; 2003) which can however be unstable due to instability in the prices of commodities. Also, most of the political elites in the resource rich countries seem not to take into account adequately or ignore the volatility in prices of commodities, negative shocks and how it affects revenue inflow into the country when planning for their expenditures. Oil producing countries base their plans for revenue and spending on projections of oil prices on the global market, but these prices are unpredictable, characterised by downward and upward swings (Gelb and Grasmann 2010). One of the challenges is that, spending increases during the boom is difficult to reverse during the bust period for most governments (Collier 2008).

Projection of global oil prices is problematic because of an inelasticity in both demand and supply of it. Smith (2009) likened the oil market to a mayhem and that is always in turmoil. Between 1998 and 2008, the oil prices slipped to as low as $12 per barrel in December 1998 during the Asian financial crisis, oil prices however stabilized around $30 between 2000 – 2004 before it further increased to US$147.50 per barrel by mid-2008 — only to dip below $40 per barrel before the end of 2008 (Smith 2009, p. 145). Between 2008 and 2009 oil prices ranged between US$65 to US$120 (Collier 2010). In June 2015, a barrel of oil was hovering around US$50 but is now US$30 (January 2016). This volatility in oil prices and revenue often subject oil exporting countries to high levels of uncertainty of revenue inflows which can destabilise their economic policy and planning. Sudden inflow of oil revenue into an economy can also overwhelm the government's ability to manage those revenues. For example, growth in the oil sector of Equatorial Guinea since the mid – 1990s led to twelve-fold increase in government revenues in seven years (Oliveira 2007). The quantum of revenue a country gets from oil is mutually dependent on volume of production and price. Oliveira (2007) noted that in Equatorial Guinea, because of the increased revenue from oil, corruption, and the effect of the Dutch Disease, the country appeared not to have diversified its economy. This can have negative consequences in the future economic growth when the oil reserves deplete.

During the peak of production of natural resources like oil, a country's revenue is likely to increase (Ross 2012; Ploeg and Venables 2011; Humphreys et al. 2007; Radon 2007) but this cannot be sustained due to price volatility and negative shocks. Sources of price volatility include changes in production, speculation in the global market, conflict in oil producing regions, oil embargos, and/or deliberate policies of Organisation of the Petroleum Exporting Countries (OPEC) to reduce production (Ross 2012; Collier 2010; Smith 2009). For instance, drops in oil supply due to unexpected conflicts and violence in Nigeria, Libya and Iraq resulted in oil price increases in the past. Volatility in oil price is also related to the fact that in the short term, demand and supply for oil is inelastic. Inelasticity describes a condition where the supply and demand for goods/service are unaffected by price changes. Thus, when the oil price goes up, its consumption habits stay almost the same as well as when the price falls. The inelasticity exists because petro-states cannot easily adjust their supplies as revenue is needed to finance development projects (Ross 2012), as well as consumers cannot easily adjust their life styles even if production falls and prices are high (Ross 2012; Collier 2010). During boom periods also, because of rent-seeking most of the elites in the oil rich countries in the developing world increase expending instead of saving or investing the windfalls in future generation funds

(Moss and Young 2009). The inelasticity of supply and demand for oil is also conditioned by the fact that because investment in the oil sector takes longer periods to start yielding results and the capital outlays are also huge, it is not easy for investors to increase production over the short period to offset the surge in prices (Ross 2012). Inelasticity in both demand and supply has effects on prices and the potential revenues that accrue to governments in the oil producing states. Yet, as Collier (2008) noted, the political elites in the resource rich economies have a tendency to increase spending when they suspect price increases, even though spending increases during windfall increases are problematic to reverse during the bust periods since in the resource rich economies in the developing world, the elites seem to consolidate their power through the provision of social services.

Price and revenue volatility can destabilise resource-rich economy's spending plans and put the country into debt, since once spending on social services like education, health, and public service employment are set in motion, it becomes difficult or even impossible to reverse (Moss and Young 2009). The revenue from these resources are characterised by boom and bust or are cyclical in nature. The governments are often forced to borrow to finance the social services during the downswing in revenue. Unlike resource poor developing countries that depend on the IMF, the World Bank and aid that most often required fiscal discipline and conditionalities before loans are disbursed, the oil rich countries are able to borrow from the capital markets and other fast growing economies like China that need those resources to stimulate continuous growth. With the scramble for resources from Africa, primarily led by China and India (Carmody 2011; Ghazvinian 2007), natural resources like oil, diamond, and gold are sometimes used as collateral for loans for infrastructural development. The loans and development assistance can sometimes be used to lock-in oil even before it is extracted (Bridge and Le Billion 2013). Collier (2010) suggested that the Chinese government has been purchasing the right to natural extraction in exchange for infrastructural projects in Africa. These infrastructure loans have been criticised as budget bypass strategies, often done in secret and can result in corruption. Politicians who facilitated and negotiated these loans could also be paid bribes. When these monies are not invested in profitable activities or sectors that have the ability to repay the loans, it can increase the country's national debt. However, from the experience of Nigeria, apart from situations where oil windfalls are plundered by politicians and their allies, there are also demands from the citizens, thus compelling the government to use oil windfalls for the provision of subsidies on education, health, and electricity which also contribute to the country's national debt (Chindo et al. 2014).

Oil producing countries in the developing world usually borrow to finance development needs since that is the main source of government revenue (Collier 2010; Humphreys, Sachs and Stiglitz 2007). When projected revenue for the payment of the loans is not met due to the volatility in oil prices, governments continue to borrow to finance social services and other ambitious projects, reinforcing the cycle of indebtedness. Commodity prices on the world market are highly volatile, which affects government's ability to raise the consistent revenue needed for development projects. Resource rich countries are therefore, often trapped in continuous borrowing and poverty due to the over dependence on natural resources whose prices are unstable and have poor terms of trade to manufactured goods (Collier 2008). As Ploeg and Venables (2011) noted, in the 1970s, the resource boom and the associated high prices enabled the resources rich economies to use their reserves as collateral for borrowing but in the 1980s, the prices of resources plunged and this normally undermines their economic growth. In same case, it is argued that the recycling of petrodollar as a result of investment heritage funds can make oil producing countries borrow their own money at interest from western banks (Oliveira 2007). It can also happen when politicians are engaged in rent-seeking and steal the nation's money and keep it in foreign banks to hide it from their citizens, instead of using natural resource windfalls for entrepreneurial and skills development.

2.5 **Rent-seeking, education and entrepreneurial development**

In view of high market returns that is derived from natural resource windfalls such as oil during boom periods, the sector is characterised by rent-seeking by the elites who gain high profit from it. Even in the financial market, it is productive to maintain a healthy balance between risk and reward, hence rent seeking behaviour that distorts such relations can be damaging to an economy (Khwaja and Mian 2011, p. 580). Rent can be defined as the return or reward government or people receives from natural resources [e.g. oil, gold, diamond] located on their lands (Ghazvinian 2007; Steven 2003). When the state or individuals capture already existing revenue, especially from natural resources without creating new wealth, they are engaging in rent-seeking (Ghazvinian 2007). Though rent can be viewed as a legitimate human action based on ones' right to a particular natural resource, but in a country it becomes a problem where rent from public resources are not used for the public good or where rent seeking in the natural resource sector discourage investment or development of the industrial and agricultural sectors of an economy (Steven 2003). Often, rent seeking is not easily distinguishable from corruption as both involve the transfer of resources from the public good (Steven 2003).

The term, ‘rentier’ is used to describe persons whose income are not earned from manual or professional employment or entrepreneurship, but instead from collection of rent or benefits from a property they already own (Ghazvinian 2007, p. 103). Rentier can be used to describe elite classes that receive their incomes from natural materials found in a country (e.g. natural resources like oil, gold, diamond) and not from entrepreneurial or specialized work (McGuirk 2013; Mahdavy 1970). Historically, those who receive rent are viewed as a ‘rentier class’ and rent seeking seems to have a negative connotation associated with ‘lazy’ landowners during the industrial revolution who subsist on inherited wealth, with little inclination towards cultivation, industrial development and engagement in other productive economic activities (Ghazvinian 2007, p. 103; Mahdavy 1970). The lazy undertone associated with ‘rent’ has been extended to include situations where countries’ revenues or incomes are generated from natural resources by external sources and companies such as transnational oil companies (Mahdavy 1970). The ‘rentier state’ concept has its origin in Mahdavy’s (1970) work on how the Iranian state became overly dependent on international oil companies, with the country deriving most of its revenue from extraction of oil from its oil. According to Ghazvinian (2007), this makes the resource rich state an ‘allocation state’ where government is mostly concern with distribution of handouts and supervising projects instead of the ‘production state’ that focuses on generating wealth through taxes, agriculture and industry.

Over the years, the relationship between rent seeking behaviour, natural resources and their effects on development has gained attention in social and economic policy due to its potential negative impacts on socio-economic and political development in the resource rich economies (Barma et al. 2012; Kolstad et al. 2009; Kolstad and Wiig 2009; Caselli and Cunningham 2007; Stevens 2003). Caselli and Cunningham (2007) argue that upsurges in rent increases the incentive of the political elites to stay in power as well as being challenged for power by others who have similar desires to capture natural resource rent. Rent-seeking behaviour can have negative impact on resource rich economies since it can be used to neutralize or co-opt oppositions through patronage mechanisms or make political office overly competitive (Kolstad and Wiig 2009) which can degenerate into conflict. Huge rents from natural resources can also enable the political elite to reduce tax burdens on the citizens and make them less accountable to the people since without tax, there can be a minimal social contract between the people and the governing elites (McGuirk 2013; Moss and Young 2009). As Kolstad and Wiig (2009, p. 5324) argue, in countries with weak institutions, rents induce dysfunctional behaviours such as patronage, which can affect democratic accountability.

Rentier states can become weak due to poor governance by the elites (Kolstad and Wiig 2009; Humphreys et al. 2007) and through the role of transnational corporation (TNCs) in terms of corrupt practices in their operations and the state becoming overly dependent on the TNCs for revenue. Weak governance in the resource rich economies encourages corruption (McGuirk 2013; Steven 2003). The state or governance can be weakened by depending on rent from oil and gas because as the government receives 'unearned income' from such natural resources, it becomes less dependent on citizens for taxes which often serve to promote a social contract between the state and the citizens (Moss 2011; Moss and Young 2009). As it has been noted, tax collection ensures accountability between states and their citizens (Brautigam 2008). Hence, rentier states dependent on TOCs and mining firms for revenue for economic development activities can make resource rich economies less accountable and irresponsive to their citizens (Watts 2010; 2009). As Moss (2011, p. 5) contends, when citizens are 'stripped of the power of the purse, citizens are unable to exert leverage on the government for public service provision and responsible management'. Where citizens do not pay much taxes to the state and for the services they receive, they seem not to care about how goods and services are provided and to ask the critical questions about the cost and efficiency associated with them.

Some of the political elites in natural resource rich countries reduce tax burden on citizens to avoid the demand for democratic accountability (McGuirk 2013). In some resource rich countries, because of over dependence on natural resource rent, the governments fail to strengthen the capacity of state institutions to collect tax from the citizens, creating weak institutional arrangements (Devarajan et al 2010) and avenues for corruption (Vicente 2010). Corrupt practices that divert resources into the hand of the political elites and their networks does not only divert public resources into private hands, but can also discourage people from using their entrepreneurial skills to create wealth and to promote national development.

Persistence of rent seeking behaviour in a country can discourage entrepreneurial development as it becomes cheaper and more profitable to earn income from natural resources than businesses such as industry and innovation that involves more risk (Sachs and Warner 2001). Rent from natural resources, such as oil, can discourage development of entrepreneurial skill in a country since people concentrate their efforts on how to win political power or join the elite so as to have access to the rent instead of using their knowledge and skills to create wealth from other sectors (Auty 2001). In some of the natural resource rich countries in the developing world where the state is the main source of wealth creation and accumulation, citizens sometimes focus their energy on how to capture state power and its resources rather than focusing on entrepreneurial skills development. According to Sachs and Warner (2001, p.

835) natural resource abundance could crowd-out entrepreneurial innovation, when returns and wages in the natural resource sector are high enough to encourage entrepreneurs to work in the resource sector. Entrepreneurial development can also be related to how a country prioritises and invests in education, instead of being overly focused on natural resource windfalls.

Gylfason et al (1999) and Gylfason (2000) suggest that countries that invest less in education due to the presence of natural resources experience lower innovation and entrepreneurial activity, poor governance and lower growth. In the presence of abundant natural resource rent, most people can be attracted to the sector to earn windfalls instead of devoting their resources and ability to creating wealth through industrial production and entrepreneurial skills. Sachs and Warner (2001, p. 836) for instance, point out that due to increase in wages in the natural resource sector relative to the industrial sector in Trinidad and Tobago, the citizens were attracted to the hydrocarbon sectors instead of entrepreneurial development in other sectors of the national economy.

In some cases, it is suggested that educational attainment of a natural resource rich country's population can be adversely hampered since people can be become locked into low-skill intensive natural-resource-based industries, failing to advance their own education and that of their children (Gylfason 2001, p. 858). Where the citizens are engaged in low-skill employments in the natural resource sector, it also negatively affects their incomes. Gylfason's (2001) study suggests that public expenditure on education relative to national income, gross secondary-school and girls' enrolment and retention seem to be inversely related to the proportion of natural resource wealth in national wealth in countries (Gylfason 2001). It is noted that the higher the proportion of natural resource wealth in a country's national wealth, the poorer it performs on gross secondary and girls' enrolment and retention. This relation should not however, be seen as deterministic, but it is dependent on how the country prioritises its spending of its natural resource windfalls, since some countries like Ghana appears to have experienced improvement in social services like health and education with the onset of oil production (Obeng-Odoom 2015a). Countries, like Botswana also have high natural resource wealth to national wealth but its expenditure on education relative to income is one of the largest in the world. Thus, as Gylfason (2001, p. 851) noted, it is not the existence of natural wealth that seems to be the problem, instead, it is the failure of the political elites to avert the dangers that can be associated with nature's gift (Gylfason 2001, p. 851).

According to Sachs and Warner (1999, p. 45), the timing of the natural resource boom and the sectoral distribution of the windfalls determines whether or not the boom stimulates the right sectors of the national economy. It is argued that in most of the natural resource rich

economies in the developing world, the resource sector could crowd-out capital from other sectors, including investment in human development [education and health] (Gylfason 2001). Limited investment in human capital such as health and education can negatively affect general socio-economic development. Some of the natural resource rich states seem to be blinded by their natural wealth, ignoring the need to develop their human capital as a means of creating wealth (Gylfason 2001, p. 850). There can also be a dilemma among the population or the business people as to whether or not investing in other sectors, such as manufacturing will be profitable for entrepreneurs instead of joining the political elite to capture the existing rent from the natural resources sector (Sachs and Warner 1999, p. 45). Rent seekers can sometimes create influential lobby groups that block economic reforms that can help to transform the economy (Stevens 2003, p. 16) from a natural resource-dependent to a more diverse one.

Barma et al. (2012, p. x) suggest that natural resource rents can be transformed into riches through improving sector governance by building a natural resource 'value chain' since simply extracting resources out of the ground and trading them for rent does not translate into economic transformation. Even though commodity boom can promote economic growth, such growth is often subject to shocks and its impacts can be limited to those that have access to the rents. Rents have to be collected by government institutions and channelled into productive sectors to transform windfalls into assets and to promote sustainable development. Barma et al. (2012) argue that countries must focus on 'good fit' rather than 'best practice' and policy makers must pay attention to the linkages across the value chain in understanding natural resource–led development. Focusing on linkages will enable us to understand how the natural resource sector affects other sectors of the national economy.

2.6 **Impact of natural resource dependence on industry and agriculture**

Exploration of natural resources can become harmful for countries when it leads to crowding of funds, capital and labour from the manufacturing and agriculture sectors of the national economy (Ross 2012). Natural resource endowment can also be seen as problematic for a country's development windfalls from the natural resource exports lead to appreciation of the local currency which makes local products (manufactured and traded goods and services) less competitive in the export market (Sachs and Warner (2001; 1997). A curse also can be said to manifest where a country, due to over-reliance on natural resources, there is limited investment and crowding of resources and labour from the agricultural sector (Auty 2001). Gelb's (1988)

study showed how Nigeria and Ecuador's manufacturing and agricultural sectors deteriorated due to a natural resource boom in those countries. Meanwhile, it seems in order to promote expansive socio-economic development in the resource rich economies, investment in industry and agriculture is important since these sectors are labour intensive, can have implications for poverty reduction and have linkages to other sectors of the economy.

Sachs and Warner (1999, p. 61) noted that a resource boom can stall industrialization or lead to de-industrialization of an economy where booms in the resource sector draws away resources from the tradeable sectors, and reduces the scale of economic activity and profit in other sectors of the economy. They argue that the question of whether or not a resource windfall can 'sow the seeds' of development depends on the return on tradeable sectors of the economy relative to the natural resource sectors. Where there are high returns on the natural resource sector [non-tradeable], a resource boom pulls capital into that sector which can negatively affect growth in the tradeable sectors (manufacturing, agriculture and services) through the Dutch Disease (Sachs and Warner 1999, p. 63). Windfalls from the natural resources are sometimes consumed on goods and services instead of reinvesting into productive sectors.

As far back in the 1950s, Hirschman (1958) stresses the tendency of natural resource to have limited backward and forward linkages, leading small impacts on other sectors of the economy. The natural resource's sector is criticised for its tendency to harm growth in the industrial (manufacturing) sector due to its limited linkage to the national economy (Ross 2012; Karl 2004). For instance, the petroleum industry according to Ross (2012, p. 44) often operates in an enclave, where the oil companies literally work in geographical spaces – isolated and self-contained from the national economies such as the offshore oil rigs where crude is lifted and transported to the global market directly. Karl (2004, p. 663) also notes that because it is enclaved and capital intensive, the hydrocarbon industry creates weak linkages to the broader national economy and less employment as well. The natural resource sector sometimes operates as an 'autonomous economy' within the national economy, which linkages with the external world instead through the sale of crude oil. Because the hydrocarbon industry is often conditioned toward the external economy through crude export, it can sometimes have less impact on the national economy apart from the rent or windfall it generates. Due to the limited linkages to the national economies, downstream processing often hardly emerges, prospects for technology transfer and development of hydrocarbon industry infrastructure in the country becomes limited since the petroleum is often refined outside the resources rich countries in the developing world (Karl 2004, p. 663). In the advanced economies like the US however, because the main TOCs are headquartered there, there have been integration of the hydrocarbon

assemblage into the national economy through the development of extraction, transportation and innovation technologies and knowledge transfers (Karl 2004; Wright and Czelusta 2004). Even though Morris et al (2012) recent study shows natural resources can sometimes provide opportunity for industrial growth in Africa, thus, the natural resource-industrial growth relation is non-deterministic, there is limited large scale natural resource driven-industrial development on the continent.

In developing economies, because the natural resource sector, especially oil, is a capital-intensive industry and has limited integration into the national economy, it also creates limited employment per unit of capital invested. There can also be limited employment of locals due to limited availability high skills required in the localities where the oil exploitation often occur. For instance, according to Maass (2009), in Marathon oil's US$1.5 billion petroleum facility in Equatorial Guinea, raw materials, including cement are imported instead of relying on local supply from Malabo because local materials are unreliable and expensive. Most of the workers in the oil industry in the country are also expatriates. In the oil exporting countries in the Gulf region also, most of those employed in the sector are expatriates since they have the skills (Ross 2012; Karl 2004). According to Karl (2004, p. 665), between 50 and 90% of private sector workers in the Gulf states are foreigners, and in Saudi Arabia specifically, there are 6 million foreigners among the country's 18 million residents. This happens in the hydrocarbon industry because of its technological conditioning where locals often lack the skills required to work in the sector, and it becomes cheaper to employ foreigners that have oil industry work experience that can work with minimal supervision rather than hiring locals who can be costly and take more time to train. Not only can the natural resource sector be discriminatory against local employment, it is gendered as well where there are limited opportunities for women because of the physical requirements in order to work on the oil fields.

The natural resource sector can crowd-out funding for the manufacturing sector and makes it less competitive. When this happens, it can deprive women employment opportunities and economic empowerment since it can limit the development or expansion of labour-intensive manufacturing sector that can employ more women. Maass (2009) noted that the labour intensive nature of the manufacturing sector draws women from the home into the workforce, leading to economic and political empowerment. The hydrocarbon industry on the other hand seems to keep women in the home because it is capital intensive, providing fewer employment opportunities. Even the few jobs that are generated in the hydrocarbon industry are viewed as women unfriendly since it requires physical strength to work at height and lifting or moving heavy objects (Oliveira 2007). Reproductive responsibilities of women such as

pregnancy and childcare can also interfere with their work, reinforcing gender ideologies of appropriate work for men and women (Oliveira 2007; Sala-i-Martin and Subramanian 2003).

Excessive dependence on natural resources that deprive women of economic opportunities can have negative consequences on the national economy since women form an important component of it. This can lead to increases in poverty as women can be denied employment opportunities through the hydrocarbon industry crowding investments out from other sectors that can employ more people and encourage economically inefficient investments such as uncompetitive industries and prestige spending on 'white elephants' (Bridge and Le Billion 2013, p. 143). Even though it can be said that FDIs form the majority of the capital that is invested in the hydrocarbon industry in the developing world, their governments also direct some of their revenue into the sector and into other prestigious projects. In the 1970s for instance, the Nigerian government used oil windfalls to finance the building of the Ajakouta steel complex which became a 'white elephant', unable to produce any commercial quantity of steel due to poor management and planning for the source of raw material for the industry (Oliveira 2007; Sala-i-Martin and Subramanian 2003). Even countries that have a relatively good manufacturing sector before oil discovery can be affected by the boom as in the case of Algeria where its oil booms in late 1970s to early 2000s caused the country's manufacturing sector to contract (Ross 2012). Morris et al (2012, p. 7) argue that a natural resources abundant economy suffers a curse because the resource sector can deter capital and labour from the tradeable (manufacturing and service) sectors. This can negatively affect growth in the tradeable sectors. The resource's sector can also create economic enclaves with few forward and backward linkages to the other sectors. Investing the manufacturing sector has the potential of technological transfers as people learn-by-doing (Frankel 2010; Steven 2003). A decline in manufacturing can also negatively affect other sectors of the national economy, including agriculture as it limits the ability of the country to process agricultural products.

Besides its impact on industrial development, a country's agricultural sector can also decline or be neglected due to the discovery of natural resources such as oil. For example, in Equatorial Guinea's case, the oil boom has not translated into revitalisation of its cocoa, coffee, or the food sector (Oliveira 2007) since the government is more focused on the oil sector than the other sectors of the economy. The agricultural sector produces below its capacity due to limited investment in the sector as most investments, especially FDIs are channelled into the hydrocarbon industry which have higher returns for MNCs. Gary and Karl (2003, p. 29) noted that Gabon in the 1970s and 80s epitomised a classic case of Dutch Disease and an 'enclave economy', due both to the lack of linkages between its oil sector with other productive sectors

of the economy and physical isolation of defined areas of production. It is argued that with the exception of the forestry resources (the country's second economic sector) and the declining mineral sector, all economic activities are concentrated heavily in the urban centres (Gary and Karl 2003, p. 29). Local food production was limited, with most of its food products imported from France, with limited land area cultivated due to lack incentive to engage in agriculture.

Steven (2003) argues that for most oil-exporting countries in the developing world, agricultural outputs seem to contract after the oil boom in the 1970s. This is because only a few countries' investments were aimed at strengthening the productive base of the tradable sectors, especially agriculture, instead most of their development policies were orientated towards the hydrocarbon sector which often promote rent seeking (Steven 2003, p. 22). Because of the limited investments in such resource rich economies' industrial and agricultural sectors, they manifest the Dutch Disease (Gary and Karl 2003; Corden and Neary 1982). Agricultural exports – a labour intensive economic activity particularly important to the poor can be adversely affected by petroleum exploitation as the resource windfalls makes it cheaper to import food products (Gary and Karl 2003, p. 22; Fardmanesh 1991). The deterioration of the agricultural sector of oil exporting countries not only makes them more dependent on the hydrocarbon industry, it can exacerbate other problems of dependency, and can lead to loss of economic competitiveness (Gary and Karl 2003, p. 22; Krugman 1987). Nigeria exhibited symptoms of the Dutch Disease where the discovery of oil in the 1960s led to an overvalued local currency which harmed its agricultural sector since it agricultural exports became globally uncompetitive (Gary and Karl 2003).

Ghazvinian's (2007) study shows how Gabon become dependent on food imports where even common fruits like banana had to be imported due to the impact of the Dutch Disease and limited incentive for the people to engage in agricultural production despite its huge land and forest. Most of the population of Gabon became concentrated in the city where government divert its spending of oil wealth. Indeed, Gabon food dependency became serious to the extent that in the 1980s, when the country was in the midst of its oil boom, it imported 96% of its food, including common products like eggs since no one appeared to be concerned with raising chicken in an oil-cash-flooded economy (Ghazvinian 2007, p. 101). Even as of 2007 when Gabon was running out of oil, about 60% of the country's food products was still imported (ibid.). Oliveira (2007, p. 74) argued that Gabon still remains a caricature of food dependency, while Equatorial Guinea's oil boom has neither helped it to revitalise its agricultural sector, instead, it has resulted in increased food importation. Nigeria's agricultural

sector also still remain poorly developed as the country derived about 95% of its foreign exchange earnings and 65% of total revenue from crude oil in 2015.

Oliveira (2007, p. 72 – 3) argued that Gabon and other cases showed that the neglect of the countryside and decline of the agricultural sector during natural resource booms can partly be a consequence of state policies or non-policies such as poor application of technologies and exploitative state policies that uses marketing boards to extract surplus from the pauperised peasantry, leads to the demise of the sector. Oliveira (2007, p. 73) further noted that for most of the Gulf of Guinea, the decline of agricultural productivity can partly be attributed to lack of incentive to invest in the sector due to availability of oil windfalls in some of the countries like Nigeria, Angola and Equatorial Guinea, leading to increased food imports in the region. When countries in the developing world discover oil and other natural resources, agriculture can become less prioritised, leading decline in production and loss of incomes for rural communities that depend on it for their livelihoods. As Oliveira (2007, p. 74) noted, the neglect of the agriculture sector and increased food imports deepens the decline of the crucial labour-intensive sector that often serve as alternative to mass unemployment rural communities.

Food imports can be a drain on a country's foreign exchange reserve, while lack of export-led agriculture can also deprive it of additional revenue to undertake its developmental projects. Efforts by countries like Nigeria, Angola and Gabon to revive their agriculture sectors seem to have failed and their only impacts seem to be a proliferation of rentier opportunities in the form off contracts for fertiliser importation (Oliveira 2007, p. 75). Thus, channelling some of the oil windfalls into agriculture development merely converted instrument of rent-seeking through oil-subsidy for agriculture (Oliveira 2007, p. 76; Karl 1997, p. 81). The agriculture sector can decline because of lack of incentive to invest in the sector as most of the oil money are spent on expensive or exorbitant infrastructure in the cities in the name of 'modernisation'. Neglect of the rural communities can also lead to migration from those areas to the cities in search for employment opportunities. According to Oliveira (2007, p. 77), the reduction in agricultural output has proceeded in tandem with the displacement of the rural population away from the countryside and towards the urban areas, making agricultural decline and urbanisation mutually reinforcing phenomena. However, with limited linkages between oil and employment creation even in the urban centres, expectation of better standard of living among the populace outside the agriculture sector are often a mirage.

From the above, it seemingly fairly obvious that exploration of natural resources that have limited linkages to industrial and agricultural sector development can partly condition an economy to become an enclave, and negatively affect development and governance of a

country's national economy. And as Oliveira (2007) suggests, due to the enclaved nature of natural resource based economies, they produce two spaces for the government: 'useful and useless'. He argues that the 'useful spaces' for resource rich countries are the natural resource's sector or regions that the government place a premium on since they generate the rents, whereas the 'useless spaces' are the non-natural resource (industry and agriculture) sectors or non-oil regions of the country. Be it 'useful' and 'useless' spaces are often created with the help of the oil companies since the region or spaces where they operate are classified by the government as useful ones because of the revenue that come from there. Government focusing too much on the natural resource sector can have negative effects on its development since in most cases, it has limited forward and backward linkages to the local economy, instead, it is oriented and conditioned to serve the external global economy. Yet, when natural resource rich economies become overly dependent of rent payment from multinational corporations (MNCs), they are often subjected to external price volatilities in commodity prices which can negatively affect their growth and planning during the bust periods. Inadequate investments by natural resource rich economies in the manufacturing and agricultural sectors undermine their ability to generate revenue during the downswings (or bust) in the oil sector (Auty 1993) to finance development programs. As Maass (2009, p. 56) noted, even where the decline or neglect of the agriculture and manufacturing sectors do not hurt the economy early due to the ability of the country to import some of the products, over a long term, a decline in windfalls will leave the country's industrial and agricultural sectors atrophied. The state can however neutralise a country's overdependence on natural resource export and import of manufactured goods through targeted investment of natural resource rent into technologies and human capital to stimulate resource based industrialisation, as in the case of Finland, Botswana, and others (Jourdan et al 2012; Mbeki 2011; Jourdan 2010). Thus, the investment policy that is adopted by a government for its natural resource windfalls plays a crucial role in avoiding the macro and micro-economic pitfalls associated with natural resource endowment, where for instance, through economic diversification, a country can create alternative sources of revenue through value addition (Steven 2003, p. 22). Yet, using natural resource windfalls to leverage economic growth goes beyond the state capabilities. It is also dependent on technology and capital [often controlled by TOC], interacting with national institutions, agency and actors that ensure accountability, and local politics that enables the political elite to be responsive to the needs of the citizens, and to invest resource windfalls in structural transformation ventures instead of politically cyclical consumption.

2.7 **Resource abundance, weak institutions and poor governance**

How natural resource windfalls mediate and are implicated in institutional deficiency, poor governance and economic performance in resources rich economies (with some exceptions such as Norway, Australia, the US, Chile and Botswana) has been the focus of the resource curse analysis (NORAD 2013; UNDP 2011; Mehlum et al. 2006). To Bruckner (2010), a curse manifests where a resource rich country is characterized by corruption and weak checks and balances in political decision-making. There is some suggestion that in order for the resource rich economies to obtain more benefits from the extractive industry for its citizens, they require efficient institutions that ensure checks and balances, political stability and political elites that are committed to good governance practices like accountability and transparency (Mehlum et al. 2006). Thus, because of the role of governance, and how it conditions and mediates the impact of natural resources on development, the resource curse is sometimes viewed as a governance challenge (NORAD 2013; Pegg 2006).

Mehlum et al. (2006) argue that the effect of natural resource on economic performance is conditional on the quality of existing state institutions before the natural resource was discovered. Where governance institutions in the country are grabber friendly (prone to corruption and rent-seeking behaviour), natural resource windfalls tend to lower aggregate national income, but where they are less prone to corruption (producer friendly) it will raise the income (Ross 2013, p. 11; Mehlum et al. 2006) since the revenue from the natural resources can be used to stimulate growth and distribute windfalls equitably. It is argued that where ex-ante institutions are weak, natural resource windfalls can be dissipated through excessive spending in payment of public sector employment wages and for building and consolidating patronage systems (Ross 2013, p. 11; Robinson et al. 2006).

Weaknesses in the institutional and governance structures of the natural resource rich economies in the developing world can partly be attributed to their social and governance systems which seem to thrive on patronage and clientelistic relations. Patronage is the privilege or material/financial support bestowed on people not based on merit but due to support or association or informal relations with persons in position of power or authority (Kelsall 2013; Khan 2010). Patronage can also involve distribution of material resources or windfalls from natural resources to buy political support and consolidate power (Kelsall 2013; Whitfield 2011; Khan 2010). The natural resources rich governments sometimes spend on projects that will earn them electoral support without looking at the economic merits of such projects for the public good. In some of the democratic settings in natural resource rich economies in the developing countries, instead of improving education and health infrastructure (UNDP 2011),

materials and other financial benefits are used to induce voters (Whitfield 2011; Opoku 2010). Although, this might appear responsive to the peoples' need, it does not lead to structural changes in the economy and such 'hand-outs' cannot be sustained uninterrupted in the long term due to the volatility in commodity prices.

Institutional deficiencies in natural resource rich economies have been identified as one of the factors that negatively affect effective use of resource windfalls for the benefit of their population (Bridge and Le Billion 2013; NORAD 2013; UNDP 2011). Boschini et al. (2007) argue that whether natural resources will be a curse or blessing is partly dependent on the interactions between the institutional settings and the natural resources. Where the governance structure of the country is able to sterilise the rent from the natural resource windfall from destroying its institutions instead of basing it on political patronage, clientelism and sometimes the use of violence, the natural resource exploitation can be a blessing, and not a curse. But it must be noted whereas the state level governance mediate the impact of natural resources on development, resource extraction in most African countries is characterised by 'strategies of extraversion' (Bayart 2000) where the economies of such countries are outward looking through natural resource exports and expatriation of profits (Phillips et al. 2015, p. 4).

Some studies challenged the notion that resources abundance affects governance in a country (Kurtz 2009; Robinson et al. 2006). Kurtz (2009) challenged the notion that the discovery of natural resources leads to institutional atrophy, because according to him, it is the prior conditions – the social relations that govern the economic sectors and other social relations before the emergence of the natural resources which determines if the institutions will be strengthened or weaken. Robinson et al. (2006) also suggest that ex ante institutional arrangements play an important role in how the discovery of natural resource shapes the countries development outcomes. Besides these complex relations between natural resources and institutional quality and governance, there are questions as to how natural resource abundance and democratic polity shape each other.

Is there a causality or correlation between the abundance of natural resource such as oil and lack of transition to or consolidation of democracy? Ross (2012) also raised the question as to whether or not oil and democracy can co-exist. Some argued that although democracy and oil can mix, based on the experiences of the oil rich state in the Middle East, this seems to be rare (Low 2009). Most oil rich countries in the Middle East such as Saudi Arabia, Kuwait and Bahrain and the ones in Africa such as Libya and Angola have not transited to democracy. Countries like Nigeria and Mexico have transitioned to democracy, even though Nigeria's elections have often been characterised by accusation of vote rigging and buying (except for

the 2015 election recently that saw an opposition party win). Equatorial Guinea has also been ruled by a single president since 1979. Governments in the oil rich states are able to entrench themselves in power due to their ability to reduce taxes, increase spending on public services to buy patronage and citizens' loyalty and use of state security to suppress opposition and dissent (Ross 2012). The absence of credible opposition and CSOs enables such autocratic governments to hide their corrupt practices and inefficiencies.

Ross (2012) however, argues that the relationship between natural resource (oil) and democracy is complex since some of the natural resource rich countries were able to transit to democracy, while others did not. Besides the fact that oil seems to constrain the emergence and consolidation of democracy, democratic trends are difficult to explain, with different studies placing weight on different factors (Ross 2012). Some studies suggest that countries are likely to transit to democracy where there is an economic crisis and slow growth rate (Epstein et. al. 2006; Przeworski et al. 2000). Others suggest that higher income can facilitate transition to democratic polity (Przeworski et al. 2000). It is also noted that geography, the proximity to other democratic nations can spark a wave of democracy as happened in Africa in the 1990s, Latin America in the 1980s and the recent 2010 Arab spring in Tunisia, Libya and Egypt and the Middle East (Ross 2012). There are however some autocratic regimes adjacent to democratic countries and vice versa (Ross 2012). External conditionalities such as IMF/World Bank Structural Adjustment Programs (SAPs) in the 1990s for example also facilitated the transition to democracy in some African countries.

Based on the experiences of countries, it seems the factors that shape and condition the development of democracy and its consolidation are complex and varied across spaces. There is no causality between high income and democratic polity. Countries can be of close proximity but have different political systems based on the actors, agency and structures that underpin their governance system. As Ross (2012) argues, some countries have high income but never transitioned to democracy (Saudi Arabia), while some poor countries are still autocratic (Togo for instance is poor with a weak democracy). The petro-states seem to have higher per capita income but with higher inequalities and undemocratic. For instance, Equatorial Guinea's huge oil windfalls are concentrated in the hand of the president and allies while the people live in poverty (Maass 2009; Oliveira 2007). The political elites in Equatorial Guinea are partly able to hold on to power for a long time due to the way they appear to infiltrate the socio-economic and politics of the state and citizens through the use of its oil wealth and the military.

Mann (1984) identified two means through which states or the political elites are able to govern their citizens: infrastructural and despotic power. Infrastructural power is the ability

of the state to penetrate the realm of civil society and to implement political decisions and this is often possible in democratic political systems (Oliveira 2007; Mann 1984). Autocrats however rely of despotic power where the political elites govern without routine or institutionalized negotiation with civil society groups but through force and political patronage (Mann 1984). This is sometimes possible where natural resource (oil) windfalls enable political leaders to exercise almost unlimited power through the use of military force to coerce CSOs into silence or co-opt them to undermine check and balances, and the political and economic institutions of the state (Oliveira 2007). Oliveira (2007) argues that in most resources rich countries in the developing world, governance seems to occur through infrastructural power where the state can infiltrate CSOs and to execute political and economic decisions to gain legitimacy and to perpetuate its stay in power.

Moss (2011) and Moss and Young (2009) argue that abundance of natural resources like oil can affect democratic governance through breaking down of the social contract and encouraging corruption as natural resource windfalls make the government less dependent on the citizens for taxes which are supposed to serve as a social contract for development. Government's reliance on rent from natural resources such as oil can alienate it from the citizens because as the government earns its revenue from natural resources instead of taxes, it creates limited accountability between the government and the citizens. Watts (2010) asserts that a dilemma at the heart of a petro-state is the issue of unearned income, resource distribution and development of social contract. Karl (2007, p. 262) argues that natural resource economies, especially the oil states, because of the value of their commodity can be subjected to external intervention in shaping their internal affairs, and the capture of natural resources windfalls by foreign private and developed or emerging economies interests. But these states are less subject to internal countervailing pressures that can help produce bureaucratically efficient and liberal democratic polities partly because such states appear not to rely on the citizens for tax and the accountability that comes with it (Carmody 2007, p. 13 – 14). McGuirk (2013) uses micro-level survey data from fifteen Sub-Saharan countries to establish a strong within-country correlations between increased sums of natural resource windfalls, decreases in enforcement of taxation and the demand for democratic governance. Ross (2013) argues that natural resources such as oil makes authoritarian regimes more durable and increases corruption, limited or lack of avenues for citizens and CSOs to demand for democratic accountability.

Jensen and Johnston (2011, p. 662) examines other aspects of governance such as political risk and reputation by focusing on how natural resource wealth affects the incentives of governments to uphold contracts with foreign investors. They argue that although most states

suffer reputation costs from reneging on contracts, governments in natural-resource rich economies are less sensitive to these costs, leading to a greater probability of expropriation and contract disputes. Political risks associated with natural resource endowment include government's expropriating the assets of TOCs, threat of political violence, and restrictions on the firm's ability to expatriate funds (Jensen and Johnston 2011). Using data from the political risk insurance industry, Jensen and Johnston (2011, p. 662) show that resource dependent economies have higher levels of political risk associated with FDIs, regime type and civil conflicts. Jensen and Johnston (2011, p. 663) argue that although Robinson et al. (2006) highlight government policy as one of the factors that conditions the curse, political factors appear to receive limited attention. Meanwhile, the politics in a country, in terms of whether or not it is based competitive clientelism impacts how natural resources are appropriated (Whitfield and Buur 2014; Whitfield 2011). Jensen and Johnston (2011, p. 663) argue that natural resource wealth not only affects the resource windfalls that become available to governments, but also the incentives for their behaviour. Jensen and Johnston (2011, p. 663), Morrison (2011) and Bearce and Laks-Hutnick (2011) find that natural resource rents affect pressure for redistribution and government stability.

As Ross (2012) argues, although in most developing countries in Africa, the abundance of natural resource has affected governance, the issue as to whether or not natural resource endowment strengthens dictatorship or weaken democracies seem to be multifaceted. Resource wealth appears to strengthen an incumbent government, be it an autocracy or democracy (Ross 2012). Goldberg et al. (2009) argue that abundance of natural resource lead to less competitive politics because those who have access to its windfalls are able to co-opt potential opponents, purchase patronage or spend the resources on social services to give them political advantage over their competitors. Oliveira (2007) argues that in countries like Equatorial Guinea, the state has been centralised and built on oil wealth, leading to de-institutionalisation of decision making processes. The patronage can however, be extended to external networks such as TOCs that provide financial and logistical support to governments in power in return for lucrative contracts, undermining transparency and accountability policies that can help to mitigate the curse (Kolstad et al. 2009). Weak institutional arrangement where the institutions merely exist on paper, but do not function well affects transparency in the use of windfall. Even in countries such as Angola where there is a strong military, there can challenges in enforcing regulations due to inadequate regulatory structures. This can undermine the capacity of state institutions to enforce environmental policies in the natural resource sector which can lead to pollution and destruction of local livelihoods, poverty and violent conflict.

2.8 **Impact of natural resources on environment and violent conflict**

Explanation of the curse has been expanded beyond an initial econometric perspective that focuses on connection between natural resources and economic growth (Auty 2001; Sachs and Warner 2001), how natural resources impact and are impacted by the broader political economy (Mehlum et al. 2006; Bruckner 2010) and social and environmental challenges associated with resource exploitation (Watts 2010; 2009; 2004). Due to the destructive impact of natural resource exploitation on the environment and conflict, the curse cannot be limited to socio-economic challenges only, it is more nuanced. Exploring natural resources such as oil can be a source of conflict and environmental degradation (Maass 2009) as various interested groups or individuals compete for windfalls and companies pollute the environment through their activities. Natural resource induced-conflicts can arise due to grievance (where people or groups in a resource rich region are cheated or perceived to be cheated) or as a result of greed. Groups of persons that have an impression of being cheated in terms of the distribution of natural resource windfalls can resort to armed conflict in order to demand their share of it.

In most developing countries, it has been suggested that the windfalls from natural resources are often plundered by MNCs and the political elites while the people suffer from poverty and environmental hazards (Collier 2010; 2008). However, in some cases, as happens in Nigeria's Niger Delta, local communities' attempt to take their share of the natural resource through tapping illegally from the oil pipelines of the companies ('oil bunkering'), also resulting in oil accidents and spillages (Watts 2010). Spillages arising from exploration and production by oil companies and illegal activities of local residents result in pollution and destruction of land and atmosphere, contamination of rivers which destroy fish and livelihood of local communities located in the oil production regions. The social and environmental dimensions of the curse are mutually constitutive. This is because as local communities become disgruntled for not benefiting from the resource windfalls from their land, they develop unconventional means of earning their share of the windfalls which can lead to destruction of the environment such as through oil spillages from illegal tapping.

Oil spills from the hydrocarbon industry can destabilize eco-systems on which rural livelihoods depend. In Nigeria's Niger Delta for example, it is noted that the irony of the development of oil wealth are contradicted and manifested through dying ecosystems, loss of fish species, pollution of water bodies from oil spillage and air pollution from gas flaring (Watts 2008), while politicians and oil company benefit from the windfall of oil. Ghazvinian (2007) argues that whereas revenues accruing from export from natural resources are often shared

among the political and business elites in the resource rich countries, the environmental challenges such as oil spills, gas flaring and other hazards are often suffered by ordinary citizens that live close or in the resource rich region. Given the negative impacts of natural resource on the environment, Watts (2004) notes that exploitation of the resources can lead to environmental catastrophe, disrupting rural livelihood, water pollution and destruction of sea ecosystems from oil spillage. Maass's (2009) study also demonstrates how pollution and gas flaring in the Niger Delta from activities of oil companies and militias have disrupted the environment and livelihoods of the local communities. Thus, local militias in oil rich communities such as the Niger Delta are sometimes accomplices in the destruction of the environment since in their attempts to loot the oil from the TOCs, they also destroy pipelines which lead to further pollution of the environment and destruction of wildlife and rivers.

Besides oil-related environmental challenges, exploration of hard minerals like gold also pollutes the environment and water bodies. Hilson (2002) suggests that small-scale gold mining is responsible for land degradation and mercury pollution in Ghana. Aryee et al. (2003) argue that irrespective of the scale of operation, mining activities have negative consequences on the environment in Ghana. Rivers and streams in mining communities are polluted by solid suspensions and mercury discharges, and these pollutants have health implications for people whose livelihood depends on them (ibid.).

The level of environmental pollution associated with natural resource exploitation can be partly dependent on the quality of institutions and governance in a country. It is suggested that countries with good regulatory framework and strong independent institutions to ensure compliance of TOCs are less likely to experience negative environmental consequences (Maass 2009). Even where environmental pollution happens, there are enough harsh punitive measures to deter their future occurrences. For instance, according to Maass (2009), in Nigeria over 55% of its oil-related gas is flared, while only 1% is flared in the US. This seems to show how TOCs can disregard safety and environmental regulations in developing countries but not in their home countries due to differences in enforcement of regulations. Even though the government has a policy that prohibits gas flaring in Nigeria since 1984, there has been poor enforcement of the regulations due to weak institutions and corruption. In some cases, oil companies are granted exemptions to flare the gas because of unavailability of facilities to process it.

The impacts of environmental pollution seem to be most felt in the developing economies. As Collier (2010) contends, Africa will be the most affected by climate change as rain-fed agriculture will be affected due to drought, floods and heat, with serious implications for food security. Rural communities are often affected since they directly depend on the

agricultural sectors for their livelihood. In places such as the Niger Delta, the destruction of local livelihood (farming and fishing) as a result of oil spillages are partly responsible for the conflict in that region (Obi and Rustad 2011; Shaxson 2008; 2007). The resource curse seems to have been problematic for developing countries because it does not only stall economic growth; it destroys the environment and creates violent conflicts.

Boschini et al. (2007) in their studies reveal that natural resources such as oil and diamonds have affected development outcomes in Sudan and Angola through their fuelling of conflict in these countries. Collier and Hoeffler (2004) argue that greed and grievance play important roles in civil conflicts in resource rich economies since where there is an opportunity to gain wealth and power, people can be more motivated to engage it. Economic and political inequality, repression of political rights and ethnic divisions can also lead to conflict. Inequality can be a result of political elites and cronies appropriating a national resource for their selfish interest at the expense of the larger population.

Material wealth from natural resources seemed to be one factor that motivated people to get involved in conflict as the case in the Niger Delta where huge oil resources fuelled conflict, though they sometimes based their arguments on neglect by the state. The state however in 2009 granted amnesty to some ex-militants in the Niger Delta and they were successfully retrained for employment. Klare's (2001) study provides an account of extortion in natural resources wars such as timber in Cambodia and diamonds in West Africa. Thus, whereas the grievance argument for conflicts is valid, greed, the high prospect of booty also motivate people to get involved in natural resource based conflicts. Conflict, be it grievance or greed oriented can affect a country's development efforts. As Frankel (2010) argues, conflicts that sometimes characterise the natural resource rich states can derail their economic growth.

Collier and Hoeffler (2004) and Collier (2008) argue that it is the economic gains (greed) which drive people to involve themselves in conflict. The greed hypothesis noted that availability of natural resources (finance) often motivates people to start a conflict since the benefit can be huge and availability of natural resource can also prolong conflict as factions are able to finance the conflict through the export of the resources like diamonds (Collier and Hoeffler 2004). Keen (2012) however criticised Collier (2008) for avoiding political wars [wars for sovereignty of a region] and for focusing too much on conflicts (wars) that are fuelled by struggle over natural resources. Keen (2012) criticised Collier (2008) for downplaying separatist groups that fight for regional autonomy and not necessarily for natural resources.

Further, Keen (2012) emphasised grievances due to horizontal inequalities (inequalities among groups) is a more probable explanation for conflict (see Ross 2007). Stewart (2008)

emphasises the role of grievance in terms of horizontal inequalities among social groups as one of the main causes of conflicts and civil wars. Collier (2008) emphasised vertical inequalities (inequalities between individuals and groups). But because there appears to be causal links between power and ability to gain wealth, people's motives are not easily distinguishable since greed and grievance can be mutually reinforcing. In some of the resource rich regions, the locals are both perpetuators and victims of violence over natural resources (Maass 2009; Ghazvinian 2007). Ghazvinian (2007) and Maass (2009) studies show how the youth in the Niger Delta promotes violence by fighting among themselves and against the security forces of companies and the state in their quest to tap into the oil pipelines. Some groups can use the resource conflicts in communities to commit crime. In 2004, it is reported that 200,000 barrels of crude oil (10% of crude output per day) has been lost in Nigeria due to stealing by armed groups (Ghazvinian 2007). Thus, while some groups might have a genuine grievance, greedy ones can infiltrate them. There mixed motives where grievance, politics or separatists groups, economic, environmental challenges, or greed fuel conflicts. Greed can be a rallying point for localization of identity where even people with different interests can unite to fight for the right to control and appropriate a particular natural resource.

Apart from the financial gains that can generate conflict in natural resource rich economies, factionalism within countries can create fighting among rival groups over who owns and can appropriate natural resource windfalls (Hodler 2006). Hodler (2006) contends that fractionalised countries (countries with competing interests) are more likely to suffer from fighting among groups which can lead to decrease in productivity and weakening of property right. He cites the case of Norway and Botswana as less fractionalized countries and this partly seems to explain their ability to escape the curse as against fractionalised countries such as Nigeria and Angola. But even though it is tenuous, even people of the same ethnicity or group can have different interests and can fight over natural resources if certain individuals or groups within the large group think their personal needs are not met. It seems the possibilities of conflict or otherwise and success or otherwise in using natural resource windfalls to promote economic development will to a large extent depend on the groups' ability to define their goals, garner necessary support to pursue it.

Conflict among groups in a natural resource rich economies can reduce economic development as production cost increases and make the region less attractive for investment, even though there are some conflict areas in Africa such as the Niger Delta and Cabinda in Angola where oil companies are operating despite the violence in those regions. TOCs operate in conflict regions because their operations are capital intensive and once the investments have

been sunk into the project, companies are forced to stay in order to recoup their investments and because the natural resources such as oil are location specific (see Ghazvinian 2007). Oil and mineral reserves are point-source resources (Sala-i-Martin and Subramanian 2003) and MNCs will follow them wherever they are located. Geography, therefore shapes inflow of investment in the hydrocarbon and other mineral industries. Beside external interest of TOCs and governments that influence investment flows into petro-states, they also influence, aid and facilitate how the windfalls are plundered. In 2003 for instance, it was reported that the Equatorial Guinean president and his family had 60 bank accounts at the Riggs Bank in the US with deposits ranging from US$400 to US$700 million dollars, while the country ranks among the worst on the Human Development Index (Oliveira 2007).

Poverty and inequality emanating from the way natural resource windfalls are appropriated can pose a threat to equitable development. Ross (2007) suggests that natural resources have the potential of causing vertical or horizontal inequality among the population or regions. Vertical inequality occurs where the distribution of revenue and income from resources leads to a widening gap between the rich and the poor, while horizontal (or geographical) inequality manifests in a form of development gap between resource-rich and resource-poor regions or different ethnicities in the country. Logically, one will expect that the resource rich regions will develop better, but in most cases powerful political elites divert the windfalls to develop their communities at the expense of the source of the natural resource, with rural areas the most neglected as revenue is directed at luxurious projects in urban centres (Oliveira 2007). This appears to happen because the urban centres are more educated, which potentially can pose political threat to the political elites where adequate social services are not provided. Disparities in resource distribution between regions create spatial differences in development, with vertical inequality impeding poverty alleviation efforts (Ross 2007; Easterly 2002), while horizontal inequalities can lead to regional conflicts (Ross 2007). Harnessing natural resource windfalls for development appears to be dependent on the actors and their decisions and the political economy that structures how resources are utilised. Hence, the manifestation of the curse can be seen as the results of assemblage of actions, policies and politics across global, national and local scale.

The scale of analysis as to whether or not a country suffers a curse has been criticised for being too state-centred and selective (Stevens 2015; Ploeg 2011; Ploeg and Poelhekke 2010) and not sufficiently accounting for how the curse manifests unevenly. The methodology used in calculation the relationship between natural resource endowment and economic growth has also been criticized (Ploeg 2011; Ploeg and Poelhekke 2010). Wright and Czelusta (2002,

p. 2) suggest that the cross-country regressions can be subjective because of 'selection bias'. Ploeg (2011) and Ploeg and Poelhekke (2010) suggest that the regressions which form the basis of most of the earlier empirical debate on the curse are often based on endogenous econometric variables (Ploeg (2011, p. 371). Ploeg (2011, p. 371) further argues that the negative correlation between economic growth and resource depletion can be a result of picking up cross-country variations in per capita income. For Mideksa (2013, p. 279), although evidence from cross-country regressions is useful, the presence of contradicting evidence of positive impact of natural resources on development in some countries suggests that there might be other internal and external factors or relevant variables that mediate and shape development outcomes. Stevens (2015) also points out that even though there are limited dissenting views on the conclusion from empirical work on the curse, questions can be raised about the methodology used in explaining the phenomenon (see Di John 2011; Brunnschweiler 2008; Brunnschweiler and Bulte 2008; Lederman and Maloney 2008). Mideksa (2013, p. 279) argues that in the absence of sufficient data on their economy pre-natural resource exploitation, it is difficult to determine if their performance with the natural resources could have been driven by pre-existing variables other than natural resources alone. Also, as Mideksa (2013, 279) further noted, sometimes, estimating the impact of natural resource is complicated due to the difficulty of estimating how an economy might have performed in the absence of the natural resource, even though there some natural resource poor countries that have performed creditably well. It is also difficult to isolate the impact of the natural resource sector from other sectors and factors that impact development outcomes in countries. In analysing what constitute a resource curse or challenges associated with the hydrocarbon industry in the developing world, there is the need to examine what constitute development and the role of state and world systems actors, structure and agency in shaping and conditioning the development process and its outcomes.

2.9 **Theorising development: actors and structures**

Development is a contested concept, and its meaning and how it is pursued has changed over the years. Development has physical, economic, social, political and cultural connotations. Despite the challenges associated with defining development, it is often associated with 'progress' and improvement in the human condition and the ability of countries, communities or people to tap into human and natural resources to improve their living condition. Seers (1969) however, noted that in conceptualising development: poverty, unemployment and inequality are critical issues (Nafziger 2005; Seers 1963; 1969). According to Seers (1969;

1963), in analysing whether or not a country is experiencing development, one has to query: what has been happening to poverty? What has been happening to unemployment? What has been happening to inequality? If one or two, or especially all the three issues have worsen, it would be strange to refer to what has happened in such a country as 'development', even where its per capita income has increased (Nafziger 2005, p. 3; Seers 1969, p. 3 – 4). Nafziger (2005, p. 16) took Seers argument further and noted that development should be examined in terms of how countries are able to promote accelerate growth, reduce hunger, poverty, illiteracy, preventable diseases, gender inequality, and unsustainable environmental degradation.

Theorizing what constitutes development can partly be traced to modernization and dependency theories (Elliott 2009; Willis and Kumar 2009; Pieterse 2001; DeSoto 2000; Chilcote 1984). Modernisation theories viewed development as a linear process where developing countries have to embrace new ideas from the advanced economies in order to promote their economic, technological advancement and cultural change (Willis and Kumar 2009; Neumann 2005; Pieterse 2001). Classical theories (for instance, by Adam Smith, David Ricardo) and modernization theories in the 1950s conceptualised development as typically comprising industrialization and mechanization to promote economic growth through structural and social system reforms by the state (Pieterse 2001). This involves countries in the developing world copying the development paths of the western or advanced countries. Dependency theories in 1970s believed in the same tenets of development but stressed the need for detachment of developing countries from the developed world through import substitution industrialization to promote development because of the structural imbalances in the global economy (Rodney 1982; Oman and Wignaraja 1991). Both approaches seem to analyse development as a linear and progressive process that countries must go through, similar to Rostow's stages of development (Rostow 1960). But as Pieterse (2001) noted, conceptualising development as a linear phenomenon where countries and cultures will copy from other is problematic since country's and people's needs vary, as well as their social, economic and political environments (Pieterse 2001).

Neoliberal policies which started in Chile in the 1970s, and mostly in Africa in 1980s although also stresses on economic growth as the yardstick for development, it advocates for a reduction of state role in the process except for the provision of an enabling environment for private enterprise to thrive (Harvey 2007; 2005). It emphasises market forces in the development process (Harvey 2005). From a neoliberal perspective, the state is supposed to play subsidiary role to market forces in the development process as outlined in the Washington Consensus (Harvey 2005). In Africa, natural resources exploitation, facilitated by neoliberal

policies has been one of the main drivers of the continent's integration into the global market economy (Breisinger et al. 2010; Ofori-Boateng et al. 2010). The market forces were supposed to shape the development processes on the continent, with limited state interference.

There are some theorists who argue that theorisation of development has been used as tools for domination of the developing world (Debal 2009; Chilcote 1984). Chilcote (1984) argues that development discourse is a capitalist tool that is used to dominate and subordinate the developing world. Debal (2009) on his part noted that the concept of development and underdevelopment as Western hegemonic discourses that are strategically deployed to achieve political and economic domination. According to Harvey (2007, 2005), Larner (2009) and Tickell and (Peck 2003), such hegemonic development discourses are promoted through industrialization, urbanization, neoliberalism, democracy, and market-oriented policies. Development discourses are used to create subjectivities and binaries between and among various people in the world. Chilcote (1984) suggests that due to the complex and diverse nature of human needs, several co-existing theories can be used to explain human development.

An alternative development paradigm emerged in the 1970s, and it is more concerned with localised development. It is sometimes seen as a 'challenge to the mainstream and a part of global alternative' to development (Pieterse 2001 p.74). Alternative development or human development approach which emerged in the 1970s and 80s stressed the importance of human flourishing, satisfaction and expansion of people's choices. It stressed the need to rethink development in terms of improving living standards, quality of life of the people and people's participatory approaches to development (Pieterse 2001). Whereas modernisation theory emphasizes economic growth and technological change, alternative development emphasizes agency, people's capacity to effect social change (Pieterse 2001; Sheth 1987). Alternative development approaches are critical of mainstream development strategies, and advocate for localized development mechanisms where local people define their needs and devise strategies to accomplish them (Elliott 2009; DeSoto 2000). They argue that development should incorporate participation, self-reliance and local knowledge with an ultimate objective of attaining human basic needs in harmony with the environment (Pieterse 2001). It is seen as a people-centred development process where people's local knowledges are emphasised rather than focusing too much on abstract 'expert' knowledge (Pieterse 2001).

The localised approach seems to be opposite to the traditional notion of development as a process of embracing new ways of thinking, which requires abandoning previous ways of

doing things that are considered obsolete (Neumann 2009; 2005) that will lead to improvement in living conditions. Within the localised approach, development does necessarily involve abandoning local strategies/knowledges or is the process linear. Just like any change process in human endeavours, the development process is not universal, it has localised differentiation. Thus, development needs to be contextualized to fit the locality and specific social needs.

Currently, the most comprehensive means of measuring development is the UN's Human Development Index (HDI) (Sheppard et al. 2009). According to the UNDP's HDI, a composite index, human development should be measured in terms access to quality healthcare, education (knowledge) and standard of living (Human Development Report [HDR] 2012; 2013; 2014). The index computes the various indicators of improvement in human welfare to give estimates on how humans are faring in specific places and times. The challenge with the HDI is, it seems to have failed to account for the peculiarity in human welfare since it focuses on averages. Besides, certain activities cannot be efficiently quantified, hence excluded. Thus, what to include or exclude are subjective decisions that do not necessarily reflect all human needs. But so far, the HDI appears to be the most appropriate method for analysing human wellbeing – economic, social and political dimensions of development.

The development process and its impact has been uneven, with some regions developing faster than others partly due to unequal exchange (Christophers 2009), strategic policies that have favoured certain regions (Hudson 2009) and governance practices, producing spatial inequalities among places. The spatial inequalities or uneven development is seen as both a geographical outcome and a process of capitalism (Christophers 2009) where some regions are conditioned as exporters of raw materials and importers of manufactured goods. Christophers (2009) argues that it is an outcome because of the unequal exchange where regions that have the capital use their comparative advantage to exploit less developed regions. Uneven development is a process since capitalism has contradictory geographical tendencies towards 'differentiation' and 'equalization' (Christophers 2009). Exploitation of natural resources is a key facilitator of capitalism since it provides spaces for accumulation, competition and profits.

In geography, the debate on development seem to have focused on issues of spatialities and scale, with particular attention being paid to flows of ideas, capital and people and exercise of power at various scales (Willis and Kumar 2009, p. 11). While discussions vis-à-vis development appears to have focused on developing countries, in practice, it transcends

boundaries and societies, since be it in the developed or developing world, people will require some improvements in their existing situations (Elliott 2009), and societal needs also change. Improvement includes financial, societal and political advancement, and specific intentional intervention that seeks to facilitate 'progress' in aspects of human life (Willies and Kumar 2009; WCED 1987). The development process that is undertaken by different actors to achieve specific goals (Willis and Kumar 2009), of which the state, as a principal actor providing welfare and security functions in the process or an arbiter of market forces (Korf 2009). For this study, development is viewed from the UNDP's HDI lens which measures human development in terms of health, education (knowledge) and standard of living, and Seers (1969) critical issues of poverty and inequality, unemployment and how these are performed by and through heterogeneous actors (local, national, and global) and structures. Its outcome creates spatial differences. As Faik et al. (2013) noted, development can be applied to multiple levels: from national capabilities to individual wellbeing, and it is performed by diverse actors at varying scales – from the global, state and local scale and actors.

What constitute the state, its theorization and functions has been contested over the years (Pierson 2011; Jessop 2010; 2001; 1997; 1990; Sharma and Gupta 2006; Cox 2002; Dunleavy and O'Leary 1987; MacIver 1950). MacIver (1950, p. viii) suggests that the state has no finality, has no perfect form, but it is an instrument of social man. He argues that in defining the state, one must not be only concerned with the skeletons of constitutions, but also with the living facts which can only be understood in their functioning (ibid.). The Dictionary of Political Science (1964, p. 498) defines the state as the functional organisation of the body politic which has an object function of promoting the common good. But in practice, the state is not always used to promote the common good since it is sometimes used by the political elites and their elites for personal enrichment and repressing of political opponents. The essential physical attributes of the state are: people; territory; government – the agency through which the policies of the state are formulated and carried out; and sovereignty – the supreme power for both external and internal authority, including legal decisions and the physical power to enforce them (ibid: 498). It can also be seen as a community, a power-system and legal construction that defined the relationship between the governor and the governed (MacIver 1950). The state is distinguished from the nation which is often defined as a human community based on blood relations, lineages, historical traditions and culture (Dictionary of Political Science 1964).

From a Marxist perspective, the state is seen as a class-structure, an organisation in which one class dominates other classes or regions dominating other regions (MacIver 1950). The relationship between the classes should not however been always seen as antagonistic where the dominant class control minority groups but a situation where their actions are influenced by the minority needs. Responding to the needs of the minority groups or regions is important to maintain social order. Harvey (2005) noted that capitalist development is a territorializing process that requires spatio-temporal fixes. Cox (2002, p. 244) suggests the modern state emerged from capitalist development since the state is an essential part of the social division of labour to ensure the system's reproduction and development. The conceptualisation of the state separates government from the society, where the state subjects the citizens to itself through laws which often displace customs. The government is supposed to govern on behalf of the people and the state oversees that this happens. In the capitalist state, the branches of the state are mobilised – central, local and subnational by place – dependent interests to ensure the flow of value (Cox 2002). Money has to be invested in fixed facilities, building up supporting physical and social infrastructure if value is to be reproduced and people and firms require interests to ensure continued viability (ibid.). For the hydrocarbon assemblage to be continuously viable, it creates economic enclaves (Cox 2002, p. 365).

Dunleavy and O'Leary (1987) theorize the modern liberal democratic state from two perspectives: organisational and functional. As an organisation, the state can be defined as a set of governmental institutions for making rules, controlling and regulating. The functional dimension of the state focuses on its ability to exercise its sovereign power, control its citizens and collect taxes for national development. Pierson (2011) identifies some characteristics that the modern state poses or manifests. The state should have territory that it occupies and controls; sovereignty; authority and legitimacy; citizenship; public bureaucracy and ability to collect its taxes (Pierson 2011). Dunleavy and O'Leary (1987) also noted that the modern state has basic characteristics: set of separate institutions that govern the public and private spheres; sovereign power over its territory with regards to law enforcement and coercive power; its sovereignty extends to all individuals within its territory equally; personnel are mostly recruited and trained for management in a democratic manner; and should have the power to tax its citizens for its development. The state should be able to bring persons within its territory under its control, a sovereignty that is exercised by political power and laws that govern behaviours (MacIver 1950). These characteristics fit the ideal liberal democratic state since not all states

manifest them. Within the liberal democratic state, citizens are supposed to be at the centre of decision making, with distinction between state and CSOs, though they interact.

Sharma and Gupta (2006) also argue that the state needs to be conceptualised by its formal institutions, cultural processes and social relations, and its transnational relations. The state is not a preconditioned institution that performs functions as assigned to it, but instead, it is produced through everyday practices and performances. The state in this sense can be seen as a multi-layered, contradictory, translocal ensemble of institutions, practices and people in a globalised context (Sharma and Gupta 2006). Within this multi-layered, globalised institutions, people and practices, the state as noted earlier can partly be conceptualised as a system of political domination with specific effects in the class struggle to secure a balance of class forces that is favourable to the long term interests of specific groups (Hirsch and Kannankulam 2010). Within such a frame, the state is assigned a cohesion function in society that enables it to regulate the economic struggle between antagonistic classes through repression and concession. Jessop (1990) however, argues that Marxist conceptualisations of the state as property relations, underpinned by mainly economic class struggle is problematic as it seems to ignore the juridical, political and social interactions.

Jessop (1990) conceptualizes the state at three levels: the state as a form of institutional separations from the rest of society; part of an internal representation, political calculation and operating procedure; and finally political practices and discourses in and through which common interests are activated and promoted. He emphasises how the state should be analysed as an intersection between politics/social processes and economic development since these processes appear to reinforce each other. Similar to Jessop (1990), Glassman and Samatar (1997) identified three forms of the state; liberal-pluralist, Neo-Weberian, and Marxist (political economy). Liberal-pluralist conception views the state as a neutral intermediary of social processes, which stands beyond conflicts over issues such as production and distribution of goods and social services. Within such a framework, its autonomous status enables it to make regulations, resolve conflicts and to guide the development of the state machinery for the social good. The Neo-Weberian perspective of state power (Mann 1988) emphasises the bureaucratic institutions instead of the economic factors. The bureaucratic rationale of state institutions and organizational structures are seen as affecting social outcomes in ways that go beyond what can be predicted based on capital accumulation process (Glassman and Samatar 1997, p 167). The Marxist (or political economy) perspective view the state not as a neutral

mediator of social conflict, instead as an expression of wider patterns of domination and exploitation in the society (Glassman and Samatar 1997, p. 167).

Hirsch and Kannankulam (2010, p. 14) meanwhile conceptualise the state as operating in heterogeneous spaces which overlap and intersect, but in part in a hierarchical relationship to each other. The state form and function extend beyond the internal institutional and social relations to its global connections to other states and transnational actors. Viewing the state as extending beyond its political borders is seen within the framework of an internationalization of the state and its apparatuses, and this manifests in political and economic interdependence between the individual states in the global economy (Hirsch and Kannankulam 2010, p. 26). The internationalisation and neoliberal restructuring of the state which started in the 1990s re-ignited debates about the seeming decline of its powers. These processes were characterised by promotion of deregulation of capital, finance and commodity markets and privatization (Hirsch and Kannankulam 2010, p. 25; Harvey 2005). Jessop (2010) argues that three trends have dominated the status of the state with regards to globalisation and market integration debate. First, powers that hitherto appear to be located at the national scale seem to have shifted upwards to supra-regional or international bodies, downwards to regional or local states, or outwards to cross-national unions among regional states, in tandem with allocation of new state powers to scales besides the national (ibid. 40). Second, there has been partial weakening of territorial power relative to non-territorial forms of political power that evade states through new forms of international regime and extra-territorial networks (Jessop 2010). Finally, there is a seeming temporal loss of sovereignty of the state due to an increased speed and spread of world market integration which reduces the time available for determining and coordinating political responses to economic events (Jessop 2010, p. 40 – 1). Despite these seeming changes in the power of the state due to globalisation and its integration into the global economy, it still exercises ample power over resources that are located in its spaces.

Additionally, Jessop (1997, p. 573) conceptualised the state by noting three trends that underpins the relations between economic and political processes and capitalist development. First, movement towards a partial ‘denationalization’ of the state where the state is analysed in relation to other social actors within the state and external actors. Second, a ‘destatization’ of the political system where across territorial scales and functions, there seems to be a shift from government to governance. Thus, the focus of the state shifts from securing political hegemony as the main initiator of economic and social projects towards an emphasis on collaboration with governmental, para-governmental organizations and NGOs (Jessop 1997, p. 574 – 5). And

thirdly, policy regimes of the state become gradually internationalised, where state activities are extended to comprise transnational factors and processes (Jessop 1997, p. 575). In this framework, while the state continues to play vital economic and political functions, these roles are often redefined and reshaped by local, regional, national and transnational levels political and economic organizations (Jessop 2010; 1997). For instance, whereas ensuring friendly micro-social conditions for capital accumulation may be handled at other scales beyond the national, social cohesion and exclusion can still remain a national issues (Jessop 2010, p. 43).

Jessop (2001, p. 156) criticises state theories that are too much focused on the forms of sovereign political and legal power at the summits of the state apparatus, and the discourses which legitimated power at the centre and the extent of its reach into society. He argues that theorisation of the state should focus on Foucauldian bottom-up approach which emphasises how power relations diffuse in the many and varied local and regional sites where the identity and conduct of social agents are determined. From this perspective, the state exists in social norms and institutions and distinctive forms of knowledge rather than in sovereign authority (Jessop 2006, p. 5). Analysis of power needs to start from below, in the heterogeneous and dispersed microphysics, exploring specific forms of its exercise in diverse institutional sites, and how these are linked to produce broader and more persistent societal configurations (Jessop 2006, p. 5). Power should be seen as existing in its exercise, it cannot be hold or possessed, and being aware that power circulates through networks (Jessop 2006; Foucault 1979, p. 92).

In Africa, the state can be examined within a political economy perspective which focuses on the complex relationships between political, social and economic decision making processes and how this relates to law, governance, and production. It seems patronage networks that underpin some of the state in Africa seem to undermine the efficiency of the state. Resources are sometimes (some exceptions are Botswana and Mauritius) channel to strengthen patronage structures to the detriment of national development. This has made some of the states in Africa the most demonized institutions for their weaknesses, intervention in the market (though some intervention in the market can be useful), their exploitive character, and their continuous dependence outside power/forces. To some, most of the states in Africa are underdeveloped and have turned into a ‘lame Leviathan’ (Callaghy 1987), ‘suspended above society’ (Hyden 1980), a creature that looks as ‘omnipresent’ (Chazan 1988) but hardly ‘omnipotent’ (Mamdani 1996, p. 11). Some of the states in Africa which at independence were the foundation of national cohesion and development, have seemingly turn into parasitical, predatory, patrimonial, crony and kleptocratic (Bayart et al. 1999; Chabal and Daloz 1999;

Bayart 1993). Most of the current states in Africa have been politicized to the extent that the elites devote much of their energy to seeking of wealth through political power. It is suggested that even in some cases, people who acquire their wealthy independently of state patronage are sometimes viewed as a threat to the ruling elite and they are prosecuted, while the ruling elites often attempt to secure themselves against competition (Rowley 2000, p. 140). This can encourage patronage and corruption as the business elites are sometimes 'forced' to align with the political elites to avoid prosecution. It can also undermine proper functioning of institutions as social or informal relations influence state institutions instead of based their actions on merit.

Even within the democratic polities on the continent, the political elites still depend on patron-client or ethnic relations to gain wealth, win and consolidate political power. Ethnicity can sometimes be important in who wins political power in the countries in Africa. Berman (1998) argues that ethnicity can be seen as a product of continuous historical processes, always concurrently old and new, grounded in the past and perpetually in creation. Thus, ethnicity is encountered as a duality, 'as a cultural identity and consciousness laden with possibilities for political mobilization and as a discourse which arranges collective memory as a basis for political action' (Jewsiewicki 1989, p. 325) and economic action. Most of the countries in Africa are informalized (Olukoshi 2001), making it difficult for government to regulate and taxes goods and services. The states or the political elites are be able to develop their networks and consolidate them based on the 'reciprocal assimilation of the elites on a more common incorporation of subordinate social groups and the mesh of networks' (Bayart 1993, p. 218). These networks and multiplicity of power relations developed by the political and business elites have been the basis of distributions of the wealth that are generated as a result of the capture of state by the elites to their cronies so as to consolidate their power.

In order to understand the political economy of the states in Africa, the global economy, how natural resources are exploited and appropriated, and how capitalism operates and shapes development, world system theory relies on historical analysis to explain and analyse the relations between nation states and industrial development (Wallerstein 1989; 1979; 1974). Within the world system theory, the global economy is divided into three zones: core, semi-periphery and periphery (Wallerstein 1989). Each nation's position within the zones determines its abilities to extract resources from the world system. The periphery states are however sometimes disadvantaged in benefiting from resources in the global economy because of their weaknesses with regards to power, capital and technology. Activities in the core economies include high-tech manufacturing, business and consumer services, and some of the biggest

industries. The core states are mostly located in America and Europe. Core states are strong and industrialised to produce the goods and services for internal use and export to the periphery states (Benton 1996). Also, capital accumulation is promoted in the core states internally through tax, government purchasing power, promotion of research and development and minimising class struggle through keeping social order (Benton 1996; Wallerstein 1979; 1974). Besides promoting accumulation internally, the core states promote accumulation in the global economy through the use of political, economy and military power which seems to aid in enforcing unequal exchange between core-periphery states. Semi-peripheral are intermediary states, take some part in the exploitation of the periphery but they are themselves also exploited by the core (Wallerstein 1979; 1974). The semi-periphery states are involved in assembling, intermediate products and some agriculture production. In some cases, the semi-periphery states develop their manufacturing based, especially in goods and services that are less produced in the core. Periphery states on the other hand are engaged in primary commodity production such as cotton, tea, coffee, cocoa, and minerals such as gold, diamonds and tin for export to the advanced economies. Because the peripheral economies are based on raw materials and agricultural product export, they are often exploited by the core regions for cheap natural resources (Chirot and Hall 1982; Benton 1996). Periphery nations can become dependent on the core and semi-periphery for industrial goods and services (Benton 1996). The core and the semi-periphery does not operate on their own but in alliance with some of the political and business elites in the periphery who serve as gate keepers to the natural resources in their countries. Thus, it is network of beneficiaries (core regions and elites in the periphery) that share the value generated from the world-economy. For Wallerstein, the world-system comprises 'core' and 'periphery' zones that exist in a state of tension and unequal economic relations (Clayton 1998, p. 480). It is this unequal power relation among the states or zones in terms with access and control of the natural resources that determine the differentiated impacts resources on development.

There has been modification of the world system theory over the years based on certain shortcomings identified in the initial concept developed by Wallerstein (Benton 1996; Snyder and Kick 1979). This is associated with the realisation that the global economy and the state are complex systems that are mediated by local, national and international forces. Fundamental to this approach is that although Wallerstein's approach has inaccurately categorized or oversimplified the patterns of association among regions, state power, labour extraction and placement in the world economy, these interactions are vital and provide a basis of analysis of

the global world (Benton 1996, p. 277). It has also been recognized that transnational phenomena or processes are knotted, embedded and intertwined with local and national practices and global structures. Snyder and Kick (1979) use a multiple-network approach to address the deficit in world-system/dependency theories in analysing the differential economic growth among nations. They argue that although world-system as developed by Wallerstein has considerable analytic potential, they have reservations in relation to its empirical status. There are challenges on the absence of evidence on the theoretically specified structural positions of the specific zones (core, semi-periphery, and periphery) and the dynamic relations among them in the world system. Snyder and Kick (1979) present a multiple-network approach that focuses on transnational flows and structural positions of states in world political economy.

2.10 **Conclusion: the curse as produced and conditioned by globalised actors**

The curse illustrates the tendency of a negative relationship between natural resource endowment and poor economic growth and other development indicators. It illustrates how natural resources windfalls shape and are implicated in conflict, environment challenges, poor governance, weak institutions, poverty, corruption, excessive borrowing and debt, neglect and/or decline of manufacturing and agricultural sectors. Given how the curse can manifest differently, it can be seen as multi-dimensional phenomenon that goes beyond its initial econometric connotation that focused on the negative inverse relationship between natural resource endowment and economic growth (Rosser 2006; Auty 2001).

The curse should be seen a complex phenomenon that is a product and function of the global economy, and it has geographical and class dimensions that manifest unevenly. This partly because the hydrocarbon industry that produces the resource curse is an assemblage, whose governance transcends that state to transnational actors and local politics. As Carmody (2009, p. 354) noted, the global economy operates with matrix governance where established and coordinated networks of actors help to regularize a chaotic flows and relations of globalization and a mode of regulation for the neoliberal regime of accumulation in the developing world to ensure access to natural resources. This results in uneven development that can be associated with poverty, resource competition and conflict [resource curse] (ibid.). Yet, most analysis of the curse has focused on the state and it has not adequately accounted for external political and economic environments or external social forces that mediate development outcomes in the resource rich economies (Carmody 2009; Rosser 2006).

Whereas the natural resource rich economies have control over resources located within their territory and state politics influences their impacts on development, because the hydrocarbon industry is capital and technologically intensive, the TOCs partly control how these resources are exploited and appropriated. Most of the natural resource rich economies in the developing world also export their products to external markets and they do not determine the prices of these products. The economies of the resource endowed economies are subjected to external prices volatilities and conditions which impact their development. Barma et al. (2012, p. 14) noted that there are distinctive features of the natural resource industry that tends to shape political economy and condition the development process in specific countries. They argue that the hydrocarbons and minerals are finite; they have volatile prices, associated with super-normal profits and the state's sovereign gives it the right to a portion of the rents; and a long timeframe for extraction or production and ownership structures. Ownership in the sector can be highly concentrated and revenue streams from the industry is affected by price volatility and uncertainty and changes in production (Barma et al. 2012, p. 14). The extractive industry, including oil requires huge capital, technological investments and economic and geological risks for investors which are irreversible, and these factors shape and condition how windfalls from the sector are appropriated among the various actors in the sector and its impact. This chapter argues that whereas the literature on the curse has provided substantial evidence of an inverse relationship between natural resource abundance and poor economic growth and other development outcomes, the explanation of and how the resource curse manifests seem to be inconclusive. Through the use of ANT perspective, this study on Ghana's experience with oil exploitation can help to explain how even though the country is not experiencing a full scale curse, the challenges that oil poses to development can be seen as a complex phenomenon that transcends national boundaries, mediated by negative impacts of the natural resources themselves, global, national and local politics, and it has geographical and class dimensions that manifest unevenly.

3 Chapter 3: ANT and Transnational Hydrocarbon Assemblages

3.1 Introduction

The analysis of the resource curse over the years seems to have focused on the national scale where the nature of the national political economy is assumed to be the most crucial factor that mediates the opportunities or limits for using natural resources for development. Based on such logic, countries with strong institutions that ensure accountability and eschew corruption in the use of natural resource windfalls are more likely to avoid the resource curse, while national economies characterised by weak institutions and patronage relations will probably manifest its dimensions (Alexeev and Conrad 2009; Brunnschweiler and Bulte 2008; Heum 2008). It is therefore, argued that for natural resource rich countries to derive maximum benefits from their resources, the governments have to adopt policies that ensure transparency and accountability as in the case of other natural resource rich countries such as Norway, Botswana and Australia (Torvik 2009). However, such stagist and teleological approach to development where countries are supposed to imitate the 'best practices' such as institutional practices of other countries (Stiglitz 2006; Diamond 2005; Sachs 2005; Stiglitz and Charlton 2005) have been criticised by Sheppard (2011) since national political economies differ. Sheppard (2011, p. 46, 66) argues that although such approaches to analysing development are useful, a 'relational or dialectical conception of the relationship between the economy, space/time and socionature, within a broadly political economic conception of societal change, that creates space for conceptualising development as an assemblage of possibilities, that are struggled over by differently situated and located actors in shifting alliances and rivalries', is more suitable. A relational perspective will better help in understanding the complexities of development over time and space since social conditions in places also vary. Basing on the relational perspective, it appears most previous national scale analysis of the curse have 'over-territorialized' the challenges of resource-based development to national governments. Meanwhile, scrutiny of the hydrocarbon industry which produces the resource curse reveals complex 'globalised' assemblage comprising states (oil importing and exporting ones), transnational companies, civil society organizations, and global energy security and climate change discourses and local conditions that interact in constructing and impacting the manifestation of the curse.

This theoretical chapter critically explores networks, associations and relational ideas that help in explaining and understanding the curse beyond the national scale and how its manifestation is differentiated across space and time. In addition to this introduction, the chapter is organised into four (4) sections. Section two (2) explores the concept of networks

and associations as used in Actor Network Theory (ANT) and how these can help in 'deterritorializing' the resource curse since the actors and factors that shape and mediate how natural resources are extracted and utilized in specific countries go beyond the nation state. The section examines some of the key ideas such as relational assemblages, general symmetry, translations and relational networks that underpin the ANT and how they help to explain the curse as a relational and differentiated phenomenon. Section three (3) examines the concept of 'flows' and how it enables us to explain the movement of resources and ideas beyond embedded spaces (Castells 1996; 2000). Section four (4) analyses the transnational hydrocarbon assemblage; comprising of oil exporting and importing states, firms, CSOs and climate change and energy security discourses and how interactions among this transnational or 'globalised' assemblage lead to the spatial manifestation of the curse. It explores global production networks (GPN) which enables us to understand how production and flow of resource go beyond the national economy since the global economy consists of tangled webs of production circuits that cut across geographical and political boundaries (Dicken 2011; Bridge 2008). It examines how relational associations and networks perspectives provide a lens to analyse the differentiated manifestation of the curse across spaces or the development challenges that oil rich economies in the developing world are confronted with.

3.2 **ANT: networks, associations and assemblages**

ANT is not easily defined since it is not a fixed theoretical perspective, but comprises of heterogonous perspectives put together to understand and explain the complexities of the world (Law 1999; 1986; Latour 1988; Callon 1986). As a theoretical perspective, its origin can be traced to science and technology studies (STS) and sociology of scientific knowledge (SSK) in the 1980s in the works of Latour (1988) on Pasteur, Callon's (1986) sociological analysis of technology and Law's (1986) studies on social engineering. ANT has since been adopted and applied to other aspects of the social science such as organization and management studies (Alcadipani and Hassard 2010), natural resource governance (Bodin and Crona 2009) and environmental justice (Holifield 2009). Because of a recognition that nonhuman actors play critical roles in shaping the world, and as a critique of humanistic geographies that seem to place more emphasis on human creativity and consciousness in understanding the world, ANT is important in explaining socio-economic and political phenomena (Lorimer 2009). As a post-humanist perspective, ANT can be used to highlight the importance of 'non-human actors' in explaining phenomena in geography, although the idea of ascribing agency to non-humans is

contested in the social sciences, including geography (Lorimer 2009). One of the main tenants of ANT is recognition that a phenomenon needs to be examined in their networks, relations, associations and assemblage. Doolin and Lowe (2002, p. 72) argued that within an ANT framework, societies are explained 'as constituted by heterogeneous collectivities of people … together with technology, machines and objects'. It is the complex inter-relations among the heterogeneous human and non-human actors that make up society. Connectivity becomes one of the basic things that defines social phenomenon. Phenomenon such as development needs to be understood as performed and shaped by an assemblage of actors, agency and structures.

According to Law (1999, p. 3), viewing phenomenon [reality] through ANT's network lens means social divisions such as 'truth and falsehood; large and small; agency and structure; nature and society; human and non-human; before and after; knowledge and power; context and content; materiality and sociality; activity and passivity' is problematic since they are interwoven. These things intrinsically linked and there is no need to treat them separately. Social phenomena and realities should be seen as fluid, multi-layered and multifaceted. From an ANT standpoint, reality is not out there to be discovered by either social actors or natural laws. It is performative and multiple (Mol 1999) and enacted through diversity of practices and connectivities. Latour (1999) advocated for a 'realistic realism' which discounts the realist's and relativist's argument of an ontological gap that separates language from the world. In practice, there appears to be no such gap between natural and social, since for example, the activities of the natural scientists are influenced by the social settings in which they work.

ANT partly aims to abandon or reduce binaries between purified categories such as 'local' and 'global' (Johannesson and Bærenholdt 2009). A priori categories and dichotomies such as local and global phenomenon limit one's understanding of the world, hence that need to focus on networks, associations and relations since an event in one place can trigger other events beyond its borders. Global cannot be separated from the local since they are mutually constitutive and local events have global effects and vice versa. For instance, the 2010 'Arab Spring' started in Tunisia as local event but spread to other countries such as Libya and Egypt. The same Arab Spring triggered other events such as global oil price hikes since the conflict that characterised it affected supply of oil to the global market. Events like this helps to question 'the modernistic worldview and underline how the making of society demands association of diverse elements that never exist as pure categories cut off from wider fabric of relations' (Johannesson and Bærenholdt 2009, p. 14). Phenomena are often caught up in web, and their interactions within and without the network shape their nature (Law 2009).

Theorists that ascribe to ANT reject the idea of a priori categories since they believe in practice-based perspective and rely on the principle of 'general symmetry' which suggests that because of the instability and complexity phenomena, entities need explanation (Johannesson and Bærenholdt 2009; Latour 1988). It is anti-essentialist perspective (Crawford 2005) which does not subscribe to binaries of nature-society; agency-structure; or knowledge-power (Johannesson and Bærenholdt 2009; Cressman 2009; Latour 2005; 1999; Law 1999) since such categories are entwined. ANT views and explains the world or social phenomenon as made up of heterogeneous relations and practices (Johannesson and Bærenholdt 2009). The concept of generalized symmetry also refutes pre-given categories such economic/cultural, natural/social and global/local since such phenomena in practice are interconnected and constitutive. To comprehend the complexities in the world, ANT strives to place less emphasis on dividing societal/technical and human/non-human elements (Alcadipani and Hassard 2010). Separating phenomena into societal and technical seems to reduce their complexities as this turns to ignore how such phenomena meshed into each and interact with others actors, spaces and structures. It is human and non-human interaction that shape the world or social phenomenon. Action and agency can therefore, be distributed across human and non-human entities as well (Latour 1999). But it should be noted that 'by themselves, things don't act' (Law 1994, p. 485), but the 'agency is a property that emerges through interactions of people and objects and through relational networks' (Stein 2001, p. 19).

ANT also questions how order is accomplished and made stable over time and space by examining the actors and how they are connected in the world. According Johannesson and Bærenholdt (2009, p. 14), ANT should be seen as a methodological device that traces the practices through which society or social phenomena are assembled. In order to understand the phenomena that constitute the world requires an identification of the agents and relations that made up such an assemblage (Latour 2005). In analysing the assemblage, emphasis should not only be placed on ideas and discourses, there is a need examine the material objects in the assemblage since these material things also help in understanding society. And as Latour (2005, p. 12) argues, this requires following the actors themselves and learning from them what constitutes their collective existence. By following the actors in their heterogeneous existence, assemblage and interconnectedness, researchers and policy makers can recapture the sense of the social as an unstable assembly of associations persistently in need of re-examination and reconstitution (Latour 2005; 1988).

Networks are made up of heterogeneous elements. Within ANT, network refers to the sum of the various actors and their relationships (Johannesson and Bærenholdt 2009). In effect,

the social and natural world needs to be seen as heterogeneous networks. The relative heterogeneity of the networked actors ensures their durability (Doolin and Lowe 2002; Latour 1988) because the actor–networks is intimately bound up with the material and the technical (Doolin and Lowe 2002, p. 72; Latour 1991). ANT examines the heterogeneous actors in their association since it is through such analysis that one can understand the function of each actor in the network (Cressman 2009). The actors are also analyzed in their associations. As Cressman (2009, p. 4) argued, associations illustrate 'how networks come to be larger and more influential than others, how they come to be more durable through enrolling both social and material actors, and where power comes from and how it is exerted'. Because of ANT emphasis on network, it is also referred to as the enrolment theory (Crawford 2005). Enrolment involves the process through heterogeneous actors are recruited to form a network. The enrolment is based on interest of the actors or around a problem.

Translation is the process through which an actor recruits other actors into their network so that whatever the recruited actors do will help to strengthen and further the interest of the actor that recruits them. The translation process 'involves creating convergences and homologies by relating things that were previously different' (Callon 1981, p. 211). Whereas enrolment involves recruit of heterogeneous actors into a network, translation is the process through the recruited actors are used to strengthen the recruiter's position or views or ideas. Translation is used to reinforce how social phenomena can be explained through associations and networked. According to Brown (2002), translation can be seen as the process of making connections, alliances and establishing communication among varied actors (human and non-human). ANT theorists use translation to describe the stronghold position that enables an actor to control and utilise others actors activities to further his or her interest (Latour 1988). Through the translation processes, elements or actors that are related in a socio-technical network interact, leading to the negotiation and delimitation of margins of manoeuvre (Callon 1986, p. 203). Translation involves the movement of technological development over time, which involves how ideas and plans are turned into action, how people and institutions are shaped to believe the same thing, and how users are able to transform the technology to better meet their goals (Cressman 2009, p. 9). In the case of the hydrocarbon industry, the oil companies are able to shape and control production in developing countries because they control the technology and capital. Within the ANT perspective, translation can be seen as 'belonging by assemblages' (Lee and Stenner 1999) by diverse actors where phenomena come together or assemble, yield a new entity and become stronger or more impactful than the individual actors.

The strength of actors seems to exist in their ability to form networks through association and connections (Johannesson and Bærenholdt 2009).

In geography, ANT as a theoretical perspective gained ground in the 1990s and has since be used to analyse global city networks (Smith 2003), urban assemblages (Prytherch 2011) and networks and social relations in economic geography (Johannesson and Bærenholdt 2009; Jones 2008). Sheppard (2011) recently contends that there is the need to understand development from the relational perspective where economic conditions needs to be explained by place based attributes as much as their connectivity to other places. Based on the arguments of Sheppard (2011), Latour (2005) and others, it seems although ANT ideas can be vital in others aspects of geography such as challenging nature-society and human-nonhumans dualism, for the purpose of the analysis of the resource curse, its perspectives on networks, associations and assemblages are critical. Such network views enable us to understand how states, transnational corporations, global energy security and climate discourse form a globalised assemblage and interact to shape the impact of natural resource exploitation.

ANT has been influential in how to bypass dualism and the role of networks in the analysis of economic geography. With regards to bypassing dualism, ANT's concept of general symmetry as noted above enjoins us to attach importance on all actors (human and non-humans) since it is the interactions among the diverse actors that produce a particular phenomenon. It also questions the notion that almost everything is either socially constructed or determined by natural or technological explanation. The realist-constructivist divide seems to be limiting explanation in geography since social constructivism seems to the flip side of realism since whereas realists argue that everything is determined by natural or technical laws, social constructivists suggest everything is socially constructed (Johannesson and Bærenholdt 2009; Sayer 2000). Such perspectives appear to ignore how the social and natural are mutually constitutive. The world is complex and dualism limits our understanding of the heterogeneous interactions that often take place in it. ANT however, follow and trace how power relations are produced and stabilized in society. Thus, while ANT argues that reality is constructed, it acknowledges the heterogeneous actor networks that constitute and shape society, thereby shifting the focus away from the wholly social to the practices that enable us to analyse the world within a network of actors. Network and economic geography enable us to appreciate how the economy is constituted, mediated and acted upon by a network of cultural institutions and social relations. It relates to how the spatial organisation of the capitalist market economy is shaped and constituted by socioeconomic linkages (Johannesson and Bærenholdt 2009).

Network perspectives have been influential in urban and economic geographies, especially in production and distribution linkages among regions. This is important in analysing socio-economic phenomena since as Law (1999) and Mol (1999) argue, regions are constituted by networks. For example, Law (1999) argues that states are constituted of telephones systems, paper work, natural resources and humans. The states are also linked by for instance, natural resources to other nations and transnational corporations. ANT perspective attempts to question Euclideanism, where what appears to be a topographically natural and stable world, is produced and conditioned by networks (Law 1999, p. 8). This partly highlights how networks and flows in production, trade and FDIs connect countries beyond their topographical boundaries. Networks become one of the main mechanisms through which we can understand and interpret phenomenon that occur in the world. In another words, while what happens in a particular region or a nation are important in shaping those particular places, other processes and events outside the region or nation also influence and shape them through networks. For example, corruption, one of the main dimensions of the curse, although is often attributed to the political elites diverting natural resource windfall into their personal accounts, TOCs are sometimes complicit in such acts to win lucrative oil contracts (Watts 2010; Shaxson 2008; Oliveira 2007). Shaxson's (2008; 2007) study demonstrates how oil company officials paid the school fees of family members of Equatorial Guinea's president and how Riggs Bank helped in the transfer of state funds into personal accounts of the president and his allies in the US. Tax havens in the banking system in some advanced economies such as in the Switzerland can also facilitate the transfer of natural resource windfalls through corrupt practices to personal accounts of politicians from the developing world.

The traditional macro-approach to political economy where analysis of issues is focused on the nation-state is also questioned through ANT by paying attention to networks of cultural institutions, social and transnational relations that combine to shape economic activities within countries. Such an approach helps to examine how socioeconomic linkages work to shape the spatial organization in the global capitalist economy and the interconnections between the cultural, social and the economy (Johannesson and Bærenholdt 2009). Relational concepts such as networks, flows and production chains are prominent in explaining phenomenon in geography (Rungi 2012; Ernst and Kim 2002). The prominence of ANT in geography is its ability to transcend the cultural/economic, local/global, agency/structure and to focus on the network of actors that enables us to treat categories as relational. Focusing on networks and interconnectivity for example, enables us to appreciate that events such the flaring of gas by oil companies which appears as a local phenomenon has implications for global climate change

that can result in flooding from rising sea levels. Developing alternative fuels sources such as using biofuels will have implications on local communities through 'land grabs' where locals are dispossessed of farming lands in order to produce crops for energy (Robbins 2012). The idea of connectivity enables us to move further from only issues that are embedded in a specific region or nation to how such places are linked to other places. The connectivity of places and spaces are based on flows of ideas, capital, technology, pollutants, goods and services.

3.3 **Beyond embeddedness to flows**

In order to understand how a phenomenon manifests in a place, there is need to move beyond only the activities that are embedded in that particular place to the flows connecting such places or spaces to others (see Jones 2008; Hess 2004; Castells 2000). It is necessary to recognise the relations and flows that connect social, economic and political activities in space. Recognising the conceptualisation of space as relational, Jones (2008) argues that the idea of embeddedness which seems to enshrine an inherent dualistic relation between the social and economy is problematic. Latour (1999) argues that as the social and economy are intrinsically linked, so are regions, places, nations or firms interconnected. Hess (2004) therefore questioned the concept of embeddedness which is used in spatial local and regional analysis as an 'over territorialized' concept that requires re-conceptualization. He uses ANT's 'rhizome' metaphor to highlight how spaces or phenomenon are formed and impacted by heterogeneous networks. Jones (2008) advocates for a practice-approach that will help us to uncover the associations that result in economic outcomes, instead of only focusing on already existing territories or scales such as national, regional, or local. He identifies three processes which can help in understanding the practice-based approach. These include; the spaces of interaction where there are exchanges among transnational economies; the global work which captures the sets of distant social relations that constitute the practices of 'doing' business in a complex global space economy; and the communities of practice which show that economic outcomes are the result of the practices of an assemblage of agencies. These agencies include individuals, nations and firms which interact to shape the global economic space.

There is a need to shift focus from only regional or national embeddedness to flows so as to understand the complexity of the world (Castells 2000). With such a shift, the global economy can be analysed as conditioned and constituted by flows in terms of production and consumption (Castells 2000; 1996). Globalised network interactions by business by both governments and private entities form the basis of the global economy. Within such globalised

economy, ‘productivity is generated through and competition is played out in a global network of interaction between business networks’ (Castells 2000, p. 77). Economic conditions in spaces such as a country are mediated and shaped by the place-based characteristics as well as on its shifting connectivities with other territories (Sheppard 2011). But such connectivities and flows [interactions] among places or spaces can also reinforce uneven development (Harvey 2011; 2005; Amin 1974). Production, distribution, and management of goods and services have been globalised due to flows and connectivities. This has partly been made possible through FDIs, MNCs, and formation of international production networks (Castells 2000). Although FDIs are steadily becoming diversified, with developing countries receiving some share of it, most of the flows are still concentrated in the developed economies. South-South trade have however increased in recent years partly because of increased in trade between China, Brazil, and India and African countries. FDI inflows in the natural resource sectors such as oil in Africa is one of the main mechanisms through which the continent is integrated into the global economy (UNCTAD 2013; 2012; 2011; Tsikata et al. 2010).

Castells (2000) argues that in order to understand the world as space of flows, one has to analyse and appreciate how the world and societies are increasingly being constructed through networks. The idea of flows can be related to how ANT enjoins us to analyse the network of actors to understand how the world is constituted. Examination of such ‘flows’ and ‘networks’ helps to analyse how oil exploration and production in Ghana can be interlinked with global energy security concerns and how this can affect the economic activities of fishing communities that at located near Ghana’s oil fields. The flows include capital, information technology, organisational interactions, ideas and other political and economic domains. It is suggested that ‘the space of flows is the material organization of time-sharing social practices that work through flows’ (Castells 2000, p. 442). These flows involve interactions and exchanges between physically disjointed social actors in political, economic and other spheres of society. Human society has increasing become a space of flows. Castells (1996) identified three conditions that support the new emerging space of flows. First, electronic exchanges; telecommunication computer systems and high speed transport. Second, nodes and hubs; electronic networks – decision making networks in the financial markets and high tech-manufacturing firms. And third, spatial organisation of dominant management elites exercising directional functions across spaces. ANT ideas of flows, networks, associations and enrolment help to understand how social phenomena such the hydrocarbon industry is formed and maintained through connections and interactions among heterogeneous actors.

3.4 **Globalised production networks and hydrocarbon assemblages**

The framing and analysis of the implication of natural resources in development or the manifestation of the curse has been state-centred since both those who argue that resource windfalls can promote economic growth or otherwise seem to focus much of their analysis on the national scale (Bridge 2008; Swyngedouw 2007; Gunton 2003). Issues concerning state institutions (weak or strong), level of accountability and transparency and patronage networks have been identified as some of the factors that mediate and condition the use of natural resources and their impact in a country (Torres et al. 2013; Rosser 2006; Bulte et al. 2005; Wright and Czelusta 2004). While one cannot underestimate the importance of the national political economy in shaping how natural resources shape development, focusing solely on the nation state is problematic. ANT requires that we examine the interactions among the heterogeneous actors in the political economy. However, the globalised assemblage as used in this research suggests that, as one examines the interactions among the heterogeneous actors, there is the also the need to consider the structures that condition how actors act. The impact of natural resources is conditioned and shaped by a 'globalised assemblage' that is formed as a result of interactions among and within national economies, TOCs, capital, technologies, ideas, energy and climate change discourses, CSOs, global initiatives such as Publish What You Pay (PWYP), Extractive Industry Transparency Initiatives (EITI), and local politics.

Bridge (2008, p. 393) argues that most analysis and explanation of the role of natural resources in development, especially the curse, characterised by a national-scale analysis that pushes questions of the role of transnational organization of production and its impact on development into the background is problematic. Gunton (2003) for instance argues that the challenges with resource-based development are poor government management such as overestimating of windfalls which leads to excessive spending. Similarly, Swyngedouw (2007) highlights questions of state efficiency and competency, but places less emphasis on the divergences of interests of transnational corporations, global energy security concerns, CSOs and individuals that influence the structure of production and distribution of the resource network, and how this shapes and conditions national or regional development. Such seemingly sole national scale analyses which appears to attribute success or failure to managing resource windfalls to the benefit of the general population to the internal weaknesses of the state does not convey the whole picture. Even in countries, where on the national scale windfalls are well-managed, and contribute significantly to economic growth, their impacts do not necessarily trickle-down to local communities and their impact can differentiated across space.

The analysis of resource-based development and the curse, so far, suffers from methodological nationalism where national government failure or competency is assumed to determine the success or otherwise of development outcomes. Yet, the hydrocarbon industry that produces and shapes the manifestation of the curse can be seen as a global assemblage. Global assemblages, Smith (2010, p. 10) argues, indicate 'tangible configurations through which global forms of techno-science, economic rationalism and expert systems gain significance and shape'. The idea of global assemblage provides a lens through which to analyse changing forms of organization and collective existence in the face of persistent political and ethical reflection and technological change (ibid.). Analysis of the curse needs to be placed within the hydrocarbon assemblage where activities of TOCs, global energy security, state and local politics mediate national and local development. The assemblage, Bridge and Le Billion (2013) argue, comprise states (oil producing and consuming states) and transnational firms. The boundaries of the globalised assemblage or network can be extended and challenged to include human rights, climate change and other environmental issues (ibid.). Given the differential outcomes of natural resources across and within states, the importance of the national state in shaping resources outcomes cannot be discounted. Yet, a critical analysis of how natural resources are exploited and appropriated show that the national state is influenced and acted upon by external factors such as price volatility of natural resources, and local politics such as patronage networks that can compel the national elites to use windfalls for consumption instead of using it for capital investments.

Existing analysis of the resource curse also failed to account for geography, thus how the curse manifests impact the local and national differently. Although national scale analysis of the curse is extensive (Auty 2001; Gelb 1988; Ross 2012), local analysis seems limited (Obi and Rustad 2011; Watts 2009; 2004). The Niger Delta in Nigeria has been the focus of research due to the violence and pollution that characterised oil production in the area (Obi and Rustad 2011; Watts 2010). Obi and Rustad (2011) argue that the relationship between violence and oil in the Niger Delta can be analysed from two perspectives; the idea that there is a direct linkage between oil endowment and conflict; and from a more nuanced perspective that examines the complexities of factors that condition and produce violence in resource rich regions. A nuanced analysis focuses on how oil fuels corruption among ruling elites, how TOCs and the 'petro elites' in Africa are complicit in marginalisation of local communities, and how greed and a feeling of marginalisation among local communities result in dysfunctional states, political instability and insecurity (Obi and Rustad 2011; Watts 2010; Shaxson 2008; Ghazvinian 2007).

The oil-related violence in the Niger Delta is mediated and conditioned by several factors; state weakness, personal enrichment and greed, marginalization and inequalities. Ukiwo (2011) contends that the violence associated with oil production in the Niger Delta is as a result of concurrent competing construction of oil as a local community and national resource. The construction of oil as a national resource by national politicians with the help of MNCs seems to have led to alienation or dispossession of local communities of a resource that they believe belongs to them by virtue of its location on their lands (Obi and Rustad 2011). Violence becomes a means by which some local community members try to assert their claims. Ahonsi (2011) identifies state weakness such as weak security services, institutions and corruption as the cause of the violence. Ako (2011) however argues that it is corruption and greed among the Niger Delta political elites that have fuelled the violence in the area. In order to address the violence associated with oil in the Niger Delta, Idemudia (2011) argues that MNCs can use Corporate Social Responsibility (CSR) the practice of provisions of social services like schools and health facilities to minimise the acrimonious relations between the Niger Delta residents and the TOCs. From the above, it seems that the explanation of violence that characterised that production of oil in the Niger Delta is complex. The violence that sometimes characterise the hydrocarbon industry is mediated and constituted by local level politics and conditions, weakness of national governments and the activities of TOCs. A relational perspective that analyses the hydrocarbon assemblage as a complex with competing interests can help to understand the conflict in the Niger Delta and the curse as a whole.

Coe et al. (2008) suggest that a relational way of thinking in which production is seen as organized via inter-firm networks that goes beyond state boundaries, and time-space sensitive analysis has been missing in the analysis of the extractive industry. The politics that characterizes that extractive industry, especially the hydrocarbon assemblage can be situated within a global production network. A global production network (GPN) approach to analysing extractive industry views the impact of natural resource on development (regional or national) as a 'dynamic outcome of the complex interaction between territorialized relational networks and production networks within the context of changing regional governance structures' (Coe et al. 2004, p. 469). Even where the oil industry can be viewed as an enclaved, it is impacted by global, national and local actors. Development of global production networks, facilitated by globalization makes it possible for production to take place globally (Rungi 2012). Within this network system, global production networks becomes a mechanism of knowledge transfer and building of local capabilities in the economic space (Ernst and Kim 2002). The relational perspective which informs GPN theory is based on the idea that production, distribution and

consumption of commodities, goods and services operate in a geographically differentiated macro-structured framework, occurring through a complex web of production circuits (Dicken 2011). Although the GPN theory can be seen as broad is explaining phenomenon, its concepts on network and geographies of production, distribution and consumption illustrates how exploitation, procession and consumption of natural resources such as oil leads to differentiated impacts. The term 'global' in GPN is indicative of its geographical extent and functional integration (Dicken 2011). GPN involves processes through which inputs are transformed into products, distributed and consumed. The GPN is a circuit, not a chain which is shaped by technology inputs; energy services; logistical inputs (movements); and financial systems coordination and regulation (Dicken 2011).

The production network is an arena of contested social relations involving transnational corporations, states as regulators and producers, labour, consumers and CSOs which shape the governance of resources. It involves how values or benefits from the production network are distributed across spaces (Lee et al. 2008; Lee 2000; 2006; Lee et al. 2004). In economic geography, it is often argued that there is a need to move beyond the production network to issues of value chain that examines how the windfalls of production are distributed across spaces and class (Lee et al. 2008; Lee 2006). According to Lee (2006, p. 413), economic geographies entails a struggle over produced value, consumption and exchange through social construction of material circuits of value capable of being sustained across time and space. Production is performed and practised through tension between material necessities of societal reproduction, variability of economic practice, social relations, regulation and conceptions of value (Lee 2006, p. 413). Economic geographies are subject to politically reflexive modes of evaluation and regulation of value (Lee 2006). Value is formed and circulated through the construction of circuits and networks across space (Lee 2006; 2002; Hudson 2005). Lee (2006) noted that economic geographies are complex social practices.

Economic geographies are social constructs based on exchange of knowledge and possibilities for production (Lee 2000). The economy is embedded in everyday human practices (Lee et al. 2008, p. 1112). Circuits of value reach out across and through, multi-scalar spaces in which the environmental, material and social practices involved in them take place (Lee 2006). There are differences in the conceptualisation of the economy and how value is circulated. Mitchell (2002, p. 4) argues that what he calls the construction of 'the economy' – 'a self-contained, internally dynamic and statistically measurable sphere of social action, scientific analysis and political regulation'. But Lee argues that the bounded jurisdictional spaces of governance in which regulatory practices are established and implemented – by the

state system, are interrupted and shaped by changing relational geographies of flows (Lee 2006, p. 417). Thinking spatially and relationally about economic geographies enables a reconsideration of the economic as a category, but also the nature of relations between the economic, social, political, cultural and environmental (Lee 2000, p. 139; Massey 1999). Interactions between producers and consumers create economic geographies based on mutual interests and knowledge (Lee 2000). The economy is more than a discursive construct, it is a material practice too which involves recursive processes of evaluation of material and social effectivity (Lee 2000, p. 155). Based on ANT, the social and economic are mutually constitutive (Lee et al 2008, p. 1112 – 1113). This is the sense in which economies/economic geographies are practised and made in multiple, rather than in singular ways (Lee et al 2008). Economic geographies are simultaneously practised sets of social relations and material processes, and can be exploitative since they are based on production, extraction of value, exchange and circuits of consumption (Lee et al. 2004).

Based on a network and relational perspective, the hydrocarbon industry can be seen as constituted, in part, of – relational geographies of value circulation within actor networks. It is a network space of governance in which production, regulation and appropriation of value are established and implemented by global, state, and local systems. Lee (2006, p. 420) argues that once specific social relations of value start, those that are engaged in and benefiting from the system have a vested interest in extending and sustaining it. Thus to be successful, the actors must be capable of being able to sustain it over a sufficient geographical and time space to facilitate the economic rationality which enables social life to proceed and to reproduce (Lee 2006). Lee (2006, p. 420 – 420) identified circuits of economic value which involves economic activities that can be unstructured and complex, and goes beyond state governance. It involves practices by transnational and local politics and actors.

It is not only changes at national or regional governance that influence how natural resources shape development but also global governance changes. For instance, the Extractive Industry Transparency Initiative (EITI) initiatives and Publish What You Pay (PWYP) are global initiatives that try to promote accountability and transparency in the natural resource extractive sector (EITI 2013; 2011). The focus of the corruption associated with the curse has been focused on political elites of the national governments but it also involves the activities of the TOCs who are sometimes not ready to publish what they pay to the national governments that has enabled the political elites to ‘mismanage’ the windfalls (GHEITI 2013). Oil companies can be reluctant to publish what they pay to governments because of competition between firms for oil contracts, where a government threaten to cancel contracts if companies

published them. Such global initiatives are also not binding on these transnational corporations since they are voluntary and there are no global governance mechanisms to enforce them.

The governance structure of the extractive industry is important in Africa's integration into the global economy since trade in natural resources like oil, gold and diamond and imports form the backbone of the trading relations between the continent and the rest of world. But because African countries do not determine the prices and terms of trade of such resources, it seems to affect their ability to get maximum benefits from the industry. According to Dicken (2011), since the 1950s, volatile aggregate economic growth and uneven interconnectedness characterize the global economy. Notwithstanding the global interconnectedness, the nation-state still offers the political structure within which regulatory activities occurs, including situations where firms and states have to negotiate tax regimes (Coe et al. 2008). The global economy interconnectedness is conditioned by trade and FDIs flows (Dicken 2011). Due to the importance of trade and FDIs in the global economy, analysis of development issues also needs to focus on how nations are interconnected to the global economy through uneven production and consumption networks. Regions should not be analysed bounded spaces, but as interconnected with diverse socially constructed scales of activities (Dicken 2011). As Mitchell (2000, p. 392) suggests, 'thinking in terms of networks forces us to theorize socioeconomic processes as intertwined and mutually constitutive'. The embeddedness of production networks within national boundaries alone is questioned by Jones (2008) based on ANT's view which advocates for a relational and associational approach in tracing the practices and processes that produce the socioeconomic outcomes in global economic space. Such a network approach also helps to trace the processes and practices that shape the role of natural resources in development in developing countries.

Despite Dicken (2011), Jones (2008), Mitchell (2000) and others advocating for relational and network approaches to analyse social phenomena, partly to avoid a tendency of reducing the challenges associated with natural resources [the manifestation of the curse] to state level challenges. Yet, an analysis of the challenges associated with the curse will reveal that, it is intertwined and enmeshed with global energy concerns and local politics. Since hydrocarbon energy largely powers the global economy, TOCs, developed and emerging economies are often concerned with how to ensure its availability and affordability to promote growth in their national economies. Hence, one cannot limit the challenges with oil related development to the national scale alone since in spite of attempts to develop low carbon energy sources to power the global economy, oil remains the main source of global energy (see Bradshaw 2014; Smith 2010). Network and association offer a lens for analysing the scale of

interconnection and the politics involving TOCs, national governments, CSOs and global energy security in shaping the role of oil in development. TOCs are concerned with their profit, oil exporting governments are concerned with how to increase revenue from oil, while oil importing countries are more focused on the availability of cheap oil. CSOs are mostly engaged in environment, governance and economic development sectors.

The curse should be seen as a spatial manifestation of transnational hydrocarbon assemblages and how these global assemblages help constitute or interact with national and local conditions. As noted earlier, the assemblage include TOCs, NOCs, oil exporting and importing governments, CSOs and local government institutions. The relations among these actors in the hydrocarbon assemblage are characterized by collaboration and disagreement within the network. Bridge and Le Billion (2013, p. 3) argue that the 'politics of oil concerns the relationship of competition, conflict, and cooperation that define the social and geographical distribution of the various 'goods' and 'bads' that can be produced through oil'. The extractive industry reveals a network of inter-firm and firm-state relations that link nationalized oil companies, resource holding states and transnational firms in a complex lateral/horizontal relations (Bridge 2008, p. 400). Dicken (2011) captures these complex relations between states-firms and states-states as a power game where actors try to benefit from the relationship. Developed economies the like the US and the EU are competing with emerging economies such as China and India for access for oil resources to feed home industries and consumption. This competition for natural resources has been described as the 'new scramble for Africa' (Carmody 2011). Such competition shapes the hydrocarbon trade. The curse also needs to be rescaled as a spatial manifestation of competing interests and politics associated with the hydrocarbon assemblage.

Bridge and Le Billion (2013) contend that the new emerging geopolitics of oil centres on its acceptability, affordability, accessibility and availability. Acceptability is concerned with how to make oil more socially and environmentally acceptable by reducing the conflicts and environmental pollution that characterise oil production. It involves improving the safety records of oil companies, emission reduction by reducing gas flaring and to ensure transparency and accountability through following EITI guidelines. Affordability concerns making oil cheaper to the poor by reducing taxes on the oil sold to the public or through subsidies as in the case of Nigeria, improving the infrastructure in energy supply and improvement in incomes. Countries ensures accessibility through diversification of supply sources. Accessibility can be ensured through diplomacy, such as the case of China, where oil contracts are tied to loans, military force as used by the US sometimes, or the use of treaties such the EU-Russia Energy

Dialogue to ensure supply (Bridge and Le Billion 2013). In 1991 for instance, military intervention was used in Kuwait to ensure supply (the 1991 liberation of Kuwait). Ensuring peace and security in the oil producing countries or regions also can partly guarantee oil on the global market. The strategies to ensure availability and affordability of oil changes over time. The interests and actors that shape the hydrocarbon industry transcend national governments; hence the challenges that are associated with the exploitation of these natural resources cannot be limited to the national governments.

While it is good to view that hydrocarbon industry as an assemblage of competing interests, the territorial embeddedness of natural resources like oil has made it impossible to underrate the power of national government is shaping the industry (Dicken 2011). National governments of resource rich economies serve as operators in the industry through NOCs and regulators, dealing with environmental, safety, health and tax issues. Yet, because of technological and capital intensive nature of the extractive industry, governments in the developing world, especially in Africa have challenges in developing their own industry. Limited local capability in terms of capital and technology often force these countries to rely on established TOCs like ExxonMobil, Shell and external NOCs like the China National Petroleum Corporation (CNPC) in exploiting their resources. The established TOCs and external NOCs are also profit-oriented and can be able to negotiate better oil contracts with the developing countries because of their capital and technology advantage. This makes the production network of the oil industry from the exploration, development, extraction, processing, distribution and consumption into a complex web of interconnected relations which can be disadvantageous to resource rich economies in the developing world that lack their own capital and technologies. The balance of power can sometimes shift to national governments once the investment has been made into the infrastructure and the state can demand for renegotiations.

Because of how foreign economic interests sometimes shape the flow of FDIs in the natural resource and manufacturing sectors within the global economy, there is also a need to move beyond the national to see how such globalised context mediate how FDI flow in particular sectors of a country instead of others in a natural resource rich economy. Countries like China through their TNCs direct their FDIs in the natural resource sector of developing economies. This can undermine investment in industrial and agricultural sectors in oil exporting countries, potentially producing and reinforcing the Dutch Disease where industry and agricultural sectors decline. Also, where the activities of TNCs are not well regulated due

to weak institutions and local politics as in the case of the Niger Delta, their activities can have harmful effects on the environment and social lives.

The hydrocarbon assemblage has been extended to issues of human rights, social goals and environmental rights. Watts (2005; 2004) argues that the oil industry needs to develop corporate social responsibility, as well as legal and statutory programs by governments, NGOs, CSOs, and multilateral agencies to ensure that the industry complies with important human, social, political and environmental rights. The processes of oil production, distribution and consumption has contributed to the accumulation of carbon dioxide in the atmosphere which affects people's health (Bridge and Le Billion 2013). Climate change challenges associated with the hydrocarbon industry are resulting in calls by environmental NGOs for more low carbon fuels. Concerns for climate change, development and energy security has brought together a global assemblage of actors such as governments, firms, technology and CSOs to promote the development of biofuels (Smith 2010). According to Smith (2010, p. 12), 'increasing demands for secure energy provision, and a growing realization of environmental pressures, among others, have shaped an assemblage that not only drives and promote biofuels as a simple solution to multiple problems, but generates significant risk as well'. Building of networks and expanding existing ones have characterised efforts to address increasing global energy and climate challenges. This appears so because, as Latour (1988) argues, the ability of a new idea, phenomenon or scientific activity to gain prominence and acceptability is dependent on the ability of the institutions and individuals promoting it to build networks, associations and enrol more actors into their project. Ideas emerge and are strengthened through building assemblages (Latour 2005). For instance, as Smith (2010) suggests, the biofuel industry is an assemblage of interacting and interlocking complex systems, comprising of expert knowledge, technologies, political and economic actors. There are risks and responsibilities associated with interactions among various actors in the global energy and food system since some food production lands are switch to fuel production.

The world seems to face a global energy dilemma, shaped by the concerns for energy security in terms energy supply and demand, climate change and economic globalization that is characterised by an increasing uneven economic and population growth, industrialization and urbanization (Bradshaw 2014). The global energy dilemma is centred on the growing fear that the world might not be able to provide a secure, affordable, equitable and environmentally sustainable resources for the world's population. The energy security concerns however differ between places (Bradshaw 2014). It is not only industrial development in the emerging economies that is shaping the global energy use, but also increased urbanisation and transport

[car use] due to economic growth, driven by industrialization in the emerging economies. The growing needs for energy in the emerging economies is significantly shaping the global competition for energy resources since developed economies such as the US and the EU still needs huge energy resources to feed their economies. Bradshaw (2014) identified four factors that are shaping the global energy dilemma and climate policy: population growth; economic growth; energy intensity; and carbon intensity. He used an intuitive approach that interprets historical trends and future projections of energy related carbon dioxide emissions (Bradshaw 2014, p. 19; EIA 2010, p. 129). Increase in population and economic growth will likely result in increased energy use which has implications for carbon emission and climate change, states are not ready or keen on sacrificing economic growth and controlling population as strategies to mitigate climate change (ibid.). Apart from China who has a policy on population growth [this is also not tied to climate change policy], nations do not use population control as climate change policy. Most global climate policies have focused on energy intensity and carbon intensity. Energy intensity measures economic output (GDP) per energy use and carbon intensity measures the amount of carbon emitted per economic production (Bradshaw 2014). These energy security concerns are shaping the global hydrocarbon industry and the spatial manifestations of their impacts on oil producing countries. It appears the global energy security is more concerned with technological advancement to improve energy and carbon intensity, diversify the sources of hydrocarbon fuels so as to ensure availability and affordability and investments in low carbon energies. The competing interests between economic growth, global energy security and promoting sustainable development seem to shape the hydrocarbon industry and the differentiated manifestation of the curse in spaces.

3.5 **Conclusion: ANT and its application to research**

Initial application of ANT in development studies has been limited because it was seen as too abstract (Albuquerque et al. 2013; Ernstson 2013; Faik et al. 2013; Heeks 2013). Despite the usefulness of ANT in revealing the complexities that constitute the world, the perspective is criticised for its poor conceptualisation of power relations that shape human actions and functions of institutions. Emphasize on networks, flows and associations seems to have partly overlooked how some actors can be more influential in the network than others. The powerful actors can influence the outcome of an event to their advantage at the expense of other actors in the network. The apolitical and power relations criticism has been refuted by Law (1999)

who argues that anyone that is engaged with issues is involved in politics and that power flows through the various networks. Nigel Thrift (2008) later criticized ANT for its seeming equating experience of humans and agency to non-human actors neglect the quality and subjective experience of life. To Thrift (2008, p. 110), ANT appears to 'neglect specifically human capacities of expression, powers of invention, of fabulation, which cannot be simply gainsaid, in favour of a kind of flattened cohabitation of all things'. ANT is also viewed by some as descriptive without providing adequate explanation since it seems to rely on following the actors in a network to understand their relationship and actions (Cressman 2009; Thrift 2008; Crawford 2005; Latour 1999; 2005; Callon 1999). Thrift (2008) suggests that inability of ANT to provide explanations can lead to a weak understanding of events. As he argues, ANT seems 'much more able to describe steely accumulation than lightning strikes … ANT still has only an attenuated notion of the event, of the fleeting contexts and predicaments which produce potential' (Thrift 2008, p. 110 – 111). Despite the above criticisms, ANT is still very useful in development studies since it enables us to explain and understand the spatial processes and actors that influence development (Heeks 2013; Faik et al. 2013). Heeks (2013) argues that ANT should be seen as a heuristic perspective for understanding the complexities of actors and practices in the development process. It enables us to appreciate the differentiated impact of the interactions between humans and natural resources.

On the issue of power differences among actors and structures and how this shapes and conditions actions within networks, power must be analysed in its fluidity and ANT perspectives on associations and enrolment of other actors to build a stronghold position to control and utilise others actors to further one's interest offer useful insights into how to analyse the global hydrocarbon industry as an assemblage of competing actors such as nations, TOCs, CSOs, and locals. As Latour, Law and others contend, the pursuit of new knowledge or ideas in society, whether by individuals or institutions, are ultimately about the ability of the key actors to build network or chain of associations (Smith 2010; Latour 2005; 1999; Law 1999). Actors are always wrestling for vital positions within and outside the network (Smith 2010) since one's ability to control strategic positions within the complex networks gives one the ability to shape activities or ideas of others (Yearley 2005). Building alliances is essential in shaping ideas since the more actors one is able to recruit into its network, such actors are likely to support one's idea. Hence, focusing analysis on the potential or challenges of oil rich economies such as the curse at the national political economy level alone is problematic since resource rich economies are acted on and constituted through actors both within and without.

The relationship between hydrocarbon industry and development reveals that the factors that mediate the impact of oil on development are multi-layered, spanning – global, national and local politics and conditions, while the curse (or blessing) is differentiated across space. Since ANT rejects a priori categories, and it is more concerned with the fluidity, networks and complexity of phenomenon in their associations (Johannesson and Bærenholdt 2009; Cressman 2009; Latour 2005; 1999; Law 1999), the dimensions of the resource curse such as poor relationship between resource endowment and poor economic growth, poverty, agricultural and industrial decline and natural resource induced conflicts should not be analysed as inevitable outcomes that come naturally in resource rich countries. Instead, they should be examined as constituted and mediated by activities of TOCs, national politics and local politics and conditions and activities of CSOs. For example, Shaxson's (2008) study shows corruption that is sometimes associated with the hydrocarbon industry often operates through a network where for instance, ExxonMobil and some banks in the US have enabled the President of Equatorial Guinea and his cronies to facilitate the transfer of money to foreign accounts at the expense of the citizens. The network between the TOCs concerned with profits and the political elites' interest in windfalls for self-enrichment are both implicated in the corruption that manifest in these resource rich countries. There is the need to view the challenges associated with oil-related development in Ghana as constituted, mediated and performed by several actors, a globalised hydrocarbon assemblage that is comprised of the negative impacts of oil, oil companies, global energy discourses, state politics, CSOs and local politics.

Based on the evidence of how the resource curse is produced and manifest, it seems a missing link in the analyses of it is how the actors, agencies and structures that shape and mediate its manifestation is a globalised assemblage. Existing explanations for the curse have not sufficiently accounted for how interactions among the globalised assemblage, that is made of global, national and local politics, institutions, structures and actors condition the development outcomes in resource abundant countries.

Since the resource curse seems to have been overly 'territorialized' to the state, ANT's focus on networks, associations and assemblages (Johannesson and Bærenholdt 2009; Cressman 2009; Latour 2005; 1999; Law 1999) helps to explain how it is produced and manifests. Focusing on national politics alone over-territorialised the challenges and/or opportunities associated with natural resource based development (see Bridge 2008). It also ignores how the national conditions interact with and are embedded in globalised politics and structures. Networks and associations help to 'deterritorialize' or 'reterritorialize' the curse or

resource-based development since the actors, factors and structures that shape and mediate how natural resources are extracted and utilized in countries extend beyond the state. ANT is useful in such analysis since it refutes deterministic categories such as natural/social, but instead focuses on the interconnectedness and relationality of social phenomena. Actor-network theory is a heuristic perspective that helps to understand the complexities of actors and practices in the development process (Heeks 2013).

Ayelazuno (2013) argues that in analysing the curse, especially in Africa, there is the need to move from national scale analysis to a critical political economy approach, that examines the global political economic foundations of the curse, and the dynamics of uneven capitalist development which positions the resource endowed countries as natural resource producers and exporters. In the extractive industry, because of unequal power relations and structures in the global economy that shape and condition natural resource-rich countries, the revenue that accrue to them and their development is partly determined by external factors (Adusah-Karikari 2015, p. 25). In oil producing countries in Africa, the oil sector is dominated by TOCs, and transnational and local elites, while the organisation of the hydrocarbon industry is such that oil is mostly refined outside the producing countries (Carmody 2009).

Le Billon (2001) earlier made a similar point, noting that in most of the natural resource endowed economies where the curse manifests, the resources are extracted and exported instead of being refined locally to retain revenue, creating limited linkages between natural resource extraction and other sectors of the local economy (see Adusah-Karikari 2015). For production (natural resource extraction) to benefit the general population, value is formed and circulated through the production networks across space (Lee 2006; 2002), but it seems in most resource rich economies in Africa, most value seem to go outside the national economy. According to Obi (2013), those who seem to experience the oil curse most in the developing world are the poor whose livelihoods are sometimes alienated and threatened by the political economy of globalized capital and the plunder and greed of the transnational elite. Karl (2007, p. 262) also argues the value of oil to power the global economy has created conditions where such states are often subject to external intervention in shaping their affairs and capturing of resource rent by dominant states and foreign private interests.

The curse or the challenges natural resource rich economies face can be conceptualized as a mode of governance, where national elites exercise authority over resources windfalls for personal enriched in partnership with TNCs (Carmody 2009, p. 356). Obi (2013, p. 65) and

Shivji (2009) raise question as to how the curse is constructed, reproduced, whose interests do it serves, the context in which resources extraction, how windfalls are appropriated and to whose benefit? The governance through globalised assemblage is shaped by socio-economic structures, and especially in Africa through the mode of its insertion into the global economy (Carmody 2009, p. 355). Resource endowed countries in Africa are inserted into the global economy to facilitate orderly export of natural resources through SAPs, WB, IMF and WTO conditionalities (Carmody 2009, p. 355). Bayart (2000) noted that through a 'strategy of extraversion', African countries are conditioned to export natural resource and to facilitate the expatriation of profits from their economies (see Collier 2008). The impact of oil on Ghana's development can be seen as a result of a globalised assemblage, where interactions between the country's national elites and local conditions, and TOCs and advanced economies, capital and technology condition how the values from oil is extracted and appropriated across space in the country.

4 Chapter 4: Methodology: researching the impact of oil, Ghana

4.1 Introduction

Research is a complex activity that involves diverse processes and practices. Hence, it is necessary that to undertake a study, the researcher has to critically analyse the research questions to be answered, data sources and the methods and strategies for data collection, analysis and presentation (Silverman 2013b; 2011). In designing a research, one has to also consider whether or not to rely exclusively on qualitative or quantitative methods or to combine them. Deciding on a particular methodology is informed by the research objectives, theoretical perspectives and the epistemological (concept of knowledge) and ontological (concept of reality) position of the researcher (Silverman 2013b; 2011).

This study analyses whether or not the oil discovery in Ghana is a blessing or a curse for the general populace. It specifically analyses whether there is a 'resource curse' and if so what are it's the dimensions? How can we assess whether or not Ghana is experiencing a resource curse? What is the current evidence of the impact of oil discovery and exploitation in Ghana? It analyses the impact of the oil industry on Ghana's national economic growth, agricultural and manufacturing sectors, government borrowing, employment, governance and corruption, environment degradation and conflict. Besides analysing whether or not Ghana is experiencing the dimensions of the resource curse at the national scale, it also examines the impact of oil on local fishing communities, and whether or not a localised curse has manifested. Based on the objectives of the study, the study relied on qualitative methods, supported by descriptive quantitative statistics, tables and graphs.

Data for the study was collected between May 2014 and January 2015 in Ghana. The data was collected in Accra, Sekondi-Takoradi and Dixcove, a fishing community in the Western Region of Ghana (why these places were chosen for the fieldwork, data collection and the specific data collected is discussed later in this chapter). Since the data for this study were located at different places in the country, the fieldwork activities were divided into phases to ensure order in the data collection processes. The initial data collection in Accra took place between May to July 2014, Sekondi-Takoradi fieldwork was undertaken from August and September 2014, and community interviews and surveys in Dixcove was undertaken in October and November, 2014. December 2014 and January 2015 were used to follow-up on other data sources. During these follow-ups, documents that help to understand the impact of oil on Ghana were gathered from CSOs, government institutions and oil companies that are operating in

Ghana. These documents supplement the interviews with politicians, policy makers (national and local), oil companies, and fishermen/fishmongers affected by the oil exploitation.

The methodological processes involved in the data collection, processing and analysis to answer the research questions are complex. It is therefore, prudent for researchers to be mindful of the strengths of each methodology, the researcher's situatedness, and to regard the research participants as partners in the research process. This section outlines the specific reasons for choosing particular methodological approaches, implications of combining different methods and data sources so as to improve the credibility and trustworthiness of the research findings. Given the merits of depending on multiple methods (Teye 2012), this study recognises the importance of triangulating different methodological strategies in data collection and analysis since it increases the reliable and credibility of the research process and its findings. The rest of the chapter is organised into eight sections. Section one discusses the qualitative and quantitative impasse, and the importance of qualitative interviews is examined in section two. Sections three, four, and five examines methodological triangulation, ethics and positionality, and multi-scalar case study respectively. The tools for data collection: document reviews, interviews, focus group interviews, and surveys are analysed in section seven. Section eight focuses on data analysis and interpretation. The concluding section argues that the triangulation diverse data sources helped to present the diversity of evidence and how oil impact people differently. Triangulation of data sources acquired through the various methods help to capture the variety of experiences, and increase the credibility of the data used to elucidate the impact of oil on Ghana's development.

4.2 **Quantitative and qualitative debate**

Discussion on qualitative and quantitative methods is necessary for this research as answering the research questions on whether or not the resource curse manifests in Ghana relies on statistics, interviews and live experiences of people that help to bring out the social context of how the curse is produced and experienced. Qualitative data and its analysis help to explore people's thoughts, opinions and social context of understanding the impact of oil in Ghana. The qualitative data is complimented by statistics on currency movement, economic growth rate, agricultural and industrial growth rate, poverty and local incomes which are measurable data that also explain patterns of the impact of oil. There are arguments as to whether either a quantitative or qualitative approach is more suitable for research (Guba and Lincoln 2004).

Informed by their scientific paradigm, each practitioner often justify the superiority of their methods in terms of their rigour and trustworthiness in presentation of social phenomenon. Some researchers sometimes even present qualitative and quantitative methodologies as dualistic perspectives which seem incompatible (Hay 2005; Marshall and Rossman 2006). Experience has however, shown that although these methodologies can complement each other, they have some unique characteristics, with either one of them in a particular epoch dominating research in the social sciences. For instance, in the 1950 and the 1960s, quantitative methods were prominent in geography, but qualitative methods gained prominence during the latter part of the twentieth century (Hay 2005). Some researchers have even portrayed quantitative methods as more objective, value free and having more scientific merit, while suggesting that qualitative methods are 'inferior' science because of their subjectivity (Hammersley 1992b). Rose (1997) and Haraway (1991) indeed questioned the notion of a value free scientific enquiry since all knowledges are situated, spatial and temporal. How knowledge is produced and the meaning attached to it is shaped and mediated by the social setting in the place or space.

In practice, both qualitative and quantitative researchers complement each other since they all strive to collect data and examine patterns in order to elucidate or explain a social phenomenon. Yet, their approaches seem to differ due to the nature of the data they generate and their concept of reality (Neuman 2011). Qualitative method appear to generate and use 'soft' data in the form of words and sentences, while quantitative techniques generate 'hard' and use data in the form of numbers or statistics. Both methods partly differ in their principles about the research process and assumptions about social life (reality). Quantitative researchers appear to ascribe to positivist principles where there is an assumption that there are objective realities out there that can be discovered by the researchers (Neuman 2011; Hammersley 1992a 1992b). Qualitative perspective on the contrary ascribes to a constructivist and interpretive viewpoints that emphasize context. Within this frame, both approaches seem to vary in what they aim to accomplish in the research. Quantitative methods seek to verify/falsify a hypothesis while qualitative approaches seek to explain and describe social relations and to develop new hypotheses. But despite these seeming differences, both approaches in practice can complement each other to increase the trustworthiness and credibility of the research outcomes.

Since in practice, despite the seeming differences between the two perspectives, both methods can complement each other, it is argued that as researchers, our focus should be on what the research seeks to achieve and what method is appropriate for specific issues rather than the superiority of either methodologies (Silverman 2013b). Silverman (2013a; 2013b) contends that methods have to be tailored to suit specific research objectives. Researchers can

become more effective if they reject arbitrary, self-imposed categories and instead systematically pursue knowledge about a phenomenon, whether the data is qualitatively or quantitatively generated or produced (Silverman 2013b, p. 11). This is because it seems no one specific research methodology is intrinsically superior to others, though some methods can be more suitable for an aspect of a particular research. Hammersley (1992a, p. 163) correctly noted that 'we are not faced, then, with a stark choice between words and numbers (or statistics), or even between precise and imprecise data; but rather with a range from more or less precise data'. Issues regarding type of data and research methods should be dependent on the nature of the issues under consideration or research, the purpose and resources available and not necessarily on an ideological commitment to a methodological paradigm (Hammersley 1992a, p. 163; Silverman 2013b, p.15) since both methodological approaches complement each other (Silverman 2013b; 2010; Teye 2012; Neuman 2011). It seems somehow erroneous to distinguish between qualitative and quantitative methods based only on their use of words/letters and numbers/statistics respectively since quantitative data can also be analysed and interpreted qualitatively as in the case of descriptive statistics.

Some social science researchers have indeed criticized the dualistic view that tends to portray qualitative method as subjective and quantitative methods as objective and value free (see Phillips, 1998; Winchester, 2005; Teye 2012). Methods, be it qualitative or quantitative and the data they generate are influenced by the people and the politics under which they are produced. Qualitative methods have the advantage of demonstrating nuances and complexities in experiences (Marshall and Rossman 2006). They allow researchers to understand people's experiences within their social context (Phophalia 2010) as they do not focus on aggregation of issues into statistics in order to generalise, but instead retain the data in its rich descriptive forms (Silverman 2013b). Aggregation of research participants' opinions into statistics, as advocated by a quantitative approach can sometimes misrepresent the diversity of research participants' views or thoughts (Silverman 2013b). The open-ended questions employed by qualitative researchers allow research participants to express their experiences freely. Likewise while quantitative methods can answer the how many and how much questions, it can be poor in telling the why questions (Silverman 2013a; 2013b) though some researchers would dispute such claims. Quantitative methods on the other hand in the form of statistics are very useful in showing changing trends in a phenomenon.

As Silverman (2013b, p. 121) noted, qualitative methods can be more natural in exploring the complexities of human life as research participants are able to describe their life stories more effectively. In the case of the resource curse and how it manifests in local

communities, livelihoods experiences of the fishing communities in Ghana can be more aptly be understood through qualitative methods which generate rich data. Relying only on statistics, such as poverty level and income statistics, can silence the diversity of experiences of those affected. Surveys were also important in elucidating aspects of living conditions in fishing communities, such as changed incomes. Dimensions of the curse such as economic growth rate, debt and agricultural and industrial growth rates can best be understood through statistics, supported by key informant interviews. Hence, there seems to be no right or wrong methods, but more appropriate ones based on specific questions and what the research aims to illustrate. For example, in order to understand local people experiences with oil and fishing, it is better to interact with them through interviews or focus groups than giving them pre-defined categories based on survey methods. Individual and focus group interviews can bring out the nuances in the experiences of the people.

4.3 **Importance of qualitative interviews**

Interviewing involves building rapport by ensuring trust and respect for research participants and the information they provide (DiCicco-Bloom and Crabtree 2006). Research participants need to be assured of the confidentiality of the information they share with the researcher. The environment for interview also needs to be safe and comfortable for research participants to share their experiences. It is also prudent not to ask intruding questions at the beginning of an interview where rapport is not well established (Silverman 2013b; Neuman 2011). Broom (2005) argues that at the beginning of an interview, it is good to talk about general issues before progressing gradually into the main themes to help to build trust. The interview process should be seen as a guided conversation where participants are engaged in co-producing knowledge (Silverman 2013b). It is not a question and answer event.

Interviewing can be seen as a routine occurrence as it involves asking people to discuss an issue (but not in the same format), as often transpires in social life. It is a vital strategy for gathering data as it allows research participants to express their thoughts and opinions, while allowing the researcher to gauge the mood and truthfulness of research participants (Silverman 2010; 2005; Marshal and Rossman 2006). In spite of its apparent simplicity, it is a complex process since research participants have political and values systems which influence the data generated from the process (McDowell 2010; Marshall and Rossman 2006). Interview methods however vary. For example, qualitative interviews use open-ended questions that seek rich and detailed information, and explore context in order to understand the complexities of social

phenomena. This differs from closed-ended questions that are typically associated with quantitative research (Marshall and Rossman 2006; Silverman 2013b).

The strength of interviews in exploring people's lives is its ability to allow researchers to explore contexts and probe for further meanings which provides in-depth information about a phenomenon. It also allows for analysing 'conflict, ongoing struggle, tension and subjectivity, as well as the situated and co-produced nature of the accounts (Broom 2005, p. 72). Through interviews, the researcher understands how the research participants evaluate their situations and lived experiences (Wiles et al. 2005). Qualitative interview is about revealing 'subjectivity and complexity; seeking not to count or reduce, but to represent rich, subjective experience in a way that reflects on consistencies and parallels, but to also retain the nuanced nature of the data (Broom 2005, p. 72). DiCicco-Bloom and Crabtree (2006) argue that interviews should be seen as an intimate personal encounters between the researcher and researched, interacting to understand complex social issues. Notwithstanding the importance of interviews in qualitative research, they have challenges. Interviews seem more appropriate for studying present circumstances, but can face challenges in studying historical events due to problems of recalling them (Silverman 2013b). The reliability of interview data can sometimes be problematic as participants' memories can be misleading or they can tailor their responses based on their reaction to the researcher (Berger 2000; Arksey and Knight 1999).

During the fieldwork for this study, an important subject that has been discovered is the challenge associated with elite interviews (Rice 2010) such as oil executives, politicians and policy makers at the ministries. It is often argued that gaining access and power relations can undermine elite interviews (Rice 2010; Parmaksiz 2010; Bygnes 2008; Smith 2006). There were challenges of access to the oil executives and the political elites in Ghana. But Smith (2006) also argues that micro-politics and power that characterise the interview process is fluid, hence, what seems to be required is the researcher's confidence and knowledge in the subject matter. For Bygnes (2008, p. 3), the social dynamics and power-relations during the interview processes depend on macro structures at the national and corporate contexts, and how the elites perceive the researcher and his/her motives. The 'elites' reactions to the researcher are based on their perception of the researcher; whether he/she would serve or undermine their interest. It is also necessary to recognise the unequal power relations that can emerge between the researcher and researched (Allen 2003). The relationship is complex with different motives and interests, hence the need to approach the interview process with an open mind to understand the nuances in people's experiences and perceptions of issues. Despite some challenges that often characterise the interview process, they are still an important medium to understand the

complexities of both present and past social issues. Combining interviews with other methods can to help clarify some of the conflicting issues that emerge during research and to increase the credibility of the research outcome.

4.4 **Methodological triangulation**

Due to the complexity of this research and the diverse questions it seeks to answer, the study combines diverse methodological approaches to increase the credibility and trustworthiness of the research process and its findings (Seale 1999). The practice of combining different methodological approaches in the research process is known as methodological triangulation (Silverman 2013b). As a strategy, triangulation involves combining or employing qualitative and quantitative methodologies or strategies in data collection, analysis and reporting (Teye 2012; Neuman 2011). Though it is a complex strategy and can be challenging, it has an advantage of increasing the soundness of the research findings. Reliability and trustworthiness are promoted by combining methods and data sources to cross-check information (Davies and Dodd 2002), minimises the biases associated with using and single methodology and data source (Creswell 2009). Norman and Yvonna (2002, p. 8) argue that triangulation increases the 'rigour and depth' of research outcomes. It also allow the researcher to learn and understand phenomenon by 'observing from multiple perspectives' (Neuman 2011, p. 164).

From the above, one can observe that there can be different kinds of triangulation. Neuman (2011) identified four approaches to triangulation: measure, observer, theory and method. Triangulation of 'measure' is where we take multiple measurements of the same phenomenon. For example, in analysing the impact of oil on corruption in Ghana, documentary analysis was conducted on corruption trends based on Transparency International's Corruption Perception Index, in addition to conducting key informant interviews with CSOs to gauge people's perceptions on whether or not corruption has changed since Ghana started oil production. Analysing a phenomenon such as corruption from such multiple sources/measures increase the trustworthiness and credibility of the responses.

The triangulation of 'observer' is where multiple persons bring multiple or alternative perspectives, backgrounds and social characteristics to bear on a phenomenon (Neuman 2011). Theoretical triangulation on the other hand involves using multiple theoretical perspectives to plan research or interpret data. This can provide an opportunity to use multiple lenses to view the social world. For example, a study of the impact of natural resource windfalls on a country's development can be based on a national political economy approach where the nature of

national politics alone is viewed as the main factor that mediates and conditions the impact of natural resource windfalls. Such national political economy approach can limit the understanding of how natural resource windfalls shape national economies, hence the need to include network perspectives such as ANT that integrates how global energy security concerns and operations of TOCs and local politics interact with national politics to shape development outcome. In this analysis of the challenges associated with oil and development in Ghana, the study focused on interactions between 'globalised actors', comprising the Ghanaian state, oil importing states, TOCs, energy discourses, global initiatives and local politics.

Triangulation of 'method' comprises combining varied methods, usually mixing qualitative and quantitative approaches in data collection and analysis. This is essential and useful because each approach has its strengths, and combining them could make the research findings more rigorous. Bryman (2006) argues that triangulation of research methods is good for convergence, corroboration and validation from different methods. It also allows for complementarity, thus through using mixed methods, we can illustrate, elaborate and clarify how results from different methods complement each other. It also enables the researcher to have a more comprehensive and complete understanding of the issues under study (Bryman 2006). This study on how the curse manifests in Ghana combined qualitative interviews, descriptive statistics and surveys. Even, in combining various methods and data sources, the researcher is aware the ethical obligations and relationship with research participants.

4.5 **Ethics, positionality and reflexivity**

Adherence to ethics is critical in research. Basic ethical concerns are informed consent and research participants' anonymity (Silverman 2013b; 2001). Researchers are mandated to ensure the confidentiality of their research participants (Ryen 2011; Silverman 2010), unless they agree to waive it. The researcher should also ensure that the research is practicable (Marshall and Rossman 2006). Research participants' anonymity and confidentiality can sometimes be ensured through the use of pseudonyms. Additionally, during the fieldwork, research participants were reminded that the research was voluntary, primarily academic, and interview recording was done with the consent of the research participants (see Dowling, 2005; Limb and Dwyer 2001; Valentine 2001). This is in consonance with the warning that research participants must consent to the research in an unconstrained way, and to make the decision to participate or otherwise on the basis of sufficient and accurate information about the research (Hammersley and Atkinson 2007). Research participants should also be free to withdraw from

the research at any time. Adhering to these ethical issues is crucial because where the research is later found to be distasteful to the researched and/or gatekeepers, it will violate the ethical rules, and can restrict future access to the area for other researchers in the future as the research participants will not be willing participate in future research concerning them. Researchers should not be perceived as exploiting the researched, but needs to focus on elucidating the 'truth' or 'truths', while also recognizing his/her relationship to the researched.

Positionality explains the relationship between the researcher and researched (Crang and Cook 2007; Hammersley and Atkinson 2007). There is often debate as to whether insiders or outsiders will be in an advantageous position to study a group or an issue (Miles and Crush 1993; Crang and Cook 2007; Rose 1997; Narayan 1993). It is however cautioned that knowledge is produced through dialogic processes, hence the outsider or insider status of the researcher can be of secondary importance in the research process (Miles and Crush 1993). It is the researcher's ability to negotiate barriers and opportunities that seems to determine the quality of data produced, not necessarily his/her insider-outsider status during the research process. The researcher's position is negotiated based on one's ability to identify with the population under study. The positionality of the researcher emerges through a collaborative process. The researcher occupies fragmented, multiple and heterogeneous positions in the process. Mullings (1999, p. 340) contends that the 'insider/outsider binary in reality is a boundary that is not only highly unstable but also one that ignores the dynamism of positionalities in time and space'. Intersectionality, the differences social categories such as gender, race, class, ethnicity, sexuality and among others are important in the research process (Valentine 2007; Cope 2002). These social categories interlock and interact, and should not be treated as separate categories. Valentine (2007) argues intersectionality needs to be understood in the way in which an individual or a researcher are ascribed multiple statuses by various groups. Phoenix (2006, p. 187) argues intersectionality brings to light the multiple positioning that constitutes everyday life and the power relations that are associated with it. For instance in this particular research, my status as a Ghanaian probably gave me access to research participants as an insider, yet, at the same time, my educational status appeared to alienate me from the fishermen who sometimes viewed me as an outsider. Thus, the status I assume during the fieldwork in Ghana changes based on how the research participants view me. During the fieldwork for this study, I sometimes assume the status of an insider or an outsider depending on the circumstances. Our status is dependent on the social setting. It is however, acknowledged that a researcher's positionality can affect the kind of knowledge that is produced since all knowledge is affected or tainted and marked by their source (McDowell 2010; Rose 1997).

During the fieldwork for this study, both fishermen and oil companies in Ghana always strived to tell stories that represent their perspectives on the impact of oil exploration in the country. I had to seek third party views and also to reflect on the responses from the fishermen, politicians, and the TOCs.

Researchers are encouraged to be self-reflective of the information we gather and what we report. Reflexivity is the 'consciousness of self in facing the political dimensions of fieldwork and construction of knowledge' (Nagar and Geiger 2007, p. 2). It entailed a recognition that knowledge is shaped by the fluid and changing social identity and positionality of the researcher (ibid.). Butz (2010, p. 146) advocated for critical reflexivity which focused on the need to 'produce knowledge and representations that self-consciously recognize the place of the researcher-self in the production of that knowledge', by subjecting ourselves and research setting to analysis. DeLyser (2010, p. 347) also warned researchers to move 'beyond superficial notions of objectivity to embrace the unfolding positionality of each researcher in each research-engaged community; careful reflexivity is an obligation of writers to the community, to the readers, and to her or himself'. This implies that researchers need to recognize that their responsibility go beyond themselves to the social groups they represent in our findings. The knowledge that is produced is also situated knowledge (Rose 1997).

Some earlier researches assume that a researcher's distance from the social group can increase the credibility, neutrality and objectivity of findings (Crang and Cook 2007; Hammersley and Atkinson 2007; Malkki 1997; Passaro 1997). It is however warned that objectivity and neutrality are not functions of distance but a theoretical orientation (Guba and Lincoln 2004, Passaro 1997) and self-reflectivity. This is because though researchers can have their biases, it is the reflexivity that ensures that such predispositions do not affect our research outcomes. The researcher is located in a complex web of inter-subjective social relations that goes beyond an insider-outsider binary. For instance, being a member of 'a group does not denote complete sameness within that group, likewise not being a member of a group does not denote complete difference' (Dwyer and Buckle 2009, p. 7). For instance, being a Ghanaian does not connote sameness with fishermen in Ghana since my education and ethnicity ascribe different status to me. According to Bhabha (1988) and Hannah (2005), researchers have to view the field as a space of possibilities. They also have to assume an identity that is dialogic, indefinite, and characterized by hybridity since the researcher's position is often characterised by uncertainties (Bhabha 1988). Our subject position in social research can be seen as an assemblage of contradictory and subjective interpretation. Often, during the research, the researcher and research participants are actors in a play (the research) and one does not need

to be an insider/outsider to perform well. The researcher must however be critical of the research process and the data by reflecting on them. Reflexivity, Rose (1997) suggested is an introspective aspect of thought that is self-critical and analytical. The data is also complex, so is the researcher's identity is also multifaceted. Identities that are ascribed to us are not eternal, they can be fleeting and due to the plural nature of the data and their sources, the cases from which study are undertaken can also be multi-scalar.

4.6 **Multi-scalar case study**

Case studies differ. It can be a space such as a country, region or community or a social phenomenon like teenage pregnancy (Yin 2014). Social phenomena can be studied in specific places as a case study. The case can be simple or complex but the important thing is that the case should help in understanding the social issue. Flyvbjerg (2011) defines case study as an intensive analysis or investigation of an individual unit such as a community. Yin (2014, p.16) explains case study as an empirical inquiry that investigates a phenomenon in depth and within its real-world context. A case study arises as a result of the desire to understand a social phenomenon (Yin 2014). However, in some cases, the boundaries of a phenomenon and its context may not be clearly evident (Yin 2014; Yin and Davis 2007) which can make the case study complex. Case studies can therefore serve as a tool for researchers to study complex phenomena (Baxter and Jack 2008; Yin 2003). Baxter and Jack (2008) argue that case study can help to deconstruct and reconstruction of a social phenomenon. The manifestation of social phenomenon such as the resource curse can be interrogated as a case study at various scales; national, local, or rural since the impact of oil on Ghana varies among social groups and spaces.

Yin (2014) loosely categorises case studies into three: explanatory, descriptive and multiple (see Allison 1971). An explanatory single case study involves studying a phenomenon to understand it in detail so as to draw conclusions. This detailed study can form a basis for generalisation (Yin 2014). Descriptive case study involves detailed studies and description of a phenomenon. Usually, it traces the sequence of events over time or describes the behaviour or activities of a group of people (Yin 2014). Multiple case studies on the other hand cover multiple phenomena. Besides Yin's (2014) categorisation of case studies as noted above, Silverman (2013b) and Stake (1995) noted three types of case studies: intrinsic, instrumental, and collective. Intrinsic cases are studied not to generalise or build theories (Silverman 2013b) but because a phenomenon is of interest to the researcher (Stake 2000). The results of intrinsic case studies can have limited transferability (Baxter and Jack 2008). Instrumental cases on the

other hand are studied to revise a generalisation or provide further insight into a phenomenon (Silverman 2013b; Baxter and Jack 2008). The level of generalisation that can be drawn from a case study has to be examined and the boundaries and aims of the case study has to be defined at the early stage of the research (Silverman 2013b). Collective case studies meanwhile involve studying several cases so as to enrich one's understanding of the cases (Silverman 2010; 2001; Mason 2000; 1996). Cases are selected based on the research questions and purposive sampling can be used to choose knowledgeable persons in the case (Silverman 2013b; Yin 2009). Deciding on what one considers worthy of study can be subjective.

Case study has been used to understand various issues or phenomena. Geels (2006a) used Multi-Level Perspective (MLP) for historical cases analysis of evolutionary change. MLP is premised on the idea that transitions are non-linear processes that result from the interplay of multiple developments (Geels 2012; 2005; 2002). With MLP, it is suggested that there three analytical levels: niches (the locus for radical innovations), socio-technical regimes (the locus of established practices and associated rules), and an exogenous socio-technical landscape (Geels 2012, p. 472; Rip and Kemp 1998). Socio-technical relations also illustrates how ANT argues that phenomena should be explained by analysing the interactions between human and non-human actors. An analysis of change needs to focus on the heterogeneous linkages among the actors and phenomena at the macro-level (national), meso-level (regional) and micro-level (local). It is also argued transitions are not caused by a change in a single aspect, but as a result of the interplay of several actors at multiple levels (Geels 2006a, p. 1014). This fits into an ANT perspective that phenomena are linked to other actors and spaces (see Latour 1991; Callon 1991; Law and Hassard 1999). The multi-levels perspective for instance, was used by Geels (2006b, p. 452) to analyse the historical transformation of American factory production (1850–1930). According to Geels (2006b), factory production is a complex socio-technical system, with several technical elements, including machines, power sources, power distribution to machine, factory building and technologies.

The MLP has been applied to a multiple case study of climate change and reduction in the emission of carbon dioxide which requires transitions to new transport systems (Geels 2014; 2012). It is contended that to understand the dynamics of these transitions, we have to appreciate a socio-technical approach which goes beyond technology or behaviour change (Geels 2012) since systemic transitions entail co-evolution and multidimensional interactions between industry, technology, markets, policy, culture and civil society (Geels 2014). MLP presents a heuristic framework to analyse interactions among places and actors. With the MLP framework, analysis of issues and changes shift from hierarchy and containment to networks

(Geels 2006b, p. 451). Understanding complex phenomenon requires multiple approaches that addresses interactions among and between the various actors and spaces that form systems (see Geels 2012). As Geels (2011) argues, spaces should be viewed in terms of 'nested hierarchy' where the global, national, regional and local are mutually constitutive. Yet, although the global, national and local politics and conditions can influence each other, the impact of the policies can differ in these spaces. Hence, to have a comprehensive understanding of an issue at these spaces (national and local), require a multi-scalar case study of such phenomena.

It also argued that multi-scale analysis can be applied to study of issues such as sustainability (Geels 2011), electricity (Verbong and Geels 2007), renewable energy (Verbong et al. 2008) and transport and sustainability (Whitmarsh 2012). With sustainability, it is suggested that analysis of problems such as loss of biodiversity and utilisation and depletion of natural resources like oil should be based on multi-scale analysis (Geels 2011). This is because it can involve a configuration of transport, energy and agri-food systems through technology, policy, infrastructure, consumer practices, cultural meanings and scientific knowledge (Geels 2011; 2004; Elzen et al. 2004). These elements are also reproduced, maintained and transformed by actors such as firms, policy makers and politicians, consumers, local communities, CSOs and researchers. Transitions are therefore complex and long-term processes comprising multiple actors (Geels 2011, p. 24).

Multi-case study enables researcher to explore complexities of phenomena (Yin 2014; 2003; Baxter and Jack 2008). Using multiple case study is informed by Stake (1995) and Yin's (2003) constructivist approach. Constructivists emphasis the relativity of 'truths'. It also recognizes the importance of the subjective human creation of meaning (Baxter and Jack 2008). Pluralism is also stressed, with a focus on the circular dynamic tension among subject and object (Baxter and Jack 2008, p. 545). This approach also recognises the close partnership between the researcher and the research participant in knowledge production (Baxter and Jack 2008, p. 545). It is through such collaboration that the research participants are enabled to tell their stories and their interpretations of reality, while allowing the researcher to better understand the research participants' actions (Baxter and Jack 2008, p. 545; Lather, 1992).

This research focuses on a multi-scalar case analysis of the impact of oil in Ghana. It is a multi-scalar analysis because it analyses the impact of oil on Ghana at the national and local levels. Nationally, the study interrogates whether or not the oil industry is negatively impacting economic growth, agricultural and industrial development, employment creation, currency movement, government borrowing and debt, democratic polity and governance. The analysis at the local scale focuses on the impact of oil exploration and production on local income,

poverty, employment, women's economic activities, environmental degradation, conflicts between local fishermen and government/oil companies, disruption of fishing activities, and exclusion of local people in oil sector employment.

Based on the discussion that a case study can be applied to a nation, region or local community, the cases chosen for this study are Ghana as a country and Dixcove, a local fishing community in the Western Region of Ghana. Ghana as a case will help in understanding the impact of oil at the national scale, while Dixcove's case helps to understand the impact of oil at local level. Dixcove is a rural fishing community. The impact of oil differs in these spaces as the economic activities, politics and livelihoods strategies are also different. Besides the specificities of the cases at the national and local levels, the study also analyses the network and interactions between them. These multi-scale cases are chosen so as one can comprehensively analyse the impact of oil at both the national and local scales in Ghana. Due to the multi-scalar nature of the impact of oil on development, the study also requires diverse methodological approaches for data collection.

4.7 **Methodological tools for data collection**

Due to the complex nature of the issues this study seeks to address and the multi-scalar nature of it, different methodological instruments were used to gather the necessary data to answer the research questions raised. This section discusses the methods and they were utilised in the data collection order to understand the impact oil on Ghana's economy. The data collection tools include policy document analysis, interviews, focus group discussions and field notes. Since the curse is not new, existing literature and policy document on the curse were review to understand how it manifests in spaces.

4.7.1 Understanding the impact of oil through document review

Policy document analysis is methods for conducting research where a researcher gathers and analyses the content of existing documents to find answers to questions raised in the study (Neuman 2011). These documents are analysed to draw inferences, provide new insight into an existing issue or to provide practical guide for policies (Elo and Kyngas 2007). The existing documents are helpful in elucidating whether or not there is a curse, what are its dimensions. Policy documents were also useful in assessing whether or not Ghana is experiencing the curse. Dimensions of the curse that were analysed included the impact of oil on economic growth, government borrowing and debt, currency movement, neglect and/or decline of the agricultural

and manufacturing sectors, employment, democratic polity and governance, environment and violent conflict (Ploeg and Venables 2011; Auty 2001; 1993, Sachs and Warner 2001; Karl 1997;). To analyse the political economy of the curse, this study relied on books, articles, and policy documents from geography, economics, political science and development studies which examined the development experiences of resource-rich economies. These documents were critically examined to understand their discussions of the curse, the evidential backing to conclude there is a curse and theoretical perspectives. This literature review or document analysis helped to systematically map out the dimensions of the curse.

In the past, content or document analysis was used for quantitative research (Anderson 1997), but it has also been used for qualitative analysis (Holsti 1969). It is argued that the strict divide between quantitative and qualitative document analysis is problematic as it can limit the benefits it brings research in the social sciences (Holsti 1969; Neuendorf 2002). Holsti (1969) argued that the disparity arises due to the definition as to what constitute quantitative and qualitative research, but in practice, qualitative decisions can be applied in quantitative document analysis, including the coding systems that are employed in organising and interpreting qualitative data. It seems what is necessary is for researchers to examine the manifest (empirical) and latent (social or hidden) meaning of documents (Graneheim and Lundman 2004; Bos and Tarnai 1999). Some researchers viewed content or document analysis as a 'technique for making inferences by objectively and systematically identifying specific characteristics of messages' (Holsti (1969, p. 14). Neuman (2003, p. 310) however argued that document analysis has to be seen as technique for gathering, reviewing and analysing the content of a document.

For some researchers, there are no strict rules in conducting content (Webber 1996) or document analysis. Experience however, suggests that it is important to develop themes and code (Holsti 1969; Neuendorf 2002). Through the use of the themes and codes, it can be used to organise and analyse documents in order to explain patterns that are sometimes not evident to a reader (Neuman 2003; Hsieh and Shannon 2005; Graneheim and Lundman 2004). Document analysis has the advantage of revealing trends, associations and patterns and to highlight the differences in how social phenomena are reported (Krippendorf 2004). It has been used in media research on how issues are reported (Neuman 2011; Nelkin 1995; Anderson 1997). Within this study on the impact of oil on Ghana, the study analysed media reports on training activities for employment, oil-related environmental challenges, and discussions in the print and electronic media on transparent use of oil windfalls in country.

Bos and Tarnai (1999) argued that analysing documents can be seen as hermeneutic or empirical instrument. In a hermeneutic approach, documents are interpreted above their superficial content and subject to interpretation and examination within their social and theoretical context. This approach is criticised as very subjective, arbitrary and descriptive (Berelson, 1952; Bos and Tarnai 1999). Empirical document analysis is associated with quantitative research that assign content to categories and counting frequencies to describe the manifest content of a document (Bos and Tarnai 1999, p. 662). It is however, argued that where document analysis is restricted to its manifest content, it can hinder researchers from drawing inferences about latent meanings from the document (Bos and Tarnai 1999, p. 662; Osgood 1959). Elo and Kyngas (2007) on their part argue that content analysis can be performed inductively or deductively. In inductive analysis, themes are developed from the data and this is often used where there is limited research on the phenomenon. However, where research is aimed at testing an existing theory, deductive methods are used by relying on existing themes. With the resource curse, this study relied on existing themes (the dimensions of the curse) to determine whether or not Ghana is experiencing them.

Analysing the existing documents are important for this research. As Prior (2011; 2008) argued, existing documents can be important in four ways in document analysis. They are essential as 'resource', 'topic', 'in use' and 'in action'. As 'resource', documents are valued for their content, and they are viewed as having agency even though some documents can be manipulated to suit specific aims (Prior 2011). Because documents can be used as resource, Glaser and Strauss (1967, p. 163) argues that in sociological studies, documents are the 'anthropologist's informant or a sociologist's interviewee. The documents are analysed to understand a phenomenon (Webber 1990; Krippendorf 2004). Documents can be sources of data where the researcher does not know the social context within they are produced (Bryman 2004). For instance, policy documents and reports produced by oil companies, CSOs, and government institutions in Ghana purportedly illustrate the impact of oil on socio-economic development in the country. An analysis of such documents has helped to reveal the impact of oil on Ghana's economy from the perspectives of those organisations. But such documents are shaped and influenced by goals and politics of the institutions that produce them. The researcher cannot simply accept the content of these documents as sacrosanct. Instead, there is the need to question their contents and objectives (see Prior 2011). Reading these documents and scrutinizing them requires readers to bring their background assumptions to bear on the document (Atkinson and Coffey 2011, p. 85, 90). The documents exist in relation to other documents, hence analysis of the documents should be done in relation to other social realities

outside the documents. The reports of the oil companies, government agencies and CSOs in Ghana were read and interpreted against the experiences of the local communities and persons' who are affected by the activities of oil exploitation in the country.

The research question on how one can assess whether or not Ghana is experiencing a 'curse' is assessed using existing policy documents, supported by interviews. Documents that were analysed included annual reports of the Bank of Ghana (BOG) 2010 – 2015, Institute of Statistics, Social and Economic Research (ISSER) 2010 – 2015, Ghana Statistical Service (GSS) 2010 – 2015, Ghana National Petroleum Corporation (GNPC) 2010 – 2015, and Ministry of Finance and Economic Planning (MOFEP) budget statements, 2010 – 2015. Annual reports of Tullow and Kosmos were analysed to interrogate how much oil windfalls contributed to government revenue, employment created, impact of oil industry technology on other sectors and provision of social services. Statistical data from the BOG, ISSER and GSS assisted to interrogate the trend in the local currency movement, economic growth, growth trends in the agricultural and industrial sectors and their contribution to economic growth. Data from UNCTAD also helped to analyse the trends in FDIs flow since oil exploration began in 2003 and production started in 2010. Statistics from the BOG, ISSER and GSS were valuable to elucidate the impact of oil on Ghana's economy.

Corruption and weak institution are issues that are highlighted (Bridge and Le Billion 2013; Brunnschweiler and Bulte 2008) as both indicative of and products of the curse. In analysing the impact of oil on governance and corruption in Ghana, the study relied on data from reports of the Transparency International's (TI) Corruptions Perception Index (CPI) from (TI, 2007 – 2015), Ghana Integrity Initiative (GII, 2007 – 2015), and the Commission on Human Rights and Administrative Justice reports (CHRAJ). On conflict, data from the West African Network for Peacebuilding (WANEP) and interviews with CSOs helped to elucidate whether or not there were oil-related conflict, especially between TOCs and fishermen since oil production started in 2010. Policy documents from the EPA were also analysed to understand the environmental challenges associated with the oil industry in Ghana. The documents from the EPA helped to understand whether there were oil spills, gas flaring and other environmental challenges since oil production started. It also examined if there are plans/policies to ensure that the country can be able to deal with oil related challenges and what punitive measures are in place to deal with TOCs that pollute the environment.

Based on the important role reports and policy documents play in analysing the impact of oil on Ghana, it is obvious that documents are vital source of data for analysing social issues.

But one weakness is they should not be seen as neutral and transparent reflections of social realities (Atkinson and Coffey 2011). They are constructed to express the objectives of the organisations that commission them. Indeed, documents serve as the medium through which organisations present themselves to others (Atkinson and Coffey 2011). An organisation's documents show the nature, function, and workings of it. Because documents are social constructs, researchers therefore, cannot only pay attention to the collection and analysis of documents, but also need to understand how such documents are produced, read, shared and used (Atkinson and Coffey 2011, p. 79; Prior 2008). Just like other documents, the reports (documents) from the oil companies and government agencies in Ghana must be treated as social constructs that represent what the TOCs and government show as the impact of oil on development.

Compared to other methods, document analysis appears less expensive and unobtrusive in gathering data (Neuman 2011; 2003). Analysis of existing documents as a data source is also relatively cheaper compared to conducting new large scale surveys and interviews. Existing documents also allow researchers to compare results across nations, groups, or organisations. For new researchers, they can raise additional questions that were not raised in the existing documents (Neuman 2011). For example, most previous research (with a few exceptions such as Obi and Rustad (2011) which examinee the impact of oil in the Niger Delta) seemed to be silent on the 'geography of the curse' or local dimensions of the curse. Most analysis focuses on national scale corruption, government borrowing and debt, currency movement and impact of oil on industrial and agricultural development. The multi-scalar analysis of the impact of oil on Ghana helps to illustrate the differentiated challenges that can be associated with oil and development at the national and local levels. Another challenge associated with existing documents is the people, agencies or governments that produced the data, did it to fit their objectives, hence it might not be appropriate to answer present questions (Neuman 2011). To use such information, the researcher has to consider the people or organisation that collected the data, their purpose, time and place, sampling methods and their objectives (Neuman 2011). Despite some problems that confront users of existing policy documents, when they are supported by other methods like interviews, they are very important to elucidate social phenomenon such as the impact of oil on development in Ghana.

4.7.2 Interviewing oil stakeholders in Ghana

Interviews were important tools in collecting data to understand the impact of oil on Ghana's economy, both at the national and local scale. Purposive sampling was used to choose interviewees to understand how oil impacts the national economy and local livelihoods. Interviewees were chosen from government institutions (both national and regional) based on their institutional involvement and knowledge in oil and oil-related activities, CSOs, oil companies, and persons whose livelihoods are affected by the oil industry. During this study, two types of interviews were conducted: key informant interviews and interviews with fisher-folk whose livelihoods seem to be affected by the hydrocarbon industry in Western Region, Ghana. The key informant interviewees were selected from government institutions, CSOs and TOCs. A key informant is a person who is knowledgeable in a research problem or topic and is willing to discuss his/her ideas about it (Silverman 2013b; Marshall and Rossman 2006). For this research on the resource curse, key informants are persons who are knowledgeable on how oil impacts Ghana's development. To ensure clarity in the issues and to gauge how research participants respond to the questions, the interview questions were first discussed with some senior researchers at the University of Ghana who are knowledgeable in oil and gas issues. Based on their responses, some of the questions were reframed to ensure clarity.

The twenty-five (25) key informant interviews were conduct to understand the impact of the oil industry on Ghana. The informants were chosen from the Ministry of Energy (MOE), Ghana National Petroleum Company (GNPC), Environmental Protection Agency (EPA), Ministry of Finance and Economic Planning (MOFEP), Ghana Statistical Service (GSS) Ministry of Food and Agriculture (MOFA). Other institutions include Energy Commission (EC), Petroleum Commission (PC), Ghana Gas Company (GGC), Integrated Social Development Centre (ISODEC), Centre for Democratic Development (CDD), Africa Centre for Energy Policy (ACEP), Kosmos Energy and Tullow Oil.

Themes discussed with the institutions though related, differ based on the expert knowledge of the institution and how their activities relate to the oil and gas industry. Issues discussed during the key informant interviews with research participants from GNPC included; the impact of oil on employment, whether or not multinational oil companies have helped to improve the technical and technological competence of GNPC, and foreign direct investment (FDIs) flows into Ghana since 2007 when oil exploration started. EPA interviews focused on the impact of oil on the environment such as gas flaring, pollution, solid and liquid waste management, loss of biodiversity and aquatic lives, and policies that are put in place to deal with oil and gas spillage. It also discusses how environmental impact assessments are

conducted and the environmental reports by the oil companies. Interviews with the MOFEP and GSS discuss issues concerning the impact of oil on economic growth, FDIs flows into the country due to oil-related activities, currency movement due to in-flows of oil windfalls and where oil revenues are invested. It also discussed with interviewees whether or not investments in the industrial sector are declining or increasing due to investment in the oil sector and what policies are put in place to promote oil-industrial growth. Furthermore, interviews with the Ministry of Food and Agriculture discussed issues concerning impact of oil on agriculture investments, how fishing is affected and whether or not the agricultural sector is improving and what factors account for the changes in the sector. Interviews with Energy Commission (EC), Petroleum Commission (PC), and Ghana Gas Company (GGC) discussed the policies that will ensure that Ghana derives maximum benefits from the oil industry such as development of local technical competence, ensure TOCs compliance with environmental policies on gas flaring and waste management.

Interviews with TOCs is important since their activities played a crucial role in how oil shapes Ghana's national and local economy. During the fieldwork in Ghana, interviews with Kosmos and Tullow discussed how energy security and climate change concerns influenced the activities of oil companies in Ghana, the impact of the TOCs in employment creation, technology transfer, transparency in their activities, their practice on gas flaring, adherence to good waste management practices and the relationship between local communities and the TOCs. Generally, data collected during the interviews included the impact of oil on industry and agricultural policy and development, employment creation, economic growth, technology transfer, environment and social life, FDIs, good corporate social responsibility and policies that are implemented to reduce the potential negative impact of oil on Ghana. Discussions with TOCs also highlight how and whether or not oil companies are helping to build local capacity.

On the issue of the impact of oil on governance, institutions and corruption, key informant interviews were conducted with CSOs such as Commission of Human Rights and Administrative Justice (CHRAJ), Ghana Integrity Initiative (GII), Integrated Social Development Centre (ISODEC), Centre for Democratic Development (CDD), and African Centre for Energy Policy (ACEP) to elucidate the impact of oil on such issues and whether there is transparency and efficiency in the use of oil windfalls. Issues that were discussed included the impact of oil corruption in Ghana, oil-related conflicts, transparency, accountability and efficiency in oil resource management and use, and level of community engagement in oil policy formulations and implementation. These CSOs have been critical of some the activities and policies of government and the oil companies, and their input shed light

on other dimensions of the impact of oil such as conflict, pollution and marginalisation of locals that the oil companies and government do not focus on in their reports. ISODEC, for instance, has published a paper on the impact of oil on fishing communities and this helped to understand the impact of oil on changes in local fish volumes, employment, incomes and poverty.

At Dixcove, a fishing community in the Western Region of Ghana, 80 semi-structured interviews were conducted with local fishermen, fishmongers and other community members. During the initial stage of the research, convincing the fishing community in Dixcove to participate in the research was problematic as they complained that similar researches were conducted in the area but has not benefited them. According to some of the fishermen, politicians and oil companies have always come to trick them with such studies. However, with the help of my research assistants who are residents of the locality, we explained to the fishermen/fishmongers that the study is purely for academic purposes and also promised that the results would be made known to them later. Indeed, despite the initial resistance from the fishing community, data collection for this study was relatively easier with the rural folks compared to the key informants as they are more willing to share their experiences, with the expectation that the researcher will serve as medium to carry their grievances concerning the impact of oil on their livelihoods to the TOCs and the national government.

The semi-structured interviews in the fishing community were used to explore the impact of oil on local incomes, employment, economic activities, poverty, oil-related conflicts, environment challenges that have emerged due to oil exploitation in the area and relationship between the fishermen or community and the TOCs. Some of the data was gathered through interviews with persons from the planning unit of the Regional Coordinating Council (RCC), Sekondi-Takoradi Metropolitan Assembly (STMA) Planning Department, and Enterprise Development Centre (EDC) in Sekondi-Takoradi in order to appreciate how oil is conditioning the local economies such as Dixcove. These interviews explore how the emergence of the oil industry is affecting the local economy such as impact of oil on local employment, income, provision of social services, poverty and infrastructural development since 2010. Discussing these local issues in relation to the oil industry has helped to understand how oil affects the national and local economy of Dixcove differently. The interactions helped to elucidate how local fisher folks think about marginalisation from employment in the oil industry, provision of alternative livelihoods and oil revenue allocation in Ghana. Local level interviews also allowed for exploration of other emerging themes such as the changing role of women in terms of assuming leadership positions in the families in the area (see Broom 2005; DiCicco-Bloom and Crabtree 2006). Issues concerning fishing restriction and declining fish stocks were also

discussed during the interviews. These interactions with the policy makers, TOCs, CSOs, and locals helped to elucidate how oil affects people and spaces differently.

4.7.3 Focus group discussion in Dixcove, Ghana

Focus group interviews were helpful to elucidate the impact of oil on fishing communities in Dixcove, Ghana as they allow fisher-folks to discuss their experiences and thoughts about the impact of oil exploration in a group setting. Focus groups are a method of collecting qualitative data by engaging a group to discuss issues (Wilkinson 2011). It is a technique that enables a researcher to use a group discussion setting to conduct interviews (Neuman 2011). It is a moderated discussion between groups of persons, brought together to discuss specific topics chosen by the researcher (Bedford and Burgess 2001, p. 121). An advantage of the method is that as different people are brought together to discuss an issue, it helps to explore differences in meanings (Conradson 2005) that research participants ascribe to a phenomenon. In organising a focus group, members of the group are supposed to be knowledgeable on the topic to be discussed. The groups are usually small and homogenous (people who share similar ideas or characteristics though there may be some differences), with a moderator who encourages open and free discussion (Neuman 2011; Marshall and Rossman 2006). The moderator needs to guard against domination of the discussion by a few members of the group.

Three focus groups were conducted in Dixcove, a fishing community in the Western Region, Ghana to discuss the impact of oil on the local communities. Each focus group was made up of between 10 – 12 people. The members of groups were selected from fishermen, fishmongers, traders and leaders of the fishing community who were willing to discuss their experiences of the impact of the oil in the community. Issues that were discussed included fishing restrictions due to oil exploration and how it impact fishing and the impact of oil exploration on local incomes, livelihoods, local employment, health, sanitation, and local infrastructure. In order to have a diversity of opinions and to encourage participation within the three focus groups, two of the groups were made up of the same sex (all men and all women group), while the third was a mixed grouping.

Separating the group discussion based on gender was necessary since economic activities undertaken by women and men differ. The impact of the oil industry on employment, incomes, and other economic activities can also be gendered. In rural settings, women can feel uncomfortable discussing issues openly with the men, hence the different grouping were used so as to create a congenial atmosphere for open and constructive discussion. Also, in patriarchal

societies that wrongly construct men as superior to women, combining them in a focus group can silence some female voices that can be critical in understanding the gendered dimensions of the impact of the oil industry such as how employment and incomes differ for men and women in local fishing communities. The third, mixed grouping (not same people in the homogenous groupings) was used to explore how both men and women conceptualise the impact of the oil on local income, employment, sanitation, education, conflict, and health within the mixed social setting. It brought out diversity of views, with the males' thoughts sometime challenged by the females and vice versa. These discussions were based on themes, guided by the researcher as a moderator. Moderation was essential to keep the discussions focused on the key issues that were important to the research questions.

The dialogic nature of focus group was beneficial in enabling participants to debate the impact of the oil sector in Ghana. This resonated with the idea that such an approach places persons or individuals in a group context, where conversations can flourish in social situations (Bedford and Burgess 2001, p. 123; Lunt and Livingstone 1996). The informal setting also encouraged members of the local fishing community to contribute to the discussions. Focus groups generated rich data within a short time (Neuman 2011; Silverman 2013b). And also, their conversational nature facilitated an understanding contested views such as whether or not local income was increasing or decreasing and whether the discovery of oil in the area can be empowering for the community since the locals are compelled to be creative and diversify their sources of employment and income.

Focus groups allowed for exploration of how experiences and social issues are negotiated and contested among research participants (Valentine 2001). For instance, though researchers can ask for clarifications of issues during personal interviews, it is not advisable contest respondents' claims during the process as it can discourage the interviewee from sharing further insights (Goss, 1996; Cameron, 2005). But in focus groups, the views of other participants are contested without them thinking that their knowledge is being challenged by the researcher (Bedford and Burgess 2001, p. 124). Challenging of each other's views helps the researcher to gain deeper understanding of issues, without directly getting involved, except to moderate the flow of the discussion. The socially-oriented nature of focus groups enable research participants to be understood in a more social setting. The dialogic format allows the researcher to explore unanticipated issues as they arise in the discussions. Focus groups are criticised for their inability to allow individual perspectives to come out more visibly as the group opinions can overshadow personal issues (Conradson 2005). In this study, this was partly solved by complementing focus group interviews with personal interviews. If not well chaired,

researchers can have less control over the discussion (Marshall and Rossman 2006), which can lead to discussion of irrelevant issues as against in for instance surveys where questions can be more focused.

4.7.4 Survey in the fishing community of Dixcove, Ghana

A survey was used to collect data from Dixcove as well to assess the impact of the oil exploration on local livelihoods, income, poverty and their relationship with oil companies and the government. Dixcove was chosen for the survey because it one of the immediate local communities that is impacted by the activities of the oil industry (Friends on the Nation [FON] 2013). The survey had both open and closed ended questions. The survey data is critical in validating the information gathered during the interviews and the focus groups.

Sampling is the process by which the researcher selects persons that represent or can have information that represent the population or the subject under study (Neuman 2011). Sampling is important during the research process since the researcher cannot select everyone, hence the need to have a subset of the larger population who are knowledgeable and willing share their experiences on the issues under investigation. Purposive sampling is suitable where a researcher is interested in a specific issue and has to locate specific persons that are considered expert in those issues (Silverman 2013a; 2013b; Neuman 2011; Babbie 1998; Grosof and Sandy 1985). With purposive sampling, research participants were selected based on knowledge of a population, the issue under study and the purpose of the study. It is subjective, non-probability and based on people's knowledge in the subject under study. Its non-representative nature makes it useful in selecting knowledgeable persons on an issue to gain a deeper understanding of it (Gobo 2008; Silverman 2013b).

One hundred and twenty-four persons were sampled for the survey. These people include fishermen, fishmongers and other community members whose livelihoods are affected by the fishing, fishing-related activities and the oil industry. Data that was gathered from the community related to whether or not oil exploitation has impacted local income; employment; women livelihoods; environment; fishing restrictions; oil sector training; marginalisation; and efficiency of government policy in the oil and gas sector. The survey was conducted with the support of three research assistants who helped the respondents to fill in the survey questions. This strategy was adopted since most of the research participants are 'illiterate' and cannot complete the questionnaires in the English language by themselves. The use of local language helped to explain the questions to the research participants where it was necessary. The

questionnaire or surveys were administered with the help of the research assistants which enabled me to ask respondents questions and to clarify issues. Because the survey was not distributed and later collected, but it was administered instantly, the researcher was almost able to retrieve all the questionnaire distributed. Questions on personal incomes were difficult to probe as respondents were unwilling to divulge their personal income or unable to calculate them accurately. Despite these few challenges, the surveys were vital in elucidating the impact of oil on local incomes, employment, fishing restrictions, oil-related conflicts and fishing community-oil company-government relations. Combining surveys with other methods such as interviews, focus group discussions and document analysis served as an important strategy for analysis of the impact of oil on Ghana.

4.8 Data analysis and interpretation

Data analysis and interpretation are critical component of the research process. The process involves reading, examining, coding, organising and interpreting data generated either manually or technologically. In data analysis, we explore how the data relate to the research objectives and theoretical perspective. Silverman (2013b; 2011) argues that data analysis goes on throughout the research process, from the conception and formulation of the research, data collection and final writing. It is a pervasive activity that is carried out during the entire research process (Silverman 2013a; 2013b). The process of data analysis includes immersion into the data, reduction, interpreting and reporting. Immersion is concerned with reading the data critically, reduction is carried out to discard irrelevant materials, interpretation involves making sense out of the data and the reporting entails presenting the research findings to readers. These processes allow the researcher to understand and evaluate how others interpret their social world, present themselves (and others) and social issues in their environment (Holstein and Gubrium 2011; Riessman 2011).

The data for this research was analysed by identifying common and divergent ideas, developing themes and relating them to existing themes and identifying the emerging ones. Descriptive statistics such as tables, percentages and graphs are used to analyse the survey data to illustrate changes in incomes, impact of oil on local employment, health, environment, and disruption in fishing and training opportunities in the oil sector. In data analysis, coding and development of themes can be undertaken either theoretically or empirically (Silverman 2013b; Kvale and Brinkmann 2009). Theoretical or concept coding is concerned with developing themes and categories from existing literature and relating them to the new setting (Graneheim

and Lundman 2004; Bos and Tarnai 1999; Elo and Kyngas 2007; Neuman 2011). In some cases, themes are generated empirically or inductively from the data collected on the field (Kvale and Brinkmann 2009). The analysis of the data for this research used both theoretical and empirical coding and themes.

Analysis of data is undertaken by manual methods, combined with other tools such Microsoft Excel. Data from document was analysed using existing themes that were used to illustrate the manifestation of the curse. The dimensions that were analysed to determine whether or not Ghana was experiencing them included: 'corruption', 'currency movement', 'conflict', 'institutions' and 'governance', 'decline of agriculture and industry', 'government borrowing', 'conflict' and 'environment'. Data and documents that were analysed included annual reports from the Ghana Statistical Service, Bank of Ghana, Ghana Government Budget Statement, Institute of Statistical and Social Research, and Transparency International's reports. Descriptive statistics such as graphs, tables, and frequencies were used to illustrate the impact of the oil on currency movement, GDP, FDIs flows, and changing fortunes of the agricultural and industrial sectors in Ghana since 2010.

Interviews and focus groups were also analysed manually. Manual analysis and interpretation was done by immersing myself into the interview data, reading and understanding them, developing themes and interpreting the data (Broom 2005; DiCicco-Bloom and Crabtree 2006). Focus group and interview data were analysed based on themes such as corruption, employment, incomes, governance, corruption, FDIs, industrial growth and agricultural development and to understand how research participants viewed them within the Ghanaian context in relation to the hydrocarbon industry. Additionally, new emerging themes such as 'efficiency' in the use of oil windfalls were also analysed. This approach was essential because as Silverman (2013b) argued, interviews enable respondents to talk about issues that are of interest or affect them, hence the need to analyse people's opinions critically. Interviewees' opinions give direct access to lived experiences of the people (Holstein and Gubrium 2011; Riessman 2011). The researcher's duty is to analyse these narratives as elucidating people's perceptions and experiences. The data analysis is guided by the understanding that one can attach multiple meanings to peoples' experiences (Holstein and Gubrium 2011). Thus, the stories on the impact of oil on Ghana's economy are treated as diverse. The accounts of interviewees are a plausible account of the impact of oil on the people of Ghana (see Silverman 2013a: 2013b).

Wilkinson (2011) recognised two approaches in analysing focus group data: content and ethnographic. Content analysis is undertaken by summarising the data gathered from the

field. It involves inspection of the data, looking for prevailing themes and integration of quotes from discussion into the writing (see Braun and Wilkinson 2003). Ethnographic analysis comprised interpretation and analysis of what transpired among the participants. This involves selection of peculiar aspects of the discussion and subjecting them to critical analysis and relating them to other theoretical perspectives and evidence. Data analysis includes looking for routine interactions and not essentially the 'extraordinary events', though those 'extraordinary events' are also important (Silverman 2013a). However, sometimes, focusing on extraordinary events will not help the researcher to understand the everyday events. Qualitative research is suitable for elucidating the 'taken for granted' experiences (Silverman 2013a) as research participants narrate their stories freely, presenting rich and diverse views. In data analysis and presentation, the researcher is ethically obliged not to misrepresent the views of research participants (Mullings 1999). To ensure trustworthiness and credibility of the research findings, data interpretation is undertaken through comparing research participants' accounts with the researcher's observations and other reports. In this research, the credibility of the finding is ensured through reflexivity, being self-critical and triangulation of different data.

4.9 Conclusion: triangulation and research credibility

The methodological processes undertaken to answer research questions are complex. It is prudent for researchers to be mindful of the strengths of each methodology, the researcher's situatedness, and to regard the research participants are partners in the research endeavour. The researcher also has to recognise that the data that research participants provided are not sacrosanct, hence the need to subject them to critical theoretical and empirical scrutiny. One distinctive feature of this research is the multi-scalar nature of the case and the need for movement across spaces to collect data. This was necessitated by the diverse nature of the research informants and the fact that the data was scattered across national and local institutions and respondents. Triangulation of diverse methodologies was necessary in order to present the diversity of views, increased the credibility of the data used to elucidate whether or not Ghana is experiencing dimensions of the curse.

5 Chapter 5: Differentiated national scale impact of oil, Ghana

5.1 Introduction

The resource curse has been the focus of various research and policy documents, especially on Africa. Using the dimensions of the curse as a criterion, this chapter assesses whether or not Ghana is experiencing a national scale curse. It analyses how a country's democratic setting, interacting with global actors and existing structures to mediate the impact of oil on national development. This analysis responds to the call for country-specific study in order to appreciate the problematic impact of natural resources on development (Boyce and Emery 2011; Collier 2010; Alexeev and Conrad 2009; Mehlum et al. 2006). Based on ANT perspectives on networks, enrolment, and association (Cressman 2009; Johannesson and Bærenholdt 2009; Latour 2005; Callon 1986), this study argues that the challenges associated with oil and development in Ghana are performed, produced and conditioned through interactions between a 'globalised assemblage' [state, TOCs, global initiatives, non-state actors such as CSOs, and local politics]. The impacts of oil can also be differentiated, and manifest unevenly across space, sectors and class. Ghana's experience with oil and development suggests a differentiated and non-deterministic relationship between natural resource windfalls and national development. It also illustrates how even in a democratic setting where a country is not experiencing a full-blown curse, the impact of natural resources can exhibit contradictory tendencies. For instance, in Ghana, election pressure, an essential element of democracy is implicated in the country's increasing debt, as oil-induced borrowing is used to finance increases in public sector pay, while simultaneously leading to improvement in social services to win electoral favour. The relationship between oil and development in Ghana demonstrates that the factors that mediate the impact of oil on development are multi-layered, spanning – global, national policies, politics and structures and local conditions, while the challenges associated with oil-based development (curse or blessing) is differentiated.

The rest chapter is divided into ten sections. The first section outlines the history of oil exploration in Ghana and global interest in the oil sector. Exploring the history of oil exploration in Ghana and government policies to attract FDIs into the sector enable us to appreciate how Ghana has placed a premium on oil exploration and efforts to develop the industry over the years. Section two examines how oil shapes the flow of FDIs into Ghana. It highlights why due to inadequate local capital and technical know-how, the country had to rely on FDIs to develop the hydrocarbon industry which also influenced how much the nation

obtains from oil since the country's share is based on contractual agreements with the oil companies. Section three analyses how much revenue has accrued to the government as a result of oil investment in the country and how it is utilised. The impact of oil on Ghana's economic growth and how the growth rate is differentiated across sectors of the economy is analysed in section four. Sections five to ten examine the impact of oil on public debt, currency movement, industry, agriculture, employment, and governance respectively. Finally, it concluded by advocating for a more pluralistic and contextualized analysis of the challenges that natural resources such as oil windfalls pose to development.

5.2 History of oil exploration and production in Ghana, 1896 – 2015

Ghana has a messy oil exploration history. Records from the Environmental Protection Agency [EPA] show that the search for hydrocarbon (oil) in Ghana dated to 1896, but it was following a discovery of an oil leakage in Half-Assini in 1986, a town in the Western Region, Ghana that drilling of wells began (Boateng 2008; Edjekumhene et al. 2010; EPA 2011; Obeng-Odoom 2014a; Obeng-Odoom 2013). Initial oil exploratory activities in Ghana failed due to poor geological data on the country. Despite the initial challenges, efforts by governments in the 1960s to explore for commercial oil in Ghana persisted. This appeared to have yielded some positive results in 1970 when Signal Amoco, discovered modest oil deposits offshore in Saltpond in the Central Region, Ghana (Asamoah 2013a; Asamoah 2013b). After an initial attempt to develop the Saltpond oil fields, Amoco relinquished its concession to Offshore Hydrocarbons Limited in 1976, which later entered into an oil development agreement with Agri-Petco, a US oil company (Asiamah 2011, p. 8). Oil production from the Saltpond field from 1978 to 1985 was only 3.47 million barrels (Edjekumhene et al. 2010, p. 9). Production of oil from the Saltpond filed was suspended in 1985. It seems due to the small quantity of oil discovered at the field, most investors doubted its economic prospects between 1978 and 1985. Besides the seeming limited economic prospects of the Saltpond fields, the institutional framework to guide oil exploration was weak or non-existent in Ghana during the period. In 2000, Saltpond Offshore Producing Company Limited (SOPCL) however, took over the operation of the field, investing in refurbishing and rehabilitation of the oil wells (Obeng-Odoom 2014a; 2013). The production capacity of the Saltpond field since 2000 is 600 barrels per day (bpd), and the field is estimated to have produced 182,413.6 barrels of oil between 2012 and 2013 (Integrated Social Development Center [ISODEC] 2014; MOFEP 2014). This

could not, in any way satisfy Ghana's energy needs and the country has relied on oil imports to meets its domestic and industrial power needs.

According to Obeng-Odoom (2014a), because of the messy nature of Ghana's oil exploration history, from the first discovery of oil in 1896 to date, one can analyse the development of hydrocarbon industry as loosely comprising of four (4) phases. Phase one spanned 1896 – 1969 where prospecting for oil was less successful due to poor geological data on Ghana's oil (Obeng-Odoom 2014a; 2014b; 2012). The period 1970 – 1984, phase two, differed from the earlier one as it witnessed commercial exploration of oil offshore in Saltpond and initial framing of the legal regime, including passing PNDC Law 64 (1984), and the formation of GNPC. Phase three, 1985 – 2000, was important for GNPC and Ghana's oil exploration as it was during this phase that GNPC acquired and interpreted 3D seismic data and successfully drilled three wells in South Tano (EPA 2011; Obeng-Odoom 2014a). In the 1980s, the Canadian Government, through Petro Canada International Assistance Corporation funded GNPC activities by equipping and training personnel for GNPC's laboratory and acquisition of 2D seismic data in the offshore Tano/Cape Three Points (Banful 2010, p. 70). The Government of Japan, also through a bilateral cooperation assisted GNPC to acquire offshore 2D seismic data 1987 (Banful 2010, p. 70). These seismic data helped further exploration activities of the TOCs since the 2000s. According to the EPA (2011), 2001 to date can be classified as the fourth phase of oil and gas exploration in Ghana. This epoch witnessed increased technological, political and legal changes in Ghana's oil industry. The technological advancement helped the GNPC to acquire 3D data and the period also witnessed a major shift from shallow-water to deep-water drilling (EPA 2011) and intense global interest. Deepwater drilling offshore led to the discovery of the Jubilee field in 2007.

Apparently, while hydrocarbon exploration in Ghana started in 1896, establishing the essential institutions to guide the sector came later. It was the Provisional National Defence Council (PNDC) government in 1987, which considered energy as key to national development, which established the framework and formed the Ghana National Petroleum Corporation (GNPC) to embark on petroleum exploration in 1987. PNDC Law 64 (1984) established the institutional and legal framework for oil exploration and production (Amoako-Tuffour 2010; Banful 2010) and gave statutory backing to the GNPC (ISODEC 2014). The Petroleum Income Tax Law (PNDC Law 188) of 1987 also specifies how petroleum revenues are shared (Boateng 2008). Passage of PNDC Laws 64 and 84 marked the beginning of a comprehensive effort to develop legal frameworks for exploration of oil in Ghana.

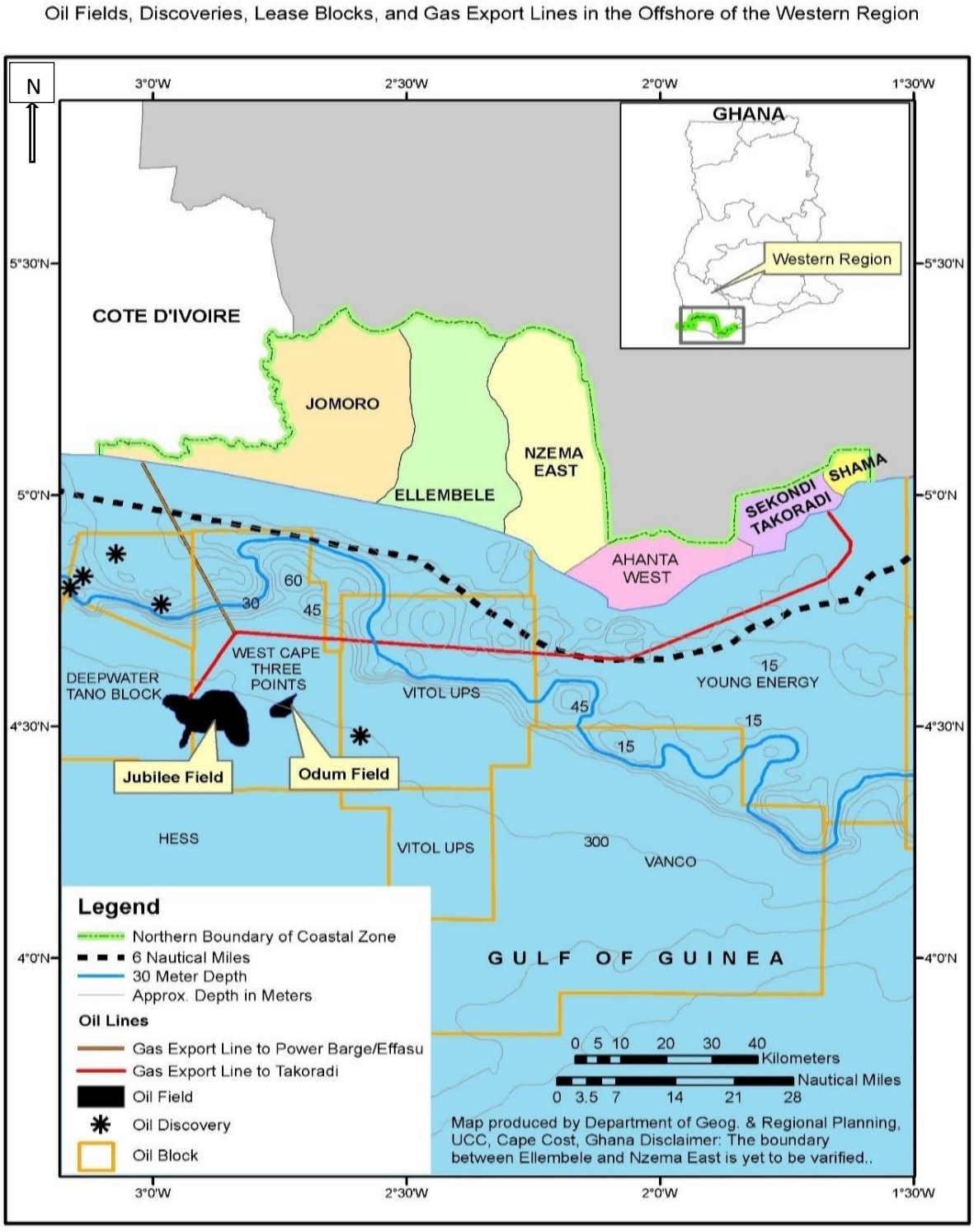


Figure 5:1 Oil fields in Ghana, 2014

Based on the legal and regulatory framework established in the late 1980s and the liberalisation of the oil sector in the 2000s, there was increased oil exploration offshore on the Western Coast of Ghana between 2000 and 2007 (Asamoah 2013c). The government since 2000 has insisted

that GNPC remained focused on commercial exploration of hydrocarbons (Banful 2010), while private oil marketing companies (OMCs) like TOTAL and Ghana Oil Company (GOIL) focus on oil import and distribution on the local market.

The GNPC, which is supposed to lead Ghana's oil exploration has technical and financial challenges, and has to rely on TOCs. Exploratory activities by a consortium of TOCs comprising Tullow, Kosmos, Anadarko, Sabre Oil, EO Group and GNPC discovered commercial oil at Deepwater Tano and Cape Three Point in September 2007 (figure 5.I). The discovery in Deepwater Tano is named 'Jubilee Field' [Jubilee] as it coincided with Ghana's 50th (Golden Jubilee) Independence celebration. It is referred to as the 'great discovery' in Ghana (Asamoah 2013b) since oil and gas exploration offshore in Ghana intensified in the wake of the Jubilee find. There was also a 'mad-rush' for new exploration blocs and existing actors intensified their exploratory activities after the Jubilee discovery (Edjekumhene et al. 2010). Jubilee straddles two blocs in the deep Atlantic waters offshore from Western Ghana, approximately 63 kilometres from the coastline and 132 kilometres southwest of Takoradi (Boateng 2008; EPA 2011). Jubilee is described as one of the single biggest oil discoveries in West Africa in the past 10 years, worth about 3 billion barrels of recoverable oil (Asamoah 2013b). The Jubilee discovery is a result of cumulative activities of GNPC over the years through seismic data gathering that assisted oil companies to understand the geology of Ghana and involvement of new transnational oil companies such as Kosmos and Tullow, promoted by the New Patriotic Party (NPP) government (2001 – 2008). Bridge and Le Billion (2013, p. 52) refer to such TOCs as 'independent' upstream producers, most venturing into new oil frontiers, and are ready to explore in high-risk areas (in terms of limited prospects of a major find), that are traditionally not on the radar of the major oil companies such as Shell. The NPP is however, criticised for offering generous contracts to the oil companies (Banful 2010). Increases in crude oil prices in the 2000s and improved exploratory technologies also encouraged the 'independent' oil companies to invest in deep-water exploration, especially offshore in the Gulf of Guinea (Ghazvinian 2007; Shaxson 2008).

Development of Phase 1 of Jubilee consisted of drilling 9 production, 5 water injection and 3 gas injection wells. Oil and gas produced from Jubilee is gathered through a network of subsea wells and sent to a Floating Production Storage and Offloading (FPSO) vessel [named 'FPSO Kwame Nkrumah' after Ghana's first president]. FPSO is a ship-shaped hydrocarbon processing facility that separates and stores crude oil and natural gas (Edjekumhene et al. 2010). About US$2.7 to US$4 billion was initially invested in Phase 1 of the field, but the total

cost is estimated to be US$6.5 billion (ISODEC/Oxfam 2009). The FPSO Kwame Nkrumah has a storage capacity of 2 million barrels of oil, can process 120,000 barrels per day (bpd) of oil and 30 million cubic feet of associated gas (Edjekumhene et al. 2010, p. 9). Though the gas from the Jubilee field was initially flared, it is currently being transported to Atuabo Gas Processing Plant in the Western Region, Ghana. According to IMF initial estimates, Ghana is to earn US$1 billion dollars in oil revenue per year (Gary 2009, p. 18; World Bank 2009; IMF 2009) based on Ghana's 10% stake in the Jubilee field, royalties and taxes. Phase 2 of the Jubilee Field involves development of the Twenboa, Enynra, and Ntmme (TEN) Project which is supposed to pump its first oil in 2017. It estimated that the cost of developing TEN, excluding the FPSO is US$4.5 billion dollars. Tullow submitted the Plan of Development for the TEN Project in November 2012 (Tullow 2012). The FPSO design for TEN was completed in 2012 and it is supposed to be delivered by the end of 2015. Production capacity of the TEN FPSO is 80,000 barrel of oil per day with a flexible design allowing for potential future expansion (Tullow 2012). Examining the history of hydrocarbon in Ghana helps us to appreciate how the discovery and development of oil in country can be viewed as an 'assemblage' (Latour) and 'enrolment' (Crawford 2005) of heterogeneous actors: non-human actors (oil), technology, ideas (energy and clime discourses), capital, state national politics and institutions, TOCs, CSOs interacting with local politics and conditions.

5.2.1 Oil and global interest in Ghana's political economy

Ghana's integration into the global economy is not new since the country has been exporting gold and cocoa to other parts of the world for many years. For instance, the neoliberal turn in the 1980s encouraged countries, including Ghana to open their economies to global trade and the private sector. Liberalisation of the Ghanaian economy seems to have contributed to the global interest in the country's oil industry, as more TOCs invested in the sector. Oil however, seems to be reinforcing and redefining the country's global integration due to the status of oil as a major source of energy for fuelling the world economy. Global interest in Africa's oil has focused on Nigeria, Angola and Libya as they are the leading producers on the continent. Since the 1990s and 2000s however, there is an increasing realisation by oil importing countries, like the US, that exclusively relying on traditional oil producers in the Middle East and the dominant oil producers in Africa such as Nigeria will be problematic for global energy security due to conflicts in those places. After 9/11 for example, US President Bush became concerned as to how to ensure American energy security. The Bush government formed the National

Energy Policy Development Group (NEPDG), chaired by Vice-President Cheney with an obligation to examine strategies on how the US could diversify its energy source and ensure its security (McCaskie 2008, p. 316 – 317). NEPDG submitted its report in May 2001 and this guided Bush's National Energy Policy (NEP) (named the [Cheney Report]). The Cheney Report advocated for new initiatives for exploiting oil reserves outside the Middle East (McCaskie 2008, p. 316). Subsequent to the Cheney Report, the 2002 gathering in Washington founded the African Oil Policy Initiative Group (AOPIG) which went on to produce another report, recommending that the 'New Gulf' – the Gulf of Guinea – be declared 'a zone of vital interest'. The AOPIG proposed that the US establish an autonomous military command for Africa (Holt 2007). McCaskie (2008) therefore, argued that the US-Ghana security relations discourse under the African military command (AFRICOM) is being underpinned by the US energy security concerns. African oil was classified as an American national security priority, since the Persian Gulf was gradually becoming unreliable (McCaskie 2008, p. 316). The US-Africa Energy Association, comprising BP, Chevron Texaco, Kerr-McGee, Marathon, Shell and Anadarko (operating in Ghana) (Montague 2002; McCaskie 2008) were to lead US energy security needs. US interest in Ghana's oil is championed by its TOCs (e.g. Kosmos).

China also has a vested interested in Ghana's oil. In order to secure its share of Ghana's oil, China has advanced loans for energy development projects such as the Bui Dam and other infrastructure developments (Rupp 2013). Trade relations between Ghana and China increased by 27% in 2010, reaching US$2 billion dollars (Rupp 2013). Indeed, it is now estimated that the value of trade between Ghana and China is US$ 5.6 billion at the end of 2014, making Ghana one of the leading China's Africa trading partner[1]. Interestingly, this is happening at a time Ghana is in an 'oil boom'. China International Petroleum Corporation (SINOPEC) led the consortium that constructed Ghana's US$1billion dollar Gas Processing Plant that became functional in March 2015. Unlike the Euro-American states which mostly work indirectly to support private companies from their countries, China's engagement with Ghana is conducted largely via state owned companies (Rupp 2013). The way the Chinese state operates has led some researchers to argue that the Chinese state manoeuvres its political and economic strengths against private enterprises jockeying for positions in the oil industry (Mohan 2010; Mohan and Lampert 2013; Obeng-Odoom 2014a, p. 51 – 52). Some also refer to the manner the Chinese state works through existing structures using a resource diplomacy approach in

[1] http://www.myjoyonline.com/business/2015/July-4th/ghana-china-trade-exceeds-5-billion.php (accessed on 4th July 2015).

Africa as 'flexigemony' (Carmody and Tylor 2010). There are concerns of inadequate transparency in the Ghana government dealings with China, and that the Chinese government influenced their Ghanaian counterpart to mortgage oil to access loans, especially the US$3billion Chinese loan facility secured in 2011 (Mohan 2013; Rupp 2013). There is also interest in Ghana's oil industry from multinational companies from South Africa, Brazil and Italy. The next section examines how FDIs integrated Ghana into the global economy, how the integration has been deepened by the oil and gas industry and its implications for the country's socio-economic development.

5.3 Oil and foreign direct investments (FDIs)

Earlier analysis of the resource curse was silent on the importance of natural resources in attracting FDIs into a country and how these FDIs impact a country's development. Probably, discussions on the resource curse was mute on FDIs because in the 1970s and 1980s when the curse became prominent in academic and development research, the role of FDIs in national development was not emphasised, especially in Africa. Since the late 1990s and 2000s however, FDIs have come to be seen as important in promoting economic development. There is also a recognition by African governments that with good policies, FDIs can promote economic growth and create employment for recipient countries, while foreign companies also get a good return on their investments (ODI 2006; UNCTAD 2012). According to UNCTAD (2012), privatisation and policies that guarantee good returns on investments promote FDIs inflows. In the case of Ghana, the government since the 2000s has emphasized the country's stable political environment and tax exemptions to attract investors into the country's natural resources sector.

In order to better appreciate why natural resources, especially oil, are critical in attracting FDIs into Ghana, the country's case has to be situated within the African context. The inflow of FDIs has fluctuated over the years. Despite increases in natural resource related FDIs into Africa in recent years, its inflow into the continent for instance, dropped by 9% in 2010 to US$55 billion, making Africa's share of total global FDIs inflows only 4.4% in 2010, down from 5.1% in 2009 (UNCTAD 2011). The continent's share of total global FDIs increased to 5% in 2012 (UNCTAD 2013). Because of the important role of oil in powering the global economy, it has been one of the mechanisms of attracting FDIs into African (Huber 2011). While investments by TOCs in new oil frontiers can help to meet increasing global energy demands, the African countries also earn foreign exchange from the export of their

natural resources, like oil. The new wave of offshore deep-water oil exploration activities in Africa has been made possible by advanced technologies. High demand for natural resource, including oil from the US, the EU and recently, the BRICS (Brazil, Russia, India, China and South Africa (see Carmody 2013 for discussions on the BRICS) is fuelling investment in the oil sector in Africa. For Ghazvinian (2007), this is a new scramble for untapped oil in Africa. Investments in natural resources' sectors is one of the main channels through which African countries, including Ghana attracts FDI into their economies. To appreciate how oil has been vital in the increase in FDIs into Ghana, we must first examine the history of FDIs in the country, and how this shaped the country's integration into the global economy.

5.3.1 Trends in foreign investments in Ghana

Understanding the trend of FDIs into Ghana over the years will help us to appreciate how recent oil discovery mediates the volume of FDIs the country is experiencing now. Small foreign investments in Ghana (formerly the Gold Coast) date back centuries. Foreign investments in Ghana varied, with some directed at manufacturing (Tsikata et. al 2010; Tsikata et al. 2008), but most often, FDIs have concentrated in the mineral sector. In the 1970s for instance, FDIs were concentrated in gold mining, with only a little amount directed to manufacturing (Tsikata et al. 2008). According to UNCTAD, annual flows of FDIs into Ghana went as high as US$68 million in the early part of the 1970s, declined to zero in the late 1970s, but increased marginally in the mid-1980s to US$5 million (UNCTAD 2003). Investment trends changed when Ghana adopted the Economic Reform Programme (ERP) in 1983. The ERP facilitated Ghana's transition into a market-based economy. Implementation of the ERP increased FDIs share of capital formation in Ghana between 1980 and 1992 (Boateng and Glaister 1999).

FDIs flow into Ghana was sluggish in the late 1980s and mid-1990s, though the country was still considered one of the front runner FDI destinations, ranked among the top 10 investment destinations in Africa (UNCTAD, 2003). The increase in FDIs, it seemed was the result of the adoption of economic liberalisation policies and laws in 1986 which attracted investment in the natural resource sector (Asiedu 2002). Investor's response to the 1986 mining law and policies was positive, resulting in a surge in investment in minerals, similar to a 'gold rush' (UNCTAD, 2003). During the same period in the 1980s, the divestiture programme, a policy initiative that involved sale or privatisation of state owned industries encouraged foreign participation through management contracts. Although the aim of the divestiture programme in the 1980s was to improve efficiency in the industrial sector, through foreign partnerships

(Afriyie 1988), most of the companies collapsed due to inadequate capital investment, poor management and their inability to compete with cheap imports (Appiah-Adu 1999).

In 1994, Ghana sold Ashanti Goldfields Corporation (AGC), one of the country's prize assets in a deal considered one of Africa's largest privatization initiatives, placing Ghana in the spotlight of international investment (GIPC, 2000). Due to the privatisation of AGC, FDIs increased to US$233 million in the mid-1990s (GIPC 2000; UNCTAD 2003). There was FDIs flows also into the service sector in Ghana, especially banking and telecommunication. Indeed, the emergence of a middle class fostered the growth of FDI in services such as banking, retail and telecommunications (UNTAD 2012, p. 41). After 1996, FDIs flows into Ghana declined, and the country was only among the top 20 FDI destinations in Africa (UNCTAD, 2003). It appeared deteriorating economic conditions in the late 1990s deterred inflows of new FDIs. Rapid depreciation of Ghana's currency (the cedi) which can negatively affect the value of profit and high interest rates which made local capital expensive also made investment in Ghana unattractive. In 2001, the New Patriotic Party (NPP) introduced policies to restructure Ghana's economy, including opting for the Heavily Indebted Poor Countries (HIPC) initiative, leading to some debt cancelation for the country. Stability in the Ghanaian economy resulted in improvement in FDIs flows into Ghana 2001. FDIs inflows as a percentage of gross fixed capital formation in Ghana was 16.1% in 1999, declined to 9.6% in 2000, further decreasing to 7.1% in 2001 and 4.0% in 2002 (UNCTAD, 2003). In 2007 and 2006, FDIs share of fixed capital in Ghana increased to 16.14% and 15.23% respectively (UNCTAD 2008). FDIs into Ghana is described as resource-seeking, since most of it is directed at the natural resources like oil (Tsikata et al. 2010).

5.3.2 The quest for new oil frontiers: oil and FDIs in Ghana

FDIs flow into Ghana as indicated, fluctuated over the years, but it increased since 2006. Interactions with policy makers in Ghana and data from UNCTAD show that the discovery of oil in commercial quantities in 2007 is influencing the flow of FDIs into Ghana. Flow of FDIs into Ghana increased from US$636 million to US$855 million dollars in 2006 and 2007 respectively (UNCTAD 2009). It further increased to US$2.1 billion dollars in 2008, US$2.9 billion dollars in 2009, before dipping to US$2.5 billion dollars in 2010, but it further increased to 3.2 and 3.3 billion in 2011 and 2012 respectively (UNCTAD 2011; 2013). The increasing trend in FDIs flow into Ghana coincided with oil exploration and production in Ghana. From as low as US$319 million in the 1990s to US$1.5 billion in 2000, FDI inflows into Ghana

increased to as much as US$16.6 billion in 2012 (UNCTAD 2013, p. 220), driven mostly by oil investments by Tullow, Kosmos and other oil companies. Beside a conducive political environment, four economic factors are identified as key determinants of the attractiveness of an economy to FDIs (UNCTAD 2011). These include the availability of cheap labour and skills, good infrastructure, market, and the presence of natural resources.

Ghana and Nigeria, the two largest recipients of FDIs in West Africa experienced contrasting fortunes in 2010. Inflows into Ghana increased significantly, but declined in Nigeria due unresolved political challenges in the Niger Delta and a petroleum industry bill which was perceived as unfavourable to the TOCs (UNTACD 2011, p. 41). The growing oil industry represented is a major driver for Chinese FDIs into Ghana (Tsikata et. al 2010; Tsikata et al. 2008). Also, according to UNCTAD (2013), TNCs from developing countries are active in Africa, building on a trend in recent years of a higher share of FDI flows coming from emerging markets. It appeared the start of new oil production in Ghana has attracted the interest of TNCs, some of which are seeking an alternative sub-regional source of investment into the oil industry to Nigeria's oil industry which is dominated by Shell.

In 2011, Nigeria, South Africa and Ghana were the leading recipients of FDIs in Africa (UNCTAD 2012). Investment in Ghana is mainly attributed to investments in the oil sector by multinational oil companies and China (UNCTAD 2012, p. 39; Bank of Ghana [BOG] 2012). The 2011 figure is an increment over the US$2.8 billion received in 2010 (UNCTAD 2011). Mining and petroleum were the leading attraction for FDIs in Ghana in 2011, though there have been sizeable investments in the services sectors especially banking and telecommunication (UNCTAD 2012, p. 40). About US$4 billion was invested in the Jubilee Field between 2007 and 2010 (Quinn 2013, p.6; Tullow 2013). Attraction of FDIs into Ghana in 2012 is attributed to high commodity prices, strong economic growth and economic reforms that have improved investor confidence in the economy. For instance, FDIs inflows constituted the equivalent of 36% (US$ 5,755 billion) of Ghana's GDP (US$ 16,004 billion) in 2008, an increase of 115% from 2002 (UNCTAD 2009).

Investments by foreign companies and government have impacted the Ghanaian economy in several ways. It was projected that Ghana will earn US$1 billion a year in revenue from oil production in the Jubilee Field (World Bank 2009) though the actual revenue since 2011 has varied as indicated in table 1. The country earned US$444.2 million in 2011 and US$541.07 million in 2012. It was only in 2014 however, that Ghana earned almost US$ 1 billion dollars (BOG 2015). Besides the Jubilee field, the TEN (Twenboa, Enynra, and Ntmme) Project is expected to produce its first oil in mid-2016 (Tullow 2012). The development of the

TEN Project is supposed to inject about US$6 billion dollars into the Ghanaian economy between 2011 and 2017 (Tullow 2014). In 2013, US$1.2 billion dollars was spent on the TEN Project in Ghana (Tullow 2013). Tullow's expenditure on local suppliers also increased by 85% to $128 million (Tullow 2013), creating some employment opportunities in Ghana.

The oil industry since its inception has also triggered other investments into Ghana's economy. Ghana in 2014 has allowed Lonrho Ports Limited and Atuabo Freeport Ghana Limited to build and operate an estimated US$$600 million dollars Freeport in the Western Region, Takoradi oil and gas enclave with a tax exemption for 25 years[2]. This joint venture port project in Atuabo between the Ghana Government and the private sector is to provide logistics services for Ghana's oil and gas industry and the West Africa sub-region[3]. Also, due to the discovery of oil, a US$1billion dollar Gas Processing Plant has been built by Ghana Gas Company (GGC) in partnership with China Petrochemical Corporation (SINOPEC) to process gas from the Jubilee Field for commercial and domestic use (GGC 2015). The Gas Processing Plant is supposed to produce 107 million cubic feet of gas per day and 500 tons of Liquefied Petroleum Gas (LPG) per day. This is important because the LPG to be produced as a by-product is about 75% of Ghana's demand of 240,000 tons per year and is estimated to generate half a billion dollars per year of revenue for Ghana (Opoku 2015)[4]. The president, in 2014 described the Atuabo Gas Processing Plant as the 'game changer' for Ghana's struggling economy as it could reduce its dependence on petroleum imports for energy generation and ensure macroeconomic stability in terms of reducing pressure on foreign exchange, although this is yet to happen. What this study highlights is that, based on the projects that are being undertaken in Ghana as a result of oil exploration and production, oil has shaped the flow of FDIs into Ghana, not only in the oil and energy sector, but other sectors of the economy. Ghana is also one of the best FDIs destinations in Africa due to its relative stability and this seems to fit into Tullow's strategy of exploration-led growth (Quinn 2013). Increased inflows of FDIs into Ghana since 2011 has increased government revenue and created some employment for those who are employed directly by the oil companies and other non-oil related activities such as waste management services. Yet, it is must be noted that progress for some does not mean progress for all. And similarly, positive impact of FDIs does not mean everyone is affected

[2] http://www.energymin.gov.gh/?p=2494 (accessed on July 23 2014).
[3] http://ghanaoilwatch.org/index.php/ghana-oil-and-gas-news/3578-parliament-approves-600-million-us-dollar-oil-and-gas-freeport-project (accessed on 16/06/2015).
[4] http://news.peacefmonline.com/pages/news/201408/210200.php (accessed on 15/06/2015), Opoku, E. 2015, Daily Guide, Ghana.

positively, as for instance the Atuabo Freeport Project has been subject to resistance from local businesses that thought the project should have been given to Ghanaian businesses. The importance of FDIs should not be measured just based on the volume of FDIs into a country, but whether or not this translates into improvement in the living conditions of the people.

As to whether or not Ghana will benefit positively from investments in the hydrocarbon industry depends on how it utilises the oil revenue and its ability to formulate and implement practical policies that will ensure that Ghanaian businesses and enterprises take an active part in the sector. Ghana's local content policy, specifies that as much as practicable, local resources are utilised in the oil sector and also local people are trained to participate in the industry. The policy is however, criticised for lack of detail on how locals will be involved in the oil sector (ISODEC 2012). For instance, concerning procurement in the oil sector, the petroleum agreement under PNDC Law 84 emphasises that in the acquisition of plant, equipment and supplies, contractors should give preference to local products, including shipping services provided by vessels owned or controlled by Ghanaian companies, if such services and products meet acceptable international standards and supply prices, grades, quantities, delivery dates are comparable to those supplied from outside Ghana (ISODEC 2012, p. 4). But issuing blanket policy statement, but with weak enforcement mechanism can provide a loophole, TOCs can refuse to procure local goods and services with an excuse that such local goods do not meet industry standards. On the issue of oil revenue and how it is utilised, we need to know how much oil revenue has accrued to that government since 2011, what are the important socio-economic needs of the country, and whether or not investing oil revenues in those areas can lead to a structural transformation of the economy. The next section therefore, examines how much revenue has accrued to the government and how it is utilised.

5.4 Oil revenue accruing to Ghana and how it's utilised

To assess the impact of oil on Ghana's economy, it is important to analyse the oil revenue that accrues to the government and how it is utilised. Total oil revenue and how it is spent provides us with ideas on the plausible impact of oil on national development and people's livelihoods. How much revenue accrues to government is based on the contractual agreements between the government and oil companies and the country's petroleum tax regime. The impact of natural resources on development in a country is also partly dependent on contractual arrangement as this determines how much windfalls the country earns. In effect, although how and where petroleum revenue is spent in the economy is vital, what accrues [amount of revenue] to the

government is equally critical. Ghana's share of petroleum revenue [State Take] is based on its participation interest of 10% (for Jubilee field), petroleum income tax which is currently set at 50% maximum though can be altered based on the contract (Jubilee's tax rate is 35%), and 5% - 12.5% royalty on gross crude oil produced (Amoako-Tuffour and Owusu-Ayin 2010). Ghana's fiscal regime is critiqued for weak mechanisms to monitor projects and investment cost, though these costs shape how much taxes are paid to the state (ibid.).

Ghana's Petroleum Revenue Management Act (PRMA) 2011, (Act 815), is the framework that guide how windfalls from oil is distributed and spent across sectors of the economy. The formulation of the PRMA was informed the practices and experiences of other oil rich economies such as Norway and Nigeria. The curse that Nigeria experienced is attributed to mismanagement of oil windfalls to the benefit of the general populace, the inability of the country to save and invest windfalls for future use when oil prices decline. To avoid the challenges that Nigeria faced, Ghana as part of its PRMA established the Ghana Petroleum Funds; the Ghana Stabilisation and Heritage Funds, where part of the oil windfalls is saved for the future use. The Ghana Stabilisation Fund is to cushion the impact on or sustain public expenditure capacity during periods of unanticipated petroleum revenue shortfalls, while the Ghana Heritage Fund provides an endowment to support development for future generations when petroleum reserves are depleted (Ghana Government 2011, p. 7 – 8). The establishment of the funds are informed by Norway's Sovereign Wealth Fund (SWF) (Reiche 2010). The Norwegian government and the World Bank provided human, financial and technical support in the drafting of the petroleum management law (World Bank 2009; Heum 2008). Ghana's PRMA that informs how the country oil revenue is used was produced through an 'assemblage' (Latour 2005; Law 1999) of ideas, practices, experiences, actors and institutions.

Transparency has been emphasized in Ghana's Petroleum Revenue Management Act (PRMA) since it can help to check mismanagement and corruption in the use of oil windfalls. Section 48 of the revenue management law, 2011 (Act 815) makes it mandatory that the government, discloses to the public revenues and economic values that are obtained from the oil and gas sector (Ghana Government 2011; Pamford 2010). The annual petroleum sector supplementary report that is prepared by the Ministry of Finance and Economic Planning (MOFEP) each year also outlines in detail government petroleum receipts and expenditure outlays (Ghana Government Petroleum Reconciliation Report 2011; 2012; 2013; 2014). Ghana's oil revenue (comprising 10% participation interest plus taxes) is allocated to the sectors of the economy based on a formula outlined by parliament. Based on the PRMA, parliament in 2011 approved that a 40% share of Ghana's oil revenue should be allocated as

'participating interest and equity financing costs' [GNPC's contribution to the development and operation of the oil fields] for GNPC and 60% for the government. The sharing formula also specified that out of the total petroleum receipts (the 60%) for government from taxes, royalties and profits, 70% is allocated for Annual Budget Funding Amount (ABFA), while the 30% is transferred into Ghana Petroleum Funds – Ghana Heritage Fund and Ghana Stabilisation Fund – (MOFEP 2014). This is to ensure that while some of the oil revenue is used for current developmental needs, some is reserved to meet the needs of future generations through investment in a heritage fund. This revenue distribution arrangement proposed in 2011 ended in 2013 and parliament approved a new proposal in 2014 that reduced GNPC's share for participating interest to 30% from 2014 – 2016. GNPC's share was reduced by parliament to make more oil windfalls available to fund government development projects. Parliament's ability to easily vary the petroleum revenue allocations have been criticised since it can be abused by a ruling government with a parliamentary majority to divert oil revenue into consumption instead of investment in infrastructure (Interview, GNPC, July 2014).

The amount realised from oil is allotted to specific areas as outlined by parliament as a form of an Annual Budget Funding Amount (ABFA). In 2011, parliament outlined four priority areas that oil revenue should be allocated to. These areas included: expenditure and amortization of loans for oil and gas infrastructure; road infrastructure; agricultural modernization; and capacity building. The prioritised areas are however subject to change based on the country's needs. Specifying priority areas is to ensure a more systematized approach to using oil revenue and to prevent misappropriation. Table 5.1 shows that expenditure for the priority areas in 2011.

Table 5:1:Expenditure of 2012 ABFA on the four priority areas

Priority areas	**Amount (GH₵)**
Expenditure and amortisation of loans for oil and gas infrastructure	100,000,000
Agriculture modernisation	72,471,824
Roads and infrastructure	232,403,269
Capacity building (including oil and gas)	111,959,738
Total	**516,834,831**

MOFEP, 2013

The data (table 5.1) indicates that of out of the 2012 ABFA, GH₵100.00 million (19.3%) was used for payment of loans on oil and gas infrastructure, GH₵72.47 million or 14% was invested in the agriculture sector, GH₵232.40 million or 45% on infrastructure (roads), and GH₵111.96 million or 21.7% went into capacity building. Thus, in 2012 over GH₵ 500 million Ghana Cedi

was disbursed to finance projects based on the priority areas. Devoting oil revenues to these prioritised areas was meant to maximise the impact of oil revenue. Yet, no social cost benefit analysis was done by the government to understand whether or not investing oil revenue in these areas was the best option. The government was also noted to have diverted some of the oil revenue to public safety and office of government machinery in 2011, violating the requirement that 70% of the ABFA is spent on public investment as specified under section 21 (4) of the PRMA (Public Interest and Accountability Committee [PIAC] 2012; 2014).

Disbursement and expenditure of oil revenue for 2013 was more or less similar to that of 2012. The ABFA received and disbursed is shown in table 5.2 below.

Table 5:2: Expenditure of 2013 ABFA on the four priority areas

Priority areas	**Amount (GH₵)**
Expenditure and amortisation of loans for oil and gas infrastructure	137,920,847
Agriculture modernisation	13,604,329
Roads and infrastructure	372,074,147
Capacity building (including oil and gas)	20,183,359
Total	**543,782,682**

MOFEP 2014

A total of GH₵543.78 million (US$273.20 million) ABFA was disbursed to the four priority areas in 2013. Expenditure and amortization of loans for oil and gas infrastructure received GH₵137.92 million or 25.4%, agriculture modernization received GH₵13.60 million or 2.5%, roads and other infrastructure was allotted GH₵372.07 million, representing 68.42%, and GH₵20.18 million, representing 3.71% went into capacity building. Again, a cursory examination reveals that allocation of oil revenue to agriculture in 2013 was marginal. The limited allocation of oil revenue to the agriculture sector seems to reinforce successive governments' inadequate support for agriculture as a whole (except cocoa farmers who receive some fertilizer support due to the importance of the sector in foreign exchange earnings) although farming serves as a major source of livelihood for rural communities in Ghana.

Table 5:3: Expenditure of 2014 ABFA on the four priority areas

Priority areas	**Amount (GH₵)**
Expenditure and amortisation of loans for oil and gas infrastructure	163,084,572
Agriculture modernisation	170,624,180
Roads and infrastructure	215,691,357
Capacity building (including oil and gas)	-
Total	**549,400,109**

MOFEP 2015

Allocation of the 2014 ABFA was allocated to three priority areas: loan payment, agriculture modernisation and infrastructure, as shown in table 5.3. The expenditure on loan payment was devoted to payment to the China Development Bank (CDB). CDB-related allocation of US$279.06 million (GH₵613.92 million) was used for the payment of the Bui Dam project and counterpart funding for the US$3 billion infrastructure loan granted in 2010, while expenditure for non-CDB related projects was US$130.02 million (GH₵286.04 million). The 2014 annual report on petroleum funds shows that expenditure on road and other infrastructure received GH₵215.6 million, agriculture modernisation received GH₵170.6 million and expenditure and amortisation of loans for oil and gas infrastructure had GH₵ 215.6 million (MOFEP 2015, p. 9) as shown in table 5.3. In 2014, the government used most of the oil revenue for the payment of loans, suggesting that limited oil revenue was available for other development initiatives in the country. No allocation was also made for capacity building for the oil and gas sector.

Ghana has received a sizeable amount of revenue from oil from 2011 to 2015 (table 5.4). Although initial estimates by the IMF (2009) suggests the country will earn about US$1 billion dollars from oil windfalls per year (Gary 2009; IMF 2009), the actual earnings has been less since 2011. For instance in 2011, Ghana received US$444.2 million dollars from oil revenue, this increased to US$978.8 million dollars in 2014, suggesting an upward trend in oil revenue for the country (ISODEC 2014; MOFEP 2012). The shortfall as compared to estimated revenue is due to the inability of the Jubilee field to produce the estimated 120,000 bpd and fluctuations in world petroleum prices. In 2015, the revenue from oil declined to US$396.2 million. The overall petroleum revenue declined by over 59.53% in 2015, compared to 2014, mainly due to fall in crude oil prices on the world market (MOFEP 2015).

Table 5:4: Oil revenue to government, 2011-2014 (million GH¢ and US$)

Year/revenue	2011	2012	2013	2014	2015	Total, 2011 - 2015
Oil revenue (GH¢)	690.2	979.32	1645.59	2774.92	1449.92	3207.57
Oil revenue (US$)	444.2	541.07	846.77	978.89	396.2	7540.00
% of Total revenue	6.4	5.7	5.5	5.7	5.00	5.00

ISOEC 2014; MOFEP 2011 – 2015

Given that Ghana is supposed to receive about US$1 billion in oil revenues, there is a question as to whether or not this is significant to impact the national economy or manifestation of the curse. In analysing the curse however, one has to look beyond the revenue alone, and

examine how the hydrocarbon industry shapes other sectors of the national economy such as employment, energy and industry. To appreciate how oil windfalls can be important for Ghana's economy, one has to situate the value of oil in situation where the government in 2014 sought a US$918 million bailout from the IMF to address its balance of payment challenges, restore debt sustainability and macroeconomic stability, and strengthen foreign reserve over a 3-year period[5]. Thus, the government seeking a US$918 million bailout emphasises how a billion dollar from oil can be important for national economy development[6].

Given the manner oil revenues are disbursed over the past four years, it is pretty obvious that there are clear guidelines on how petroleum revenues are used by government. The challenge is that, the oil revenue is spread too thinly over several projects under the priority areas. In 2011 for instance, the government indicated that a sum of GH¢13,147,652.00 was utilized for financing eight (8) agricultural modernisation projects under the ABFA (MOFEP 2012). The projects included fertiliser supply, agricultural mechanisation, a youth in agriculture project, a tsetse fly project, and counterpart funds for Afram Plains (in the Volta Region of Ghana) area development project, an inland valley rice development project, a root tuber improvement programme, and a northern rural growth programme (MOFEP 2012). Also, under the road and other infrastructure, oil revenue allocated was used to finance over 16 roads infrastructure projects and it was observed that most of the projects were not completed due to the limited amount allotted to them (ISODEC 2014). Spreading oil revenue simultaneously across many projects is problematic as the projects were not completed on time.

There is also suggestion that oil windfalls can be invested in other sectors of the economy. In 2011 for instance, as Ghana's energy crisis intensified, some experts suggest that oil revenues could have been channelled into the energy sector since the crisis at the time was affecting the industrial sector of the national economy (Anonymous Interview, August 2014). A recent study by Obeng-Odoom (2015c, p. iii) also suggested that channelling oil revenues into social energy programmes such as biofuels will drive sustainable social change through energy security and creation of green jobs. The way oil revenue is utilised in Ghana over the past four years raises questions about the potential meaningful impact of oil on national

[5] http://www.mofep.gov.gh/?q=content/ghana%E2%80%99s-programme-international-monetary-fund-imf (assessed on April 4, 2016).
[6] Interview, ISODEC, July 2014, Accra.

development. It also raises issues beyond transparency to efficiency in the use of oil resources for the benefit of the general populace.

In a study on the impact of oil on Ghana, ISODEC (2014) seems to suggest that currently, the main direct tangible impacts of the oil and gas sector in Ghana is the oil revenue accruing to government and the few jobs which the sector provides since crude oil is not refined in Ghana. Apart from the Floating Production Storage and Offloading (FPSO) vessel, a ship-shaped hydrocarbon processing facility that separates and stores the crude oil for export, the midstream sector of the petroleum industry such as storage and processing and transportation as outlined in the local content policy are not yet developed. Thus, while analysis of micro and macroeconomic indicators is necessary to appreciate the impact of oil on Ghana, the policy trajectory in the oil and gas industry also deserves further scrutiny. It appears the implementation of government policy in Ghana concerning the petroleum sector over the past five years has focused on discovering more oil through awarding more oil blocs rather than exploring how to add value to the crude oil that is extracted. Ghana's economic structure is still natural resource export-based, include export of crude oil. This has made the impact of the oil sector in Ghana more reflected in macroeconomic gains, such as the high GDP growth rate of 14.4% recorded in 2011 rather than any structural transformation of the economy (Ghana Statistical Service [GSS] 2013). Data from the MOFEP also suggests that about GH¢3.1 billion Cedi of oil revenue was injected into the national economy through spreading the revenue across the four thematic areas as outlined by parliament in 2011. In terms of total national revenue, oil contributed about 5.8% per annum between 2011 and 2014. The next section assesses the impact of oil on Ghana's GDP and its implications for the national economy.

5.5 Oil and differentiated economic growth in Ghana

Based on cross-sectional countries studies, natural resources rich economies that experience poor economic growth are said to manifest the curse, even though such analysis can be problematic since institutions and policies that impact a country's economic growth differ (Boyce and Emery 2011; Alexeev and Conrad 2009). National politics also interact with external factors to shape development outcomes, including economic growth. This analysis on Ghana's oil industry provides a lens to assess whether or not the country's economic growth since 2011 conforms or contradicts the often cited poor economic growth in oil rich economies as discussed in the resource curse thesis. An analysis of Ghana's economic growth rate over

the past ten years will help us to appreciate the history of its economic growth rate, how oil has impacted it, and its implications for socio-economic development.

According to the Institute of Statistical and Social Research [ISSER] (2014; 2013; 2012; GSS 2013; 2012), although the GDP growth rate in Ghana averaged 5% per annum over the past 20 years, it has fluctuated, and it is differentiated across sectors. Table 5.5 and Figure 5.2 show Ghana's GDP growth rate pattern between 2002 and 2014.

Table 5:5: Trends in GDP growth rate, 2002 – 2015

Year	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
GDP	4.4	5.2	5.8	5.8	6.2	6.3	7.2	4.1	7.7	14.4	7.9	7.4	4.0	**4.2**

GSS 2009; 2011; 2012; 2014a; 2015a; BOG 2008 – 2015; MOFEP 2008 – 2014

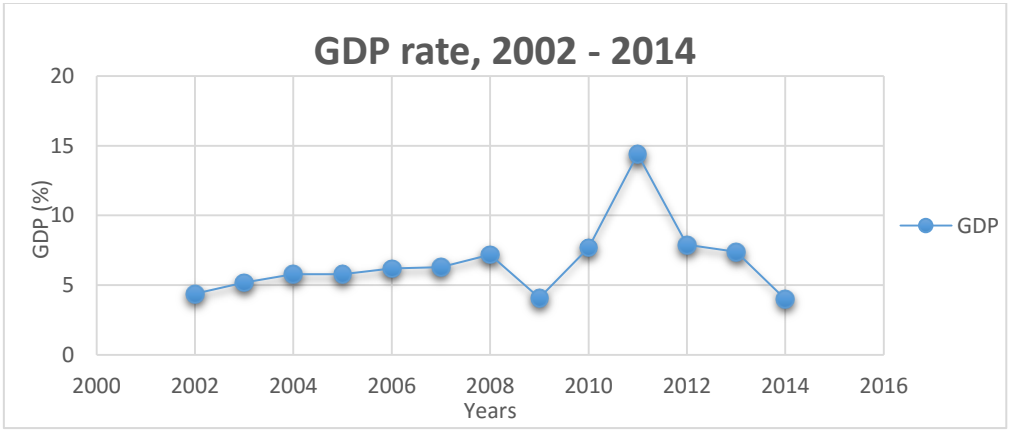


Figure 5:2 GDP growth rate, Ghana 2002 – 2014

As indicated in the table above, Ghana's economy for instance, grew at 4.4% in 2002, increased to 5.8% in 2004 and 2005 and to 6.3% in 2007. The changes in growth rate are as a result of changes in rainfall patterns, world commodity prices of gold and cocoa and growth in the service sector. In 2008, in the midst of the 'global' economic crisis, Ghana's economy grew at 7.2% pa due to an increase in the volume of gold and cocoa produced in the country and growth in the construction sector (ISSER 2009). The growth rate however, declined to 4.1% pa in 2009 (ISSER 2009) due to a fall in world commodity prices, but it increased to 7.7% in 2010.

From the GDP growth rate data, it can be observed that, while prior to oil production in 2011, Ghana's economic growth rate between 2002 and 2010 averaged about 5% per annum, at the onset of commercial production of oil from the Jubilee field in 2011, the growth rate increased drastically to 14.4%; double the growth figure recorded in 2010. Ghana's GDP growth rate in 2011 was almost double that of Nigeria's 7.7% and China's 8.2% (Ewusi 2013a; 2013b; ISSER 2013; 2014). Thus, Ghana's growth rate in 2011 is outstanding, both regionally

and globally. Due to such an impressive growth rate in 2011, it was suggested by some policy makers that oil production in 2011 can mark a new era in Ghana's economic history because of the importance of oil in the global economy and how oil-led growth has a potential to transform the national economy (Ewusi 2013b).

Despite the warning that a high growth rate may not translate into improvement in living conditions for all, politicians in Ghana still appear to view the new found oil boom as a panacea for socio-economic development. There are expectations, even from the citizens, that oil production will bring significant improvement in living conditions (Asante 2009; Anaman 2009; Ewusi 2013b). But in the midst of the heightened expectations among politicians and the general populace, Ghana's growth rate decelerated from 14.4% in 2011 to 7.9% in 2012, just a year after the start of commercial oil production (GSS 2013; BOG 2013; 2012). It further declined to 7.4 % and 4.0% pa in 2013 and 2014 respectively. These changes in growth rates, as noted above, were differentiated across sectors of the economy. For instance, industry's growth rate, due to oil activities in the economy increased from 6.9% in 2010 to 41.1% in 2011, before it declined to 11.0% in 2012 (GSS 2012). The sudden increase in industry's growth rate in 2011 and it subsequent declines shows that it is easier to grow from a lower base than to maintain high growth rate continuously. Without crude oil, the GDP (non-oil GDP) growth rate declined from 8.1% in 2012 to 6.5% in 2013; industry also declined from 11.0% in 2012 to 6.6% in 2013 (GSS 2014a, p. 3). This indicates that, even though the Ghanaian economy has been growing since the onset of oil production, it is growing at a decreasing rate.

Questions also linger as to how such quantitative economic growth will translate into actual poverty reduction, improvements in living conditions and employment creation. Studies by UNECA (2012), Mogalakwe (2003), and Samatar (1999) show that a 'jobless growth phenomenon' can manifest where increases in GDP do not translate into improvement in living conditions for most citizens as characterised some resource rich economics like Botswana. Some of the high GDP growth rates in Africa have been criticised as 'window-dressing' which façades the poor living conditions of citizens in these resource rich economies (Planitz and Kuzu 2014). Shaxson (2007) and Karl (1997) also argue that there can be increased in poverty and poor living conditions in the midst of oil wealth.

Data from the Ghana Statistical Service (GSS) shows that changes in growth rates affected each sectors' contribution to GDP since 2011. Ghana' economy is divided into three

(3) sectors: agriculture, service and industry by the GSS. Table 5.6 and figure 5.3 illustrate trends in agriculture, service and industry contribution to GDP from 2000 – 2014.

Table 5:6: Sectors contribution to GDP (%), 2001 – 2015

Year	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Agric	39.3	38.8	40.2	41.5	45.1	39.3	37.1	36.7	31.8	29.8	25.3	22.7	21.3	23.7	0.0*
Industry	28.1	27.9	27.8	27.1	21.4	27.8	27.7	27.7	19.0	19.1	25.6	27.3	28.1	22.8	0.0*
Service	32.5	33.2	33.0	31.4	33.5	32.9	35.1	35.7	49.2	51.1	49.1	50.0	50.6	53.5	0.0*

GSS (2010 – 2015) and ISODEC (2014) *provisional

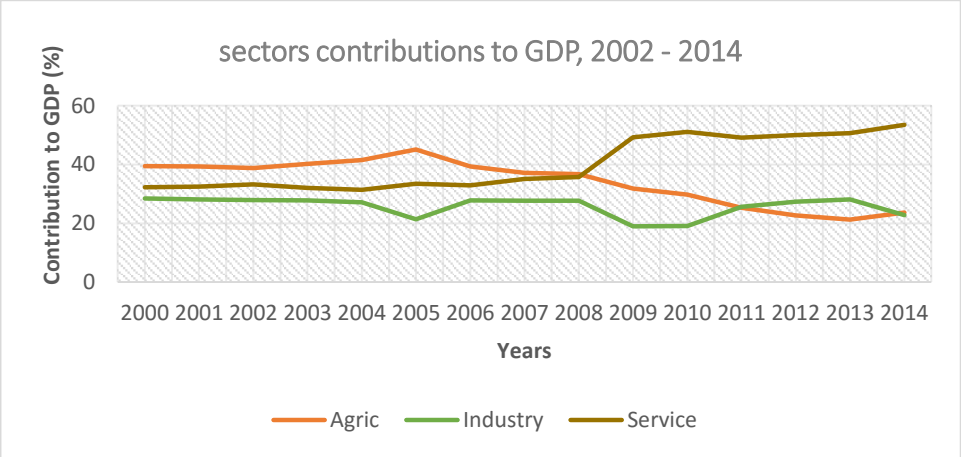


Figure 5:3 Sectors contribution to GDP (data from GSS 2006 – 2014)

The agricultural sector, for example has contributed immensely to Ghana's socio-economic development since it has been the main source of employment and foreign exchange earnings. Agriculture has traditionally contributed the most to Ghana's GDP as indicated in figure 5.3 and table 5.6. Its share of GDP however, started to decline since 2006, coinciding with a period of huge investments in the oil sector. For instance, the agricultural sector's contribution to GDP declined from 25.3% in 2011 to 22.7% and 21.3% in 2012 and 2013 respectively (GSS 2014a; 2013). The decline in agriculture's contribution to GDP can also point to an increase in inequality in Ghana as the oil related growth mostly accrues to government and a few people who work in the oil industry while most of the populace (in rural communities) still depend on agriculture for their livelihoods. It also raises concerns for food security in Ghana as the government seems to shift its focus from agriculture to oil. Meanwhile, industry's contribution to GDP increased from 19.1% in 2010 to 25.6%, 27.3% and 28.1% in 2011, 2012 and 2013 respectively (GSS 2014a; ISODEC 2014), suggesting a positive impact of oil on industrial development. Oil is classified under industry and service sectors and this appeared to have

influenced the increase in industry's contribution to GDP. And for the first time in the history of Ghana, the industrial sector's contribution to GDP over-took the agricultural sector in 2011, mostly on the heels of heightened investment in the petroleum sector (ISODEC 2014, p. 22).

As Morris et al. (2012) argued, the natural resource sector provides opportunity for industrial development in Africa countries due to the linkages it provides. According to them, the ability of the natural resource sector to generate linkages is however, based on natural resource ownership, quality of the national infrastructure, national capabilities and innovation (skills) and national policies and their implementation. In the case of Ghana, one has to careful when discussing the impact of oil on industrial development since the sector is broad. According to the GSS, industry comprised: mining and quarry (crude oil), water and sewage, construction, and manufacturing. Thus, relying only on the average industry growth figure conceals how the growth rate is differentiated in the sector. For example, it is suggested that the 2013 performance of the industrial sector was mainly due to a 37.5% growth in petroleum activities (GSS 2014a, p. 3), suggesting how enclaved the petroleum sector can be. This can be suggestive of a resource curse as other sections of the industrial sector were not growing as quickly. The manufacturing sub-sector in 2013, for instance, was actually growing at a decreasing rate. It posted growth of 2.5 % in 2013, down from 5.0% in 2012. The decline in growth in the manufacturing sector can be largely attributed to the power crisis experienced in that year and competition from cheap imports. Whatever the reason, the decline Ghana's in manufacturing is not good for the country's structural transformation. As ISODEC (2014) noted, manufacturing promotes development since it enables developing countries to produce goods for local consumption and export, and it also has higher potential of providing jobs and increased productivity. Some researchers however, disagree with the argument that manufacturing is more suitable for poverty reduction since the jobs created in the service sector are more heterogeneous in terms of skill level, stability and pay than those in manufacturing (Globalization TrendLab 2014; ISODEC 2014), hence Ghana can benefit from the growth in its service sector . The heterogeneity in employment provided by service sector and low skill manufacturing is good because, it provides an avenue for people with diverse skills to be employed. In Ghana, the service sector recorded impressive growth since investment in the oil sector started as indicated in table 5.6. The service sector's contribution to total GDP increased from 35.7% in 2008 to 50% between 2011 and 2014 (ISODEC 2014).

A careful analysis of the impact of oil on Ghana's economic growth rate shows a differentiated trend across the various sectors of the national economy. For instance, whereas

the manufacturing growth rate is increasing at a decreasing rate (though all cannot be attributed to oil), the service sector is more consistent with GDP growth and its share of GDP has increased from 35.7% in 2008 to 53.5% in 2014. The Ghanaian economy shifting to services (non-tradeables) cannot be said to be a curse. Based on the increases in the service sector's contribution to GDP since investment in the oil industry started, one can question the idea that the oil industry is inherently enclaved. This is because part of the oil industry is classified as service, with growth in the oil sector impacting the service sector as well. An examination of the contributions of the various sectors to GDP growth shows that between 2008 and 2014 when oil exploration and development activities were taking place that the service and industrial sectors overtook the agriculture sector as the main driver of the national economy. As indicated earlier, the value of the service sector's contribution to GDP increased during the same period. This can partly be attributed to Ghana's oil and local content policy which requires that local enterprises play an active role waste management, subsea engineering, welding and electrical services in the petroleum industry.

Ghana's economic growth rate, relative to provision of social services since the commercial production of oil brings to the fore the seeming contradictory tendencies in the manifestation of the impact of oil in a democratic setting. Whereas Ghana's economy is growing at a decreasing rate between 2011 and 2015, there are however, improvements in the provision of social services such as education and health simultaneously. According to the UNDP Human Development Index (HDI), a composite index measuring human development in health, education (knowledge) and standard of living (Human Development Report [HDR] 2012; 2013; 2014), Ghana's performance in social services has improved since 2011 despite some decline in its economic growth rate. Table 5.7 shows Ghana's performance on the HDI from the 1980s to 2013.

Table 5:7: Ghana's HDI, 1980 – 2015

Year	1980	1985	1990	2000	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
HDI	0.423	0.433	0.502	0.487	0.511	0.521	0.532	0.544	0.549	0.556	0.566	0.571	0.573	**0.579**	**0.579**

Human Development Report 2015; 2014; 2013; 2012

In democratic settings in the developing world, in some cases, there might not necessarily be grand political corruption, but oil revenue can be channeled into provision of social services to increase the chances of a political party being elected. In democracies such as in Ghana, where elections are very competitive and often viewed as a zero-sum game, politicians seem to believe that the provision of social services like education and health can enhance their

chance of winning elections[7]. For example, in the 2012 presidential and parliamentary elections, education was one of the key issues. Whereas the opposition New Patriotic Party's (NPP) was focused on using oil revenue to fund a free Senior High School (SHS) (oil-cash for free SHS) (NPP 2012), the governing National Democratic Congress (NDC) focused on 'oil-cash for quality, affordable and accessible education'. The NDC argued that instead of using the oil revenue for free SHS, the country should rather focus on expansion of secondary and tertiary education to make them more accessible for the populace. In the 2012 manifesto of the NDC on education, it promised to build 200 Day SHS and one university in the Eastern Region within the four years in office (NDC 2012). As at June 2015, fifty of the schools were almost completed and the government has promised to expedite work on the rest in the last one and half years in office. The land for the Eastern Region's university has been acquired and the contract awarded for construction to start this year. Other programs being implemented by the government in the education sector in Ghana include a capitation grant, school feeding and provision of free school uniforms and sandals. These expansions in the social services increased the state's expenditure. As noted by Obeng-Odoom (2015a), public expenditure on education which was 9.1% of gross domestic product (GDP) in 2007 when oil was discovered, has increased to 10.1% in 2008, a year after oil was discovered (see Ministry of Education, 2010). In 2013, six (6) years after oil discovery and 3 years of oil export, 23.8% of the total budget was allotted to education (Obeng-Odoom 2015a, p. 6), and between 2013 and 2014, there was a 62.5% increase in the public funds allocated to education (MOFEP 2013; Obeng-Odoom 2015a, p. 6). These increases in the resources allocation to the education sector was consistent with government's investment pattern of oil revenue where most of the revenue, apart from loan payment goes into investment in infrastructure, including education. The government is ready to invest in social services because the politicians seem to believe that the provision of social services can increase its electoral victory. The government sometimes resorts to borrowing to finance such social services, increasing the national debt.

5.6 Oil driven borrowing and the public debt in Ghana

Increased public debt due to government borrowing is one of the characteristics of a resource curse (Auty 2001; Karl 1997; Sachs and Warner 2001; Sala-i-Martin and Subramanian 2012). The resource rich (oil) economies are often indebted because the 'false sense of perpetual national wealth' cannot be sustained due to price volatility of natural resources. Yet, once

[7] Interview, Centre for Democratic Development (CDD), November, 2014, Accra.

public spending is set in motion, it becomes difficult to stop as the natural resource rich governments partly earn their support from using natural resource revenues in the provision of social services. This has a tendency to increase the public debt because when the price of oil falls, the government often has to borrow from local and external sources to meet social needs, as well as other development projects. Since oil production started in Ghana in 2011, there are concerns that oil and the country engagement with China will be affected by a resource curse in a form of increased public debt due to increased government borrowing. These concerns seemed valid since even without oil, successive governments in Ghana have relied on both external and domestic borrowing to finance some of its social services and development projects. The basic question is: will oil and government engagement with China through oil-backed loans escalate public borrowing and debt or it will become prudent in the management of the national purse? This section examines the trend in public debt since 2011 to analyse the trends in the national debt. To better appreciate how oil might be influencing current government borrowing, we have to trace a little back to the pre-oil era to have a historical understanding of Ghana's debt.

The graph below (figure 5.4) shows Ghana's debt as percentage of GDP, based on data from Bank of Ghana, 2000 – 2014 (BOG 2005; 2006; 2010; 2012; 2014).

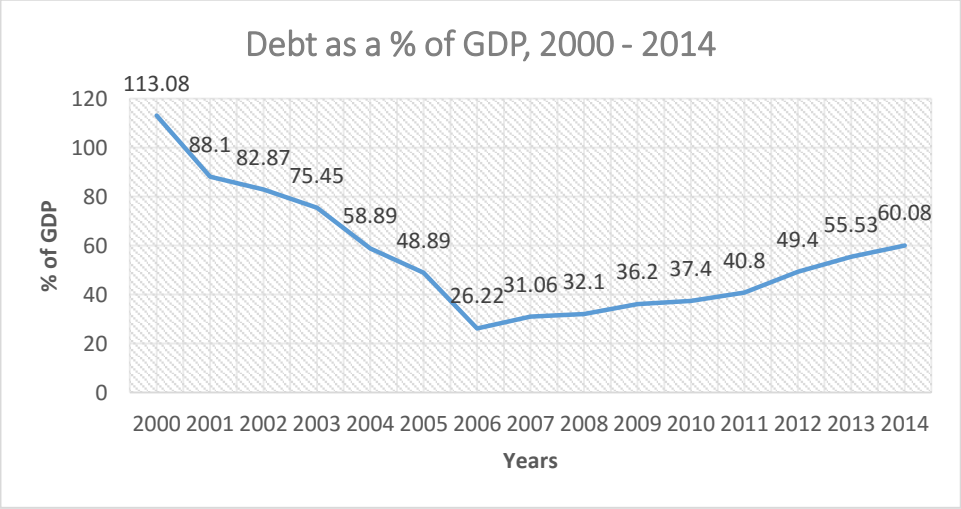


Figure 5:4: Debt as a % of GDP, Ghana, 2000 – 2014

Since the 1980s when Ghana adopted Structural Adjustment Programme (SAPs), the country relied on external loans, grants, and foreign exchange earnings from cocoa and gold and local taxes for its development projects. In view of inadequate financial resources from its exports and taxes, loans were important in the provision of social services like health and education, leading to upsurges in the public debt. In 2000 (as indicated in the graph), Ghana's national debt was 113% to its GDP. Due to the high debt to GDP ratio, the World Bank and International

Monetary Fund (IMF) declared the country a Highly Indebted Poor Country (HIPC) in 2001. When Ghana was declared HIPC, some of its external debts were cancelled (Kwakye 2012). Some of its debt servicing obligation to the WB and IMF was also suspended so that the monies could be channelled into development projects. The country also benefitted from the Multilateral Debt Relief Initiative (MDRI), which offered some relief from debts owed to the IMF, the International Development Association (IDA) of the WB, and the African Development Bank (AfDB) in 2006. As a result of the HIPC and MDRI initiative, Ghana's debt to GDP (see figure 5.4) declined from 88.1% in 2001 to 26% in 2006 (Kwakye 2012, p. 3).

When the HIPC initiative ended in 2006, Ghana's public debt started to rise again as the government has to continue borrowing to fund its development needs. Ghana's government spending has increased since 2006, causing the post-HIPC/MDRI debt to GDP of 32.1% in 2008 to rise to 49.4% in 2012 (Kwakye 2012), increasing further to 60.08% of GDP in 2014 (BOG 2014). The high debt to GDP ratio should not be seen as however peculiar to Ghana since it seems to reflect a feature of underdeveloped economies generally. In actual terms, the Ghana's public debt (including government guaranteed debt), increased by 22.7% from about US$19 billion dollars at the end of 2012 to US$23.5 billion by the end of September 2013 (MOFEP 2014; BOG 2013). And as a percentage of GDP, the debt increased from 49.4% in 2012 to 52.0% at the end of September 2013 (MOFEP 2014). There is a projection that the debt will rise to 70% of GDP in 2016 (IEA 2015).

The public debt is made up of two components: domestic and external. Short and medium term notes and bonds are the main sources of loans from the domestic market. Ghana's domestic public debt has been on the increase, reaching GH¢26.6 billion in 2013, reflecting an annual growth of 30.9% (MOFEP 2014). Government borrowing from the domestic market (banks) at high interest rates is siphoning credit from the private sector to expand their business to grow the economy as the local banks are more comfortable lending to the central government at high interests than the private sector. Government borrowing from external sources has also been on the rise. As shown in table 5.8, Ghana's external debt's as a share of GDP, which was 14.3% in 2008 had increased to 33.4% of GDP in 2014.

Table 5:8: Ghana's external debt trend (million dollars)

Year	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
Ext. Debt	4,035	5,008	6,119	7,589	8,835	11,461	12,968	
% of GDP	14.3	19.4	18.9	20.8	21.7	27.0	33.4	

BOG 2014; ISODEC 2014; MOFEP 2012 – 2015

One can question as to why the country has not been able to maintain the declining trends in the debt to GDP ratio witnessed during the HIPC and MDRI support from 2000 to 2006. Although high debt to GDP ratio seems to characterise underdeveloped economies, policy makers and development experts suggest that the discovery of oil in 2007 and subsequent production in 2011 in Ghana is also an important factor that is mediating and increasing Ghana's national debt since the 'oil state status' seems to have given the government the 'artificial hope' of wealth to pay such loans. By its nature, oil has a fetishistical appeal (Watts 2003). Hence, 'oil creates the illusion of a completely changed life, life without work, life for free .... The concept of oil expresses perfectly the eternal human dream of wealth achieved through lucky accident ... In this sense oil is a fairy tale and like every fairy tale a bit of a lie' (Kapucinksi 1982, p. 35 in Watts 2003, p. 5090). Additionally, Ghana's creditors appear more ready to lend to the country since with oil wealth, it appears the chance of defaulting on payments is reduced. The discovery of oil is implicated in the recent surge in the public debt because apart from giving the country a sense of false wealth, the opportunity (especially external ones) to obtain loan also increases with the presence of natural resources like oil. For instance, in 2010, China advanced a US$3 billion dollar loan facility to the Government of Ghana that was guaranteed with oil. Also in 2011, an US$850 million loan was granted by the Chinese Government for the construction of the Ghana Gas Project. This is to help solve the energy crisis that has bedevilled Ghana, leading to limited supply of power for industrial and domestic use. The gas project facilitated value addition to the oil industry and to fulfilled government policy of 'no gas flaring' policy. In 2014, US$489 million dollar grant was given by the US government for the improvement of the electricity sector and these investments coincide with Ghana's oil boom. Perhaps, it is correct to argue that if Ghana had not discovered oil, the chances of these governments granting the loan to Ghana would be less. The Chinese government granted that loan because it needs the oil to satisfy increasing energy needs. We cannot therefore, exclude foreign governments' interest from the rise in debt of oil rich countries, as the debt arises as a result of a network of interests. The accumulation of Ghana's debt can be seen as a result of the actions of a globalised assemblage, comprising the state political elites, China's interests, and local politics that requires that need for provision of social services to secure electoral support.

Price volatility of oil affected Ghana's revenue estimates, leading to a dip in revenue to finance national expenditure. Unstable oil prices on the world market affected the ability of Ghana to plan on how much it will earn and to be able to match this with its expenditure. In the absence of stable oil prices to guarantee revenue, the government was forced to borrow

money to finance its expenditure, (though it could have also cut-back its expenditure but this did not happen). Oil revenue also came with high expectation from Ghanaians (Gary 2009; Asante 2009; Moss 2011). The government is forced by pressure from the population or the government's own desire to use provision of social services to gain popular support to channel oil revenues in to the provision of such services in Ghana.

As argued elsewhere, once spending is set into motion, it is difficult to reverse as loyalty is earned through such social services (Gelb and Grasmann 2010). Watts (2010) also asserts that a dilemma at the heart of a petro-state is the issue of unearned income, and the dynamics of resource distribution and development of a social contract. The ruling government in Ghana seemed compelled to continue spending even where resources were limited since the political elites hold on power is intrinsically linked with their ability to provide materials resource to their base. Also, with a huge infrastructure deficit, the Ghana government was forced to continue spending on roads, education, poverty reduction programs and payment of public sector wages which all increase the national debt.

In 2012 for example, Ghana debts increased because of government borrowing over GH¢3,071.5 million on short-term basis, GH¢2,824.1 million in medium-term instruments and GH¢2,339.2 million in long-term instruments (BOG 2013, p. 16) to finance recurrent and capital expenditures. Some of the monies were used in the payment of salaries of public sector workers, financing of infrastructure projects such as the eastern corridor roads, energy/gas infrastructure and educational projects. As President Mahama noted: 'As the economy grows you want to remunerate the public sector better to motivate them . . . you want to put in infrastructure, you want to do a lot of things . . . You can pile on debt quite quickly' (Quoted in Daily Graphic, 9 July 2015)[8]. But as one policy analyst noted, the mounting public debt is: unsustainable or hitting levels that will make it difficult for the government to pay … and if the trend continued, Ghana could be classified as HIPC again[9]. The implementation of the Single Spine Salary Structure (SSSS) since 2010, where public sector workers (of the same rank, in different sectors) are paid similar pay for instance, has increased the government public sector wage bill to about 70% of tax revenue in 2014. The SSSS operates on a principle that all public sector workers irrespective of their area of specialization and organization must be placed or linked on common salary structure. This is to ensure equity and transparency in public sector remuneration. Public sector workers in Ghana that were placed on the SSSS include the:

[8] Daily Graphic, 9 July 2015.
[9] Interview, GSS, July 2014, Accra.

Ghana Education Service, Ghana Health Service, Audit Service, Civil Service, Judicial Service, Service, Parliamentary Service, Local Government Service, Police Service and among others. As the public wage bill increases, the government has to use most of its tax revenue to pay salaries, while depending on loans from local and external sources for capital investments. Though spending most tax revenue on wage payment is not the best for prudent economic management, the Ghana government appeared obliged to continue spending on social services since their provision can contribute to ensuring electoral victory. This seems to be reflected in a political economy where loyalty is based on patronage (Chabal 1992; Bayart 1993; Khan 2010; Whitfield 2011). The Ghanaian state, accumulates its debt as a result of 'enrolment' (Heck 2013; Cressman 2009) of international actors (countries and institutions like the IMF) and local actors which provide the opportunity to borrow, and a populace whose desire for social services encourage such spending. But one has to ask: how long will the country continue to spend most of its tax revenue on payment of wages and continue to depend on loans for development projects. This can have implications for economic stability and the local currency. The next section examines how the discovery of oil in 2011 and its associated economic growth and government borrowing impact the movement of the local currency.

5.7 Depreciating Ghana cedi despite inflow of oil revenue

Movement in the local currency as a result of an influence of the natural resources is one way to analyse whether or not a country is experiencing a resource curse. A natural resource rich country manifest a curse in a form of the Dutch Disease — the tendency of the local currency to appreciate which makes imports cheaper and results in contraction of a country's local manufacturing sectors (Sala-i-Martin and Subramanian 2003). This occurs where as a result of an appreciation of the national currency, domestic products become more costly for foreign markets, inhibiting export growth (Maass 2009). The weakening of exports due to cheap imports also negatively affects foreign exchange earnings and income of exporters. But as Karl (1997, p. 5) argues, the Dutch Disease is not inevitable since the extent to which it affects a country is largely dependent on decision-making concerning how natural resource revenues are utilised so as not to negatively impact industrial and the service sectors.

Data from the Bank of Ghana and the GSS indicate that the Ghana cedi has depreciated against the country's main trading partners over the past 30 years (BOG 2013; GSS 2012; 2010; ISSER 2013). The cumulative depreciation of the cedi to the US dollar from 1990 to 2013 is 7,010.2%, with the yearly weighted depreciation to the US dollar for the same period is 20.4%

(Nortey et. al 2015, p. 1) due to poor fiscal discipline and falls in prices of natural resources such as cocoa and gold (IMF 2009). The cedi depreciated against other major trading currencies such as the euro and pound as well. The question is: has the trend of the currency depreciation changed since the start production of oil in 2011? The diagram (figure 5.5) shows the movement in the local currency against the dollar, euro and pound from 2005 to 2014.

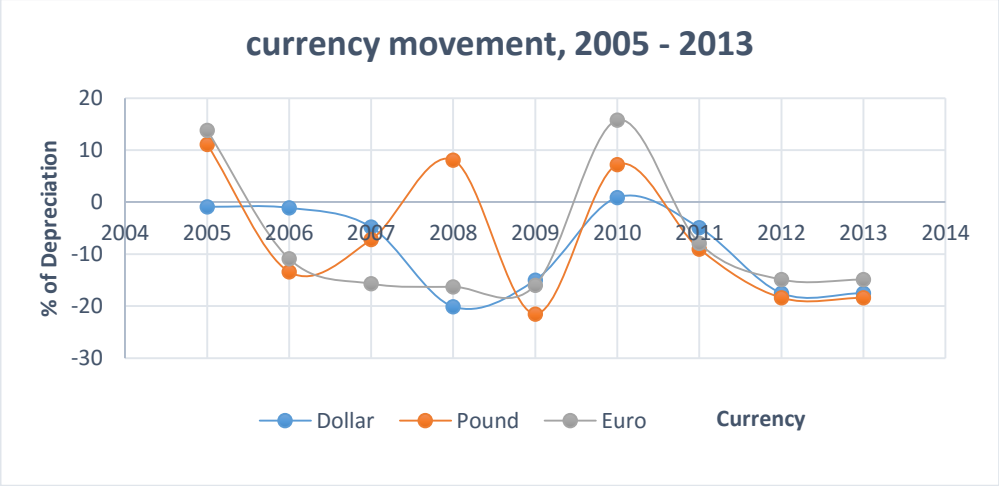


Figure 5:5: Ghana cedi movement (data from BOG and ISSER, 2010 - 2014)

The diagram (figure 5.5) demonstrates that apart from a few periods in 2005, 2008 and 2010 when the cedi appreciated against the euro and pound, the cedi had depreciated consistently against the major trading currencies. The appreciation of the cedi in these periods was partly due to commodity price increases, fiscal discipline and donor inflows. In 2007, the depreciation rate was 4.8%, 15.7% and 7.2% against the dollar, euro and pound respectively. The appreciation in 2008, according to the Bank of Ghana (2008) was as a result of growth in foreign currency deposits into the Ghanaian economy due to commodity price increases for cocoa and gold. In 2008, due to increase in foreign exchange from gold and cocoa in 2008, the cedi still depreciated by 20.1% and 16.3% against the dollar and the euro respectively, but it appreciated by 8.1% against the pound (BOG 2008). It must be noted that although the cedi appreciated against the pound in 2008, most foreign transactions in Ghana are denominated in dollars, hence the dollar-cedi ratio is important when dealing with the movement of the local currency. In 2010, due to IMF conditions which placed a freeze on public wage increases, there was some stability in cedi. The cedi could not however, maintain its stability in 2011 due to the fall in global commodity prices and implementation of the SSSS pay policy which increased the government wage bill. For instance, the cedi depreciated a little by 4.9%, 9.0% and 7.9% against the dollar, the pound and the euro respectively in 2011 (BOG 2011) due to government overspending through salary increases, provision of social services like education and a surge

in demand for foreign exchange to meet higher oil import bills and food imports [rice], servicing of external debts, and expenditure on national infrastructure.

It seems the depreciation of the Ghana cedi is also conditioned by the structure of the national economy where there is high demand of foreign currency for imports relative to exports. In 2012, a year into oil production in Ghana, the cedi continued to trade weakly on both the interbank and forex bureaux markets. The depreciation experienced in 2012 was as a result of foreign currency demand for imports and speculative activity in the foreign exchange market (Bank of Ghana 2012, p. 18). In 2012, the cedi depreciated on the interbank market by 17.5% to the dollar, 18.4% to the pound and 14.9% to the euro (Bank of Ghana 2012). The depreciation in the value of the cedi slowed down in 2013. Demand for foreign exchange for oil imports and loan repayments remained high, while foreign exchange inflows from gold and cocoa remained low (Bank of Ghana 2013, p. 3).

Ghana's experience with the impact of oil on the local currency suggests that, the factors that shape the movement of a cedi are complex and varied. The relationship between the local currency and natural resources is non-deterministic. And the factors that shape and condition the movement of the local currency range from global, national policy and politics and local conditions. It is suggested by an official of GSS that:

> 'Ghana's currency has depreciated over the years because the country's economic fortunes have over-relied on exports of gold and cocoa whose prices are unstable and any change can seriously impact the economy. Government has also resorted to huge borrowing, both locally and internationally to finance most of its development projects, leading to huge deficits. And more worrying in recent times is the new found oil that appears to have given the government fresh opportunity to borrow. Lenders (both local and foreign) seemed to believe that with oil, the chances that government will default is low' (GSS, July, 2014, Accra).

It is worth noting that while global price volatility of natural resources impacts currency movement in Ghana, these factors interact with national policies and politics and local conditions. Beside Ghana's weak economic fundamentals, like a weak manufacturing sector and changes in world commodity prices of cocoa and gold which negatively affect the local currency, election pressure also seems to promote reckless spending. Ghana's experience of shows how election pressure, a key element of democracy can be implicated in a country's currency depreciation as money is used to provide social services and increase public sector

pay. Ghana's democracy has been described as based on competitive clientelism (Whitfield 2011; Levy and Walton 2013) where patronage is important to winning an election.

The relationship between oil and the cedi shows that Ghana's experience however seems to defy a traditional notion of the resource curse which suggests revenue inflow from natural resources into a country's economy makes it suffer the Dutch Disease. Indeed, in Ghana's case, oil export from the Jubilee field since 2011 has not reversed the depreciation of the cedi. This raises questions about the hitherto held notion that a sudden influx of revenue from natural resources could solely be the cause of appreciation of the currency of mineral or oil rich economies. It seems the impact natural resources have on national development, including currency movement are embedded and interwoven with socio-economic and political conditions in the global and national economy and local conditions. The movement of the local currency can be attributed to the country's weak economic fundamentals, underpinned by an overdependence on imports of expensive manufactured goods relative to exports of cheap raw materials, to budget overruns to satisfy social services in the country.

Whereas an overly depreciated currency will not be prudent for the national economy, depreciation is not always a negative phenomenon. Currency depreciation can promote exports since as a local currency depreciates, exports become cheaper and competitive for foreign buyers. This can boost local economic growth and create employment in the export sector. High exports can also lead to improvement in the current account deficit. However, excessive currency depreciation can lead to inflation as imports become expensive, reducing the purchasing power of citizens and decreasing investors' confidence due to a potential decline in the value of their investment. Currently, the cedi depreciation is leading to high inflation [16.9%, May 2015] and reduction in the purchasing power of Ghanaians (GSS 2015a; BOG 2015). A weak local currency, coupled with high inflation can negatively affect economic growth, including in industry as local companies will require more money to purchase inputs that cannot be found locally. The depreciation of the local currency can also reduce the investment capital of industries operating in the country.

5.8 Emerging oil sector and industrial development in Ghana

Growth in the industrial sector of a country is important for socio-economic development. Industrial development in Europe and the US provided goods, employment and capital for other development initiatives since industrial economies are able to trade expensive manufactured

goods for cheap agricultural products. China's recent economic growth underscores the significance of industry, especially manufacturing in socio-economic development (UNCTAD 2013). A country, therefore, suffers a curse where a natural resource sector dissuades labour and capital from entering the tradeable sectors (manufacturing, agriculture and mining), thus, reducing growth in those sectors of the national economy (Morris et al 2012, p. 7). Nigeria's experience of over-reliance on oil exports to the neglect of its manufacturing sector is often cited as one of the cases of a resource curse (Frankel 2010; Steven 2003). The relationship between a natural resource sector and industrial development seems not to be always negative, it is more nuanced since in countries like Sweden and the US, there is positive synergy between manufacturing and commodities where manufacturing firms thrived despite the existence of natural resources (Wright and Czelusta 2004; Morris et al 2012). This section analyses how oil has impacted Ghana's industrial sectors since its commercial production started in 2011.

Ghana's industrial sector, according to the Ghana Statistical Service comprises mining and quarrying (crude oil); manufacturing; electricity; water and sewerage; and construction. The manufacturing sector comprises all industrial production that transforms raw materials into finished goods, such as pharmaceuticals, household appliances, and agro-processing. Ghana's attempt at industrialisation through import substitution in the 1960s did not succeed. Attempts to revamp the industrial sector in the 1990s, through private sector participation also suffered setbacks as a result of poor management and inadequate capital. In the 1990s and early 2000s, most state owned industries were sold due to poor performance. There was investment in Anglo-Gold Ashanti in 1990s, but the focus has been on extracting more gold, with little effort to develop gold refining in the country. Limited value addition appears to have negatively impacted Ghana's industrial growth.

Table 5.9 and figure 5.6 show industry's growth rate and contribution to GDP from 2003 to 2014. The industrial sector growth rate in Ghana has fluctuated, averaging 6% per annum between 2003 and 2010. It grew at 5.1% in 2003, increased to 9.5% in 2006 and was 6.7% in 2007, as indicated in table 5.9 (GSS 2009 – 2015). In 2009, the sector's growth declined to 4.5%, a decrease from a growth rate of 15.1% in 2008. The decline in the growth rate in 2009 can be attributed to the energy crisis the country experienced that year and increases in prices of raw material imports.

Table 5:9: Industry growth rate and contribution to GDP (%), 2003 – 2014

Year	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Ind. growth rate	5.1	4.8	7.7	9.5	6.7	15.1	4.5	6.9	46.1	11.0	6.6	0.9	0.0*
Industry to GDP	24.9	24.7	21.4	20.8	20.7	20.4	19.0	19.1	25.6	28.0	27.8	28.4	0.0*

GSS 2008 – 2013; 2015; MOFEP 2004 – 2014; Ewusi 2013b *Provisional

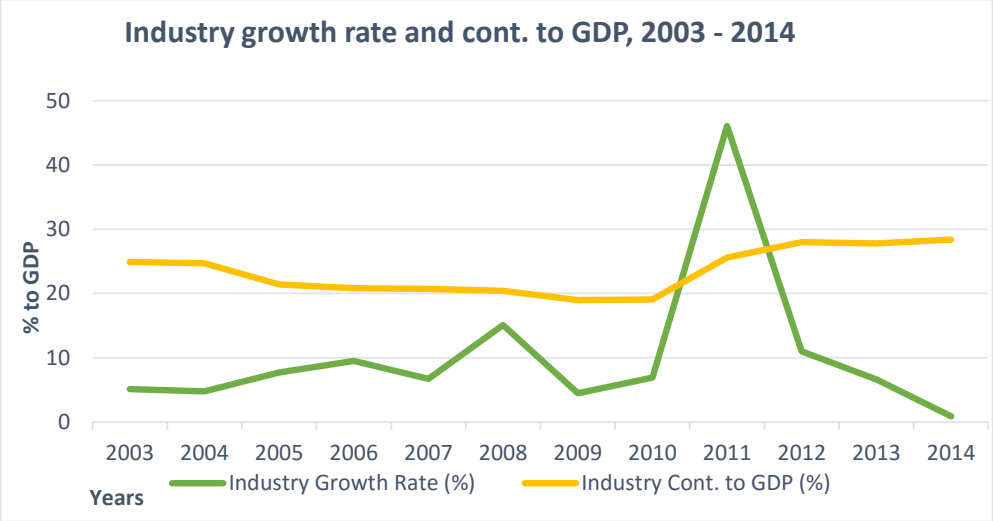


Figure 5:6: Industry growth rate and cont. to GDP, 2003 – 2014

The government attributed that poor performance of the sector in 2009 to contraction in the construction subsector, the largest contributor to industrial output (MOFEP 2010). Ghana's industrial sector could not compete with cheap imports from China, especially in the textile industry (Linn 2012; Tsikata 2008). Despite the decline in the total industrial sector in 2009, the mining sub-sector had a remarkable growth of 8.0% due to increase in the price of gold as a result of high demand (MOFEP 2010). This shows how differentiated the growth in the industrial sector can be as indicated in the table 5.10.

Table 5:10: Differentiated growth in Ghana's industrial sector, 2006 – 2015

Year	Total Industry	Industrial subsectors				
		Manufacturing	Mining and Quarry (oil)	Electricity	Water and Sewerage	Construction
2006	9.5	4.2	13.3	24.2	NA	8.2
2007	6.1	-1.2	6.9	-17.2	1.2	23.1
2008	15.1	3.7	2.4	19.4	0.8	39.0
2009	4.5	-1.3	6.8	7.5	7.7	9.3
2010	6.9	7.6	18.8	12.3	5.3	2.5
2011	41.6**	17.0	206.5***	-0.8	2.9	17.2
2012	11.0	2.0	16.4	11.1	2.2	16.4
2013	6.6	-0.5	11.6	16.3	-1.6	8.6
2014	0.9	-0.4	3.2	0.3	-1.0	0.0
2015*	0.9	-0.4	0.8	-4.8	2.7	11.6

*Provisional; **oil production started; *** oil is part of mining and quarry
GSS 2009 – 2015; BOG 2014

There was sudden increase in the growth rate of the industrial sector from 6.9% in 2010 to 46.1% in 2011, and its contribution to GDP also increased from 19.1% to 25.6% in the same period (GSS 2015a; 2014a; MOFEP 2015). The sudden increase in the industrial sector's growth in 2011 can partly be attributed to investments in the oil sector since that was the year commercial production of oil started. But as to whether the sudden quantitative change in growth rate translated into improving the quality of life is an issue for further analysis. The high growth rate recorded in 2011 however declined to 11% in 2012, 6.6% in 2013 and further to 0.9% in 2014. As can be observed, the growth in the industrial sector could not be sustained in the subsequent years. The irony is that, despite industry growing at a decreasing rate, its share of GDP has been increasing, suggesting that other sectors of the Ghanaian economy such as agriculture have been shrinking in relative terms. Industry's share of GDP for instance, increased from 19.1% in 2010 to 25.6% in 2011, and to 28.4% in 2014.

Table 5:11: Growth rate (%) in the manufacturing sector, 2003 – 2014

Year	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Growth rate	4.6	4.6	5.0	4.2	4.5	3.7	-1.3	7.6	17.0	2.0	-0.5	-0.4

GSS 2008 – 2013; MOFEP 2004 – 2014; Ewusi 2013

The manufacturing sub-sector of industry also experienced varied growth rates between 2003 and 2014 (as indicated in table 5.11 above). Ghana's manufacturing sector grew at about 4% per annum between 2003 and 2008. In 2009, the sector contracted by -1.3%, and this can be attributed to the energy crises the country experienced that year. The manufacturing sector however, recovered from its decline in 2009, recording a growth rate of 7.6% in 2010. It further grew by 17% in 2011 at the start of commercial oil production. In 2012 however, the manufacturing sectors growth rate grew by only 2%, contracted by -0.5% in 2013 and -0.4 in 2014. During these periods, Ghana has been experiencing an energy crisis, and this could partly be blamed for the decline in the manufacturing sector.

The emergence of the oil industry could also be negatively impacting the manufacturing sector growth because, since 2011, the government of Ghana's policies has more been focused on the oil sector development. Ghana has had several industrial policies developed, but there appear to be limited efforts to implement them. As one key informant noted: an industrial sector (manufacturing) barely exists in Ghana, since the government appears to be more focused on the natural resource sector such as cocoa, gold and oil where it can easily earn foreign exchange from their sale[10]. Ghana has instead been importing most of its industrial products. Most of the

[10] Interview, ISODEC, July 2014, Accra.

manufactured products are imported from China, Europe and the US. Recently, Ghana's parliament has imported furniture from China to refurbish the house to accommodate its members[11]. SAP also encouraged the government to focus on export of agriculture products in which the country has a comparative advantage which has negatively affected the country's ability diversify and develop its industrial sector such as agro-processing. Although there were some efforts to strengthen the industrial (manufacturing) sector, the sector's impact in terms of value addition to agricultural products and employment creation seems to still remain an expectation, due to the limited investment in the sector and its inability to compete with imports from industrialized countries.

Hope and expectation by themselves alone also do not translate oil and gas resources into prosperity for everybody. Hence, efforts to use the oil industry to promote industrial development needs to transcend mere policy statements. The Ghana Government in 2011 identified the National Vocational Training Institute (NVTI), which will be resourced through oil revenue, as one of the instruments to ensure provision of employable skills for the youth. According to the policy document, the key focal areas of government for economic development for the medium term are: enhancing competitiveness of Ghana's private sector, accelerating agricultural modernization and natural resource mobilization and the development of the energy, oil and gas industry (MOFEP 2012). But it seems five years into oil production, it remain a hope as no concrete steps were put in place to develop a petrochemical industry based on the petroleum sector. In 2013 again, the government initiated the Industrial Sector Support Programme by organizing an inter-agency forum for major stakeholders from public and private institutions to acquaint themselves with the main components of the Ghana's industrial policy. Furthermore, the local content regulations in the petroleum sector resulted in the establishment of the Enterprise Development Centre (EDC) in Takoradi, with support from Tullow Ghana, GNPC and Kosmos to train Small and Medium Enterprises (SMEs) in the oil and gas industry to take advantage of opportunities in the sector (Tullow 2014; EDC 2014). EDC is to serve as the business link between local enterprises and the oil and gas industry. It is focused on training, business coaching, and provision of information on oil and gas businesses in Ghana[12]. The training programme aims at creating employment and facilitating training of SMEs to be properly positioned in the oil and gas industry. According to data from the EDC, its training has created employment and facilitated the training of 205 SMEs in 2013

[11] http://citifmonline.com/2014/11/05/furniture-was-imported-from-china-to-save-time-parliament (accessed on 11 July 2015).
[12] Information on the EDC and its activities are available at: http://www.edcghana.org.

to participate in the oil and gas industry (EDC 2014). But one can ask: what class of people are targeted for the training? These training programmes will mostly be targeted at the educated. What about the fishermen whose livelihoods have been directly affected by oil exploration in Ghana? The study shows that fishermen did not benefit from such programmes since most of them are less educated and do not have the skills to operate SMEs such as oil and gas accounting, catering, electrical and oil drilling trainings provided by the EDC[13]. Who benefits from the SMEs trainings seems to be differentiated along class.

There is a question also as to whether or not the politicians in Ghana are ready to invest in a structural transformation venture without focusing on the short term issues of provision of social services due to electoral pressure? Or how does SAPs, WTO trade regulations, industrial growth of China and technological challenges constrain and condition the structural transformation of Ghana? As Rimmer (1992) argued elsewhere, Ghana has stayed poor during most of its history not because successive governments were indifferent about poverty, but because they followed domestic politics and policies which seemed to focus on short term needs to maintain patron-client relations. Populist and wasteful policies are often retained out of fear of the political consequences (Rimmer 1992). The point is not to downplay the importance of provision of social services but it becomes a challenge when such services are used to build, strengthen and consolidate patronage networks. Ghana's economic development is historically embedded in its political, economic and social choices (Owusu and Ohemeng 2012; Aryee 2012; Hutchful 2002; Grant 2002; Pellow 2002; Rimmer 1992). The political and economic choices are also shaped by external policies such as SAPs, WTO regulations and technological challenges that constrain the ability of resource rich economies to use their resources to diversify the economy.

The differentiated challenges that oil poses to Ghana's development seems to reflect the level of technological capacities of the country in the hydrocarbon assemblage. It is argued that oil can help a country to develop its industrial sector (manufacturing) based on its capital and technological abilities, complemented by trans-local actors in the globalised production networks (Coe et al. 2004, p. 471; Bridge 2008, p. 408). Coe et al. (2004, p. 471) argue that natural resources can promote manufacturing and service sector development if they provide advantages such as capital for investment into other sectors of an economy. But as Bridge (2008, p. 408) argues, though natural resources like oil provide opportunities for industrial development, technological imperative in the oil production chain can constrain turning such

[13] Interview, EDC, November 2014, Takoradi.

opportunities into regional, national or local advantage. Bridge (2008) identified the balance of power between different actors in the hydrocarbon chain as one factor that conditions if a country can benefit from its natural resources. Coe et al. (2004, p. 481) argue that in processes of value creation, its enhancement and the capture economic benefits for development, the balance of power between the various actors involved is important. This can enable a development of downstream processing capacities and diversification of an economy (Auty 1997; 1990). But Ghana's national oil company, GNPC which is supposed to help the use of oil to diversify the economy seems to lack the technical capabilities. Bridge (2008) further argues that the scaling up of production, refining and transportation raises the capital intensity of production, and entrenches the position of existing actors by increasing barriers to entry. This tends to weaken the opportunities for developing backward and forward linkages between extractive investments and the host economy (Bridge 2008, p. 408). Limited linkages serve as a mode of governance by the hydrocarbon assemblage. It also emphasizes how weak linkages flow not only from any intrinsic properties of oil, but also from the conditions of inter-firm competition that characterize oil's global production networks: where local actors are often excluded from capital-intensive and/or high-skill parts of the network (Bridge 2008, p. 408). The economies of the upstream and exploration phase of the production network in the hydrocarbon industry are dominated by global firms and there are barriers to entry due to technology limitations and the ability for service contracts in the sector (Bridge 2008).

Ghana's experiences also point to the fact that the factors that shape industrial development in a country are not exclusively internal. Sheppard (2011) contends that there is the need to understand development from the relational perspective where economic conditions needs to be explained by place based attributes as much as their connectivity to other places. Industry development, apart from being shaped by national government policies, it also depends on which sectors of a resource rich economy TNCs are willing to invest in. For example, China is currently the 'manufacturing hub' of the global economy, able to manufacture products cheaply, and trade them across the globe. Most Chinese investments in Ghana in recent years are mostly directed into the oil, hard mineral sector and infrastructure development. And given Ghana's industrial capabilities, it cannot compete with industrial goods from China. According to Lee (2014, p. 83), sometimes the Ghanaian industries cannot compete with their foreign counterparts because of subsidies. With regards to aluminium, it is argued that, it is 'not because Ghanaian aluminium is not competitive or worse than the Chinese aluminium, but the Chinese government gives rebates to companies in China to export their aluminium at much cheaper price (ibid: 83), suggesting, industrial development goes beyond

Ghana's national politics, but it will for instance, also include China's policies and other factors in global economy. Thus, a resource rich economy like Ghana's ability to compete favourably in the manufacturing sector on the global scale is also partly dependent on, for instance, China's manufacturing position in the global economy. It also demonstrates how the powerful (developed) countries have the ability to maintain global hegemony, by providing subsidies for their companies to make them internationally competitive (Lee 2014). It seems without subsidies, Ghana cannot competitively manufacture products for home consumption or export within the liberalised global economy. The Ghana government could use oil to provide subsidies to the industrial sector. Given some opportunities that oil has provided for industrial development in Ghana such as the Atuabo Gas Processing Plant and the Atuabo Freeport, it seems that there is no deterministic negative relationship between natural resources like oil and the decline/neglect of manufacturing sector in a particular country. But the natural resource sector mediates and interacts with institutions, politics and global forces at particular time and space to determine their impact in specific countries. Thus, while the broad national political economy is important in shaping the impact of natural resources, there is an actor-network (Latour 1988; Callon 1986) of globalised actors, state and global politics, ideas, capital, institutions and structures that mediate and conditions the impact of natural resource windfalls.

5.9 Impact of oil on agriculture development, Ghana

How the agricultural sector is adversely affected by the natural resource's sector has been a focus of the resource curse (Auty 2001). Gelb's (1988) study showed how Nigeria and Ecuador's agriculture sectors deteriorated due to a natural resource boom in those countries. Explanations as to how the agriculture sector is impacted by the natural resource sector vary. National government's failure to invest in agriculture due to the presence of natural resource can make a country's economy suffer when there are declines in the price of oil or minerals (Auty 1993). Steven (2003) argues that a curse can manifest where easy available rent from oil dissuades government and political elites from investing in agriculture development. Ross (2012) on the other hand, argues that a resource rich economy can suffer a curse due to a 'resource movement effect', where capital drifts from the agriculture sector to the natural resource sector. Given that the natural resource sector can sometimes negatively affect a country's agricultural development, this section analyse whether or not Ghana's oil industry has negatively impacts its agriculture.

Agriculture has been the backbone of Ghana's economy for the past fifty years, with an annual growth rate of 5% since the 1990s. Subsistence agriculture (farming to feed the family) serves as a source of employment and livelihoods for most rural communities in Ghana. However, because most of the agriculture is rain-fed, with limited application of fertiliser, the capacity of the sector to generate sufficient income for farmers is limited (Dzanku and Aidam 2013; Ewusi 2013a). The sector however, provides foreign exchange through export of cocoa and non-traditional crops like mango, and contributed 40% to GDP in the 1990s and early 2000s. Government investment in the sector in terms of inputs such as fertilizers and irrigation facilities is limited, except cocoa, due its status as key foreign exchange earner.

As pointed out earlier, the resource curse literature noted that a booming natural resource sector can negatively affect agriculture because a government can become less concerned with investment in the sector when it has revenue from natural resources. Table 5.12 helps to analyse how Ghana's agriculture and its fisheries sector have performed economically from 2003 to 2014. Prior to oil discovery in 2011, agricultural growth fluctuated (table 5.12). It grew by 6.1% in 2003, declined to 2.5% in 2007, and increased again to 5.1% in 2008.

Table 5:12: Growth rate of agricultural sector (%), 2003 – 2014

Year	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
Agric	6.1	7.0	4.1	4.5	2.5	5.1	6.1	5.2	0.8	2.3	5.7	4.6	0.04
Fisheries	3.0	3.5	-1.2	15.0	-7.2	17.4	-5.7	1.5	-8.7	9.1	8.9	-5.6	5.3

Dzanku and Aidam 2013; MOFEP 2010 – 2016, GSS 2010 – 2015

The performance of the agricultural sector is influenced by multiplicity of non-human and human actors and factors, such as weather (rainfall pattern), technologies, policies from the Ministry of Food and Agriculture such as the provision of fertiliser, disease and pest control, local farming practices, and global food and commodity prices. According to Law (1999, p. 3), viewing phenomenon [reality] through ANT's network lens means social divisions such as nature and society; human and non-human; materiality and sociality is problematic since these things intrinsically linked. From an ANT perspective, social phenomena such as how the agricultural sector performance should be seen as fluid, multi-layered and multifaceted. Social realities are not out there to be discovered by either social actors or natural laws, they are performative and multiple (Mol 1999), and enacted through diversity of practices and connectivities. The changes in the performance of agriculture can be attributed to interactions between rainfall patterns, technologies, fertiliser, disease and pest, politics, local farming practices and global food and commodity prices.

Ghana's agricultural sector maintain a quite an impressive growth rate in 2009 and 2010 (5.2%) (MOFEP 2010; GSS 2015a). In 2010, the growth in agriculture was led by crops due to a good rainfall pattern, and livestock and cocoa production which saw improvement in growth due to increases in producer price (global price increase), disease and pest control and an improvement in fertiliser application (MOFEP 2012). Ghana's agriculture however, had one of its worst performances (0.8%) in 2011 and incidentally, this coincided with the commercial production of oil (MOFEP 2014; Ewusi 2013b). Though based on the traditional notion of the resource curse, one may be tempted to point out that the country suffered from a curse in 2011, we also have to look at other compounding factors such as poor rainfall patterns, issues on fertiliser application, global food prices and local farming practices. We also have to analyse the trend in growth rate of the sector in subsequent years in other to draw any definite conclusions. In 2012, there was improvement in the growth rate in agriculture to 2.3% and this was also partly due to increases in fertilizer subsidy, agriculture mechanization and livestock and fisheries development programmes (Ministry of Food and Agriculture [MOFA] 2013; MOFEP 2013). It could also be as a result of a rebound effect[14] (Maxwell et al. 2011) of improved technology in the agricultural sector and unintended side-effects of increase in consumption due to increase revenue from oil in the previous year. In 2013 and 2014, there was a further recovery, and the sector's growth increased to 5.7% and 4.6% respectively, mostly driven by good weather (rainfall). Despite the improvement in the agricultural growth rate after 2011, the sector's share of GDP has been on a decline, it was 29.8% in 2010, 25.3% in 2011, 22.7% in 2012 and 21.3% in 2013, and is due to a stronger growth in industry (oil) and service sectors of the Ghanaian economy (MOFEP 2014).

The growth rate in the fisheries sector has also been fluid between 2003 and 2014. For instance, it grew by 3.0% in 2003, shrunk by -1.2% in 2006, increased suddenly to 15% in 2006 and shrunk again to -7.2% in 2007. Factors that influence the volume of fish catch and the growth in the sector include the weather conditions such as cold sea surface temperatures that often bring nutrient to the sea surface which the fish are attracted to, adequate supply of government subsidised fuel for fishing, competition from foreign fishing vessels and price of fish in the global market. The fishermen in along the coast of Ghana often have bumper harvests due to cold sea surface temperatures current that bring nutrient to the surface of the sea between July and September which the fish are attracted to.

[14] See Maxwell et al. (2011) for a EU Project on discussions on the 'rebound effect'

Due to the variability in the growth rates in the fisheries sector, assigning a definite reason for the fluctuations is difficult, but it can be observed that in election years, provision of fuel subsidies for fishermen could have positively impacted the growth of the sector[15]. In 2008 and 2012, both election years, the fisheries sector growth in Ghana increased, growing by 17.4% and 9.1% respectively. Besides factors such as global food prices, good weather, pre-mix fuel, the petrol used by the fishermen in Ghana, is critical for the fishing industry, and often, the ruling government subsidizes it for the fishermen during election years. This could influence the high growth in the fisheries sector in election years. In 2011, without elections, the fisheries sector performed poorly (MOFEP 2014), the same year that the national economy grew by 14%, largely driven by oil. But as to whether or not the oil sector affected the decline needs a more detailed community specific analysis (the focus of the next chapter) since the factors that shape the fishing industry are complex. Recent growth increases in the fisheries sector is attributed to investments in aquaculture by the private sector (MOFA 2013). Based actor-network theory, the agricultural sector development can be analysed as conditioned and shaped by interactions between globalised assemblage of human and non-human actors, politics, agencies and structures.

There is an increasing anxiety among some policy makers that Ghana is losing focus on agriculture which has been the backbone of the economy over the years where 'almost every policy and investment strategy since 2010 has focused on how to attract investments into the oil sector'[16]. Government's emphasis of policies on oil and a seeming neglect of agriculture can be problematic as agriculture employs and provides livelihoods for about 70% of the Ghanaian populace. Oil, since 2011 has been the focus of Ghana's development policy due to its higher revenue and the high return on oil investment for both the oil companies and government. Due to the government's current apparent focus on oil, it is not surprising to witness dwindling agriculture growth in Ghana since 2011. The sector also seemed to receive limited financing from oil revenue, based on the ABFA allocation from 2012 to 2014 (MOFEP, 2015; 2014; 2013). It seems limited government investments in the agriculture sector, poor infrastructure and limited external investment are contributory factors to the poor economic growth and high unemployment rate in Ghana.

[15] Interview, Department of Fisheries, University of Cape Coast, June, 2014, Cape Coast
[16] Interview, Ministry of Agriculture (MOFA), August 2014, Accra.

5.10 Localisation of employment, skills and technology

The oil industry is criticised for the limited employment it creates due to its capital intensive and highly skilled nature (Humphrey et al. 2007; Karl 2003). As a technologically driven industry, it requires that activities are undertaken by highly skilled personnel, since errors can have serious economic and environmental consequences. Based on the experiences of most resource rich countries, there are concerns that Ghana's oil industry will also create limited employment, and to make matters worse, even for the limited employments that the industry creates, the country seems not have qualified persons to occupy them. This section scrutinizes how much employment the oil sector created in Ghana, who gets employed, what are the working conditions and what has been the impact on living conditions.

Right from the commencement of oil production, the government recognised the implication of local participation in the oil industry for national development and employment creation. The government's vision for the oil sector stated:

> 'The government of Ghana is committed to deploying an effective local content and local participation policy as the platform for achieving the goals for the oil and gas sector with full local participation in all aspects of the oil and gas value chain of at least 90% by 2020' (Government of Ghana 2010, p.4).

And also …

> 'An operator in the petroleum sub-sector shall ensure that opportunities are given as far as is possible for the employment of Ghanaians having the requisite expertise or qualifications in the various levels of the operations' … and 'a detailed annual recruitment and training programme for recruitment and training of citizens of Ghana in all job classifications and in all aspects of petroleum activities, which may be carried out in or outside the country' (Government of Ghana 2010, p. 8).

Theoretically, as the policy document noted, the government seems to be committed in using the oil industry to the benefits of Ghanaians through employment creation and skills transfer. The oil companies in Ghana, also in principle recognised their obligation to encourage local participation through employment of locals. Tullow (2012), in their 2012 report stated that, creating jobs is one of the main preoccupations of stakeholders in the industry in Ghana. Tullow further stated that its employees in key locations in Africa are locals, and this is consistent with their policy of 'localisation of employment' in the oil industry in countries it operates in.

Localisation of employment is ensuring that, as much as practicable, citizens of a country where oil fields are located are the ones employed to work in the sector. According to

Tullow, localisation is more than just ensuring its country assets are operated and managed by local staff, but also to ensure talent development in host countries as part of succession plans for local and international employment opportunities (Tullow's CSR 2012, p. 52). In theory, training for the oil sector appears prominent in Tullow's company policy. Also, data from Tullow revealed that the percentage of total locals it employed in Ghana was 85%, 86% and 87% in 2011, 2012 and 2013 respectively (Tullow 2013). This is quite an impressive number in percentage terms, but it also raise questions as to where the locals are employed, how much they are paid compared to expatriates, how conducive are their working conditions and how secure the tenure of their work is (are the work temporary or permanent).

Ghana's national oil company, GNPC also reports of a recruitment committee made up of GNPC and the unit operators to recruit the staff for oil operations in the country, with an anticipation that 60 – 70% of initial employments to be filled by Ghanaians, and a plan to ensure an increase in local employment to 90% within 5 – 10 years (GNPC 2014). Data from Kosmos also revealed it provided direct employment for 50 Ghanaians in 2013, and this forms about 91% of its total in-country employment (Kosmos 2013). Further, out of Kosmos's total global employment of 249 in 2012, 158 are Americans and 78 Ghanaians (Kosmos 2012; 2011). This indicates that oil companies still rely on some expatriates for their operations due to limited skilled personnel in Ghana and the oil companies can also reduce cost by hiring contract expatriates workers.

A study by ISODEC (2014, p. 12) revealed that the oil and gas industry in Ghana generated a considerable direct employment in the upstream sector, with not less than 60% of Jubilee field's total in-country employment categorized as locals. Tullow's economic impact report in 2012 also revealed that the company generated a total of US$996 million in revenues and out of this amount, 29.7% yielded direct economic impact in employment income to Ghanaians, taxes to the Ghana government and other social investments (Tullow 2013). The oil companies also, as part of their corporate social responsibility (CSR) invested in social facilities such as building schools and clinics in some coastal communities near their operations (Tullow's CSR 2012; 2013). Although oil companies investing in CSR is important, technical training of locals to participate in the industry is seen by the Ghana government as critical, since it will enable the country to undertaken further oil exploration on its own.

Capacity building and technology transfer are important if Ghana is to benefit from the oil sector (ISODEC 2014). Kosmos (2012, p. 1) recognises that for oil rich governments to use their natural resources for national development requires effective use of revenue and skills training for locals to participate in the sector. It also acknowledged that in some cases, stability

in a country depends on its ability to generate employment for youth. The government, since 2011 has allocated resources for capacity building so as in the long term, the Ghanaian oil industry can be operated by the locals. Data from the ministry of finance, based on ABFA showed that since 2011, substantial resources (GH¢111,959,738 in 2011 and GH¢20,183,359) have been allocated to capacity building at all levels of the oil and gas industry (MOFEP 2013; 2014). Institutions like GNPC, Petroleum Commission (PC), and EPA have received various levels of funding for petroleum sector development. Education programmes are also being tailored to provide man-power training for the oil industry. Kwame Nkrumah University of Science and Technology (KNUST) and Takoradi Polytechnic have received oil and gas capacity building support (ISODEC 2014). The GNPC also has its Oil and Gas Learning Foundation set up in 2013 to help schools in Ghana with learning materials.

The US$5 million dollar Enterprise Development Center (EDC) has also been launched in 2013 to train Ghanaians in oil and gas services. The Jubilee partners are supporting the Ghana government with funding to run the centre from 2013 to 2018. Enablis Entrepreneurial Network Ghana (a global entrepreneurial training organisation) has been selected to run the EDC[17]. Its duties involve business training, capacity building programmes, advisory services, and access to markets and information. The oil companies were involved in the selection of who and how the EDC operates since they are concerned about the training for those that will be employed in the oil sector. There are indications that the effort of EDC is yielding results. For instance, since 2013, Hydra Offshore, a Ghanaian SME registered with the centre, started providing training programmes for subsea engineering services to local operators (EDC 2014). It is estimated that within the first year of its establishment, 250 Ghanaian Small and Medium Enterprises (GhSMEs) have registered with the centre and benefited from business advisory and training services (Daily Graphic 2014; EDC 2014).

EDC is acting as a focal point of coordination between SMEs and the oil companies, their contractors and sub-contractors. Training from EDC has equipped some people with skills and expertise to take up roles in the oil and gas sector. Six training programmes were held between 2013 and October 2014. These include: managing small business enterprises; business ethics and compliance; business planning for small businesses; budgeting and financial management; business spreadsheet applications; and introduction to oil and gas industry. It is argued that: EDC represents a significant milestone in achieving the local-content objectives

[17] http://www.enablis.org (Enablis is an international organisation operating at grass-root level in developing countries to empower local entrepreneurs and supports them in the growth of their businesses in conjunction with government, private sector and civil society.

through provision of business development services to SMEs, hence oil companies have no excuse to deny employment to Ghanaians[18]. Based on the training such as business planning and oil and gas budgeting that EDC have offered so far, most of the technical engineering works in Ghana are carried out by expatriates. The training programs for Ghanaians appeared more focused on business training and clerical services associated with oil and gas, instead of empowerment in technologies for oil exploration, drilling, production and refinery.

It also appears the Ghana government's aim of ensuring 90% employment of locals within the next 10 years with the 'localisation of employment programme' is difficult to achieve due to limited local man-power to ensure effective functioning of the oil industry. A study by Tullow in 2012 with key stakeholders in Ghana revealed that local employment is not as substantial as the government, local businesses and the populace anticipated (Tullow's CSR 2012, p. 23). Even where employment is provided for Ghanaians, most is located at the lower echelons of the oil industry such as welding, chefs, and electricians (Ablo 2012; Darkwah 2013). The high echelon positions require extensive offshore experience and technical skills, which are lacking in Ghana at present. Expectations have to be managed as employment opportunities in the oil sector are limited. The government target of over 90% in the next ten years is overly ambitious, since gaining experience will take time, as well as the training. Also, most programs to train Ghanaians to be employed in the oil industry are focused on clerical work like oil and gas accounting and business training (EDC 2014) instead of the technical areas like engineering and oil drilling. TOCs supporting training programmes such as oil and gas accounting in Ghana will conditioned the country to be less technological quipped to participate fully in exploration, engineering and oil drilling hydrocarbon industry. This is reinforces the existing governance structure of the hydrocarbon assemblage where natural resource rich economies in the developing world are dependent on TOCs for oil exploration since the TOCs control the technologies and capital.

Ghana's experience also seems to point the fact that the training and employment opportunities in the oil sector are differentiated. While training programmes delivered by EDC provides opportunities for some Ghanaians to be employed in the oil sector, others like the fisher folks in coastal communities whose livelihoods are directly affected by oil exploration do not benefit from them. These fisher folks do not have formal education, hence the EDC training programmes offer little opportunity to empower them to take up employment in the oil sector. Thus, while some few educated and small businesses are benefiting from the oil sector,

[18] Interview, EDC, October, 2014, Takoradi.

other classes such as fishermen appear to be negatively affected where fish are attracted to oil rigs but fishermen are not allowed to fish there. The story of oil and employment is complex. As Obeng-Odoom (2015a, p. 14) argues, some workers have benefited, but they have done so substantially less than foreign workers. Local workers have missed out, and even where there are jobs, they do not necessarily go to persons whose livelihoods seem to be impacted or disrupted directly by the oil industry. Women also seem to have remained at the margins of oil sector employment. Darkwah (2013) also argues that, some of the youths' dream of working in the oil sector has been shattered, even after going through oil and gas training programmes.

Even the few Ghanaians who got employed in the oil sector, operate in poor working conditions and are paid less compared to expatriate workers (Ablo 2012). In August 2014, Ghanaian oil rig workers on FPSO Kwame Nkrumah held a demonstration on the rig at sea to register anger against the unfair salaries and poor working conditions. The rig workers clad in red attire and red bands wielded placards with the inscriptions; 'Enough Is Enough', 'Equal Rights and Justice For All Workers', 'Onshore Is Better Off, Offshore Is Worse Off', 'Least Paid Offshore Workers', 'Modec Local's Pay Is Chaos', 'Oil Real, Salary Fake', and 'We Are Hungry'[19] to highlight their plight. Thus, in analysing the employment challenges associated with the oi industry or the curse, besides the often cited few number of people employed by sector because of its capital and technology intensive nature (Auty 2001; Sachs and Warner 2001; Karl 1997), there is also the need to examine the poor working conditions and low salaries that locals sometimes earn.

In 2013, prior to the demonstration, the Ghanaian oil workers complained of the unfair salaries, disrespect from expatriates and poor terms of employment with local recruitment agencies. It is suggested that recruitment agencies, receive large sums of money (in dollars) as basic salaries on behalf of Ghanaian workers but the agencies pay the workers a small amount of this as salary. According to reports, there seems to be gaming in oil sector employment where some recruitment agencies for instance, receive US$5,500 as a fee for basic monthly salary for some categories of workers, plus other allowances, totalling US$7,000 per month per person, but those workers actually receive only US$450 per a month[20]. Thus, while opportunities are created for the recruitment agencies to enrich themselves, the oil workers are deprived of their share of the national oil wealth. The suffering of the workers is interwoven with the prosperity of the recruitment agencies. The oil sector can be seen as a double edge

[19] 20th August 2014 Daily Graphic edition.
[20] Adom FM News, 20th August 2015.

sword, creating opportunities and challenges simultaneously (Obeng-Odoom 2014a). It appears oil is not inherently a curse or blessing, but as to whether people benefit from it or not is dependent on one's status in society, spatial difference and government policies that allows resources to be strategically deployed for national development. The benefits that the state and populace can be derived from the oil industry is based on how the oil industry is governed such as how transparent and efficiency in oil revenue utilised.

5.11 Beyond a democratic polity: oil and corruption in Ghana

Researchers have raised concerns about the presence of natural resources (oil) and their impact on economic growth, governance and corruption (Sachs and Warner 2001; 1997; Humphrey et. al 2007; Collier 2010). Natural resource rich economies, often in the developing world, are cited as having not used their rich natural resources for the benefit of the general populace due to weak democracy and institutions (Brunnschweiler 2008). These countries are often ruled by dictators, and even where elections are held, they are often flawed with vote rigging by incumbent governments (Herb 1999; Lowi 2009; Ross 2012). Poor accountability, weak institutions and corruption by the political elites in the use of natural resources have often undermined their use to promote national development. The question is: is there a deterministic relationship between oil, governance and corruption or how does oil mediate or is implicated in bad governance in the national political economy of a country?

Corruption can be defined as the misuse of public power and resources for private gains (Buchberger 2011). It can also relates to insider trading, where individuals have access to non-public information about company, and hide it from other investors in order to make super profits. Transparency International (TI) (2012) contends that corruption goes beyond taking an envelope filled with money, it also involves politicians and public servants placing their interests above those of the public and when public officials demand money and favours from citizens for services that should be free (also see Commission on Human Right and Administrative Justice [CHRAJ] 2014; 2013; 2012; 2011; 2010; 2009). Companies can also be involved in corruption when they use money to influence politicians or persons in authority to win contracts. In Ghana, corruption allegations, whether real or not are a common phenomenon (Awal 2012; Hutchful 2002; Boafo-Arthur 1999; Herbst 1993; Rimmer 1992; Chaza 1991; Frimpong-Ansah 1991). From Ghana's first president, Kwame Nkrumah and his Convention People's Party (CPP, 1957 – 1966) government to date, successive governments in Ghana have

been accused of corruption, especially by opposition political parties (Awal 2012; Agyeman-Duah 2005). Corruption and economic mismanagement have been used to justify most military coups in Ghana in the past. Due to the rampant nature of corruption accusations, Frimpong-Ansah (1991) once described Ghana as a 'vampire state'. Even ever since Ghana transitioned to democracy in 1993 to date, with supposed separation of powers between the executive, judiciary and parliament, and the emergence of CSOs to ensure checks and balances, corruption accusations against political opponents and public official still exist (CHRAJ 2013; 2011). There are often newspaper and radio reports of corruption allegations, often against political opponents. Attempts by governments to deal with corruption through prosecution is viewed by the political elites who are affected as a 'political witch hunt', thus, raising questions as to how a democratic polity can minimise corruption and improve governance in Ghana.

Since Ghana is often cited as one of the most mature democracies in Africa, where there have been alternation of power between two parties in Africa, Ghana's experience with the oil industry provides a case to analyse whether or not democracy can insulate a country from the corruption and poor transparency associated with the oil sector, or how these problems manifest differently in a democratic setting. It also raises questions as to how a democratic polity can impact and be impacted by the oil industry. To understand this, we have to analyse how Ghana has performed on corruption perception indexes, transparency and efficiency in oil revenue management, how oil monies might have influenced the country's democratic polity such as elections and how transparent are the activities of oil companies operating in the Ghana.

Even before Ghana started oil production in 2011, questions were raised about the secrecy that surrounded the signing of oil contracts in 2003 with little parliamentary scrutiny. Lack of parliamentary scrutiny can create opportunities for corruption for politicians and oil companies involved. In 2008, the EO group was accused of using its connections within the NPP government to acquire its share of the Jubilee field which was later purchased by Tullow for US$300 million dollars (Buchberger 2011, p. 5). It is argued that allegations of corruption is prevalent in contractual arrangement in Ghana's oil sector because contracts are awarded based on an 'open door' instead of a 'competitive bidding' approach (ISODEC 2014). In the 'open door' approach, as in the case of Ghana, oil blocs are not advertised. Instead, oil companies acquire their oil blocs through the Ministry of Petroleum and Energy based on proposals that are submitted. The terms of the contracts are held in secret, hence the suspicion that monies have exchanged hands before contracts are awarded. There is the suggestion that the government awarded such a seeming generous contracts where the country has 10% participation interest in Jubilee field to oil companies like Tullow because of the gamble the

companies took to invest in deep-water exploration in Ghana where little exploration has taken place in the past (ISODEC 2014; 2012). But as ACEP (2014) argued, such administrative procedures for awarding oil contracts undermines transparency and accountability as the administrative processes are often open to abuse, rent seeking and corrupt practices. Transnational oil companies can sometimes be complicit in these corrupt practices as they do not want to be out-bid in the award of contracts. As pointed out: some multinational oil companies are sometimes beneficiaries of the weaknesses and loopholes in the institutional arrangement in the country'[21]. In the future, Ghana might consider competitive bidding approaches where oil concessions are advertised for oil companies to bid. This has the potential to reduce the allegation of corruption in the award of oil contracts and also reduce public perceptions of corruption in the oil sector in Ghana.

Transparency International (TI) Corruption Perception Index (CPI) is used globally to gauge people's perception of corruption in countries. The CPI is used to rank countries according to perceived levels of public-sector corruption, zero score (0) being the most corrupt and hundred (100) the least corrupt country. The CPI draws on different assessments and business opinion surveys carried out by independent reputable institutions (TI 2013). These surveys are used to compile the CPI on questions relating to the bribery of public officials, kickbacks in public procurement, embezzlement of public funds, and strength and effectiveness of public-sector anti-corruption efforts (TI 2011). Perception is ideal in measuring corruption since most corrupt activities are typically hidden. Perceptions can also provide us with a window to view realities. It is suggested that measuring prosecutions while offering 'non-perception' data, sometimes reflect less on the prevalence of corruption in a country since factors such as freedom of the press or efficiency in judicial system influence information on corruption (TI 2014; 2012; 2011). The CPI complements other tools for measuring corruption and integrity of public and private institutions (TI 2011).

Table 5.13 shows Ghana's ranking on the CPI from 2008 – 2014. Based on the CPI, though Ghana had one of its worst scores on the CPI (39) in 2011 when oil production started, it's score on the global perception index has improved since then to 45 in 2012, 48 in 2014 and 47 in 2015 (TI 2014; 2013). When we look only on the CPI, then it seems corruption has actually declined since Ghana started oil production in 2011.

[21] Interview, CHRAJ, September 2014, Accra.

Table 5:13: Corruption perception index (CPI), Ghana, 2008 - 2015

Year	Score	Rank
2008	39	67/180
2009		69/180
2010	41	62/178
2011	39	69/182
2012	45	64/174
2013	46	63/175
2014	48	61/174
2015	47	56/180

Transparency International 2008 – 2015

Though relying solely TI's CPI can be problematic since it mostly relies on opinions of foreign companies, it still remains one of the credible mechanism of accessing corruption globally.

Ghana Integrity Initiative's (2010) and Revenue Watch Transparency Index (RWTI) in 2010 however ranked Ghana poorly on transparency in the natural resource sector. RWTI measures the level of government disclosure of information on revenue earned and how it is spent from oil, gas and mining. Natural resource rich-countries are grouped into three. The first group is the comprehensive revenue transparency (score of 67 – 100) countries provide their citizens with substantial information on revenue from the natural resource sector. Examples of these countries are Norway and Brazil. The second category are partial revenue transparency (34 – 66) – countries which although provide some information to their citizens, transparency gaps exist. Nigeria, South Africa, Botswana and Angola are classified within this group. The third category are the scant revenue transparency (0 – 33) group and these countries appear to disclose the least information on the natural resources sector. Ghana (score 32.3), Tanzania, DRC, Equatorial Guinea and Algeria are in this group. And although the index does not relate exclusively to oil, Ghana's poor score provides us with an idea of the levels of transparency in the country's natural resource sector (including oil), where for instance, even when parliament ratifies petroleum agreements, access to such information is limited to the public due to the absence of a Right to Information Bill (GII 2013). The oil companies are also reluctant to disclose information as they do not want to offend the government as this might affect their chances of securing further contracts. Further, a study by ISODEC (2014), a CSO in Ghana, suggests that since 2011, perceptions of corruption in politics and public services have increased. There have also been several allegations of corruption reportage in the Ghanaian

media[22]. But it seems these are allegations are not enough basis to argue that the country experiencing curse with regards to oil-related corruption as indicated in the TI's CPI.

In theory, the oil companies in Ghana are aware of their global obligation not to get involved in corrupt practices as part of the EITI. Tullow (2013) contends that it takes issues of corruption seriously. To curtail corruption and ensure transparency in the sector, Tullow publishes monies paid to Ghana Government as stipulated in the Extractive Industry Transparency Initiative (EITI) (EITI 2013; 2011). There is also a zero tolerance for corruption code of conduct for employees (Tullow 2013). In 2013, Tullow developed the 'Speaking Up' campaign to ensure that its employees report suspected cases of corruption. Employees and contractors can raise concerns of corrupt practices internally or via an independent anti-corruption institution. It is reported that due to this anti-corruption initiative, Tullow received 26 complaints on corruption, leading to 24 investigations, and it resulted in dismissal of eight individuals and termination of two supplier contracts in 2013 (Tullow 2013). According to Tullow, while these breaches of good governance practices are disappointing, it is encouraged by the awareness of the company's zero tolerance for corruption policy and staff's ability to raise concerns (Tullow 2013). Supplier compliance to non-corrupt practice is also strongly advocated by Tullow. Tullow has also organised educational fora where representatives of suppliers companies are exposed to Tullow's safety, local procurement processes and anti-bribery stances (Tullow 2013).

Ghana has done well in terms of laws on revenue management, local content policy and partly on expectation management of the impact of the petroleum sector. There are improved laws and policies which guide the oil sector to ensure transparency. Ghana also ratified some international treaties such EITI and 'Publish What You Pay' which seek to ensure transparency in the oil and gas industry. However, just like any human institutions, the management of the oil industry in Ghana is confronted with challenges. It seems the discourse of oil revenue management in Ghana has focused very much on transparency but little planning have been put in place to monitor whether or not the projects were carried out and finished on time. As reported by the Public Interest and Accountability Committee (PIAC), the Ministry of Finance and Economic Planning does not seem to have implemented the plan of expenditure from

[22] http://graphic.com.gh/features/opinion/45918-corporate-governance-practice-and-incidence-of-corruption-in-ghana.html (accessed 12 July 2015); http://www.ghanaweb.com/GhanaHomePage/NewsArchive/The-Genesis-And-Effects-Of-Corruption-In-Ghana-214048 (accessed on 10 June 2014); http://www.aceplive.com/corruption-in-oil-gas-will-always-exist-experts-say (accessed on 13 July 2015).

petroleum revenue approved by parliament in the 2012 budget, especially, as no details have been provided for the expenditure on the priority areas. The expenditure item on 'capacity building' was not fully explained (PIAC 2012, p. IV). This shows that although the government signs-up to international initiatives like the EITI, their implementation is problematic since such treaties are voluntary.

Oil and its implications for corruption has generated a lot of interest in Ghana because the country is a late oil producer. It's political and governance landscape is relatively different from other African countries when they discovered oil. Compared to countries like Nigeria whose oil sector was ruined by corruption and poor revenue management (though there are recent improvements) (Ghazvinian 2007; Karl 2003; 1997) due to poor institutional arrangement prior oil production, theoretically, the same cannot be said of Ghana. There seems to be a limit to an institutional approach to natural resources governance due to the inherently political nature of natural resource exploration and production (Phillips et al. 2015). Minimising corruption in the management of resources goes beyond having institutional arrangements, it depends on how the institutions function, degree of independence, the politics that surround how the institutions function and checks and balances in the system.

There were initial fears that oil can be a threat to Ghana's democracy. The West Africa Network for Peacebuilding (WANEP), a CSO, in 2009 warned that the jubilation that greeted Ghana's oil discovery must be treated with only cautious optimism as the results from other natural resource rich countries in Africa have not been encouraging (WANEP 2009, p. 10). WANEP advocated for transparency in the management of Ghana's oil revenue and education on the impact of oil to manage expectation among the citizens (WANEP 2012; 2011; 2010; 2008). Buchberger (2011, p. 2) also argues that Ghana's democracy can be at risk due to the discovery of oil, since history has shown that a democratic polity is reversible. He argues that, there are instances in history where democracies such as in Germany, in the 1930s and in Africa (between the 1960s and 1990s) suffered setbacks. Ghana must be wary of the dangers that oil can pose to the country's democracy since it tends to raise expectations of improved lives overnight, and where such expectations are not met, the disgruntled groups can resort to violent to get their share of the revenue (Basedau 2005). Likewise, where the government does not use oil revenues in a socially and regionally balanced way, it can cause unrest when social groups or regions – especially oil producing regions feel marginalised. Hence, though Ghana is relatively peaceful, it is still an ethnically heterogeneous which can provide potential for polarization (Buchberger 2011, p. 5 – 6) and this can threaten its democracy.

Often, there is mistrust among politicians on how contracts are awarded and how oil revenues are utilised in Ghana. In 2009, due to a change in government from NPP (2001 – 2008) to NDC, the NDC government was suspicious of some of the contracts, including EO group, who was accused of using its connection with the NPP to secure the oil concessions fraudulently. On how oil revenues are utilised, in the 2012 election, the main opposition political party, NPP accused the governing NDC of using oil revenue to finance social services such distributions of computers for political expediency[23]. They alleged that, the distribution of the computers stopped after the 2012 election. According to Ghana Integrity Initiative (GII) (2013), the local chapter of TI, democracy functions when elections are deemed to be generally free and fair, devoid of fraud and corruption.

This study shows that in a country like Ghana, where elections are viewed as a zero-sum game, where the political party that wins power has access to the state resources, revenue from oil can pose some challenges in democratic process. In the 2012 presidential and parliamentary elections, there are suggestions that some monies, perhaps exchanged hands both at the lower and high echelon of Ghanaian society to win support[24]. There also the feeling that providing goods and services in rural communities during elections are increasingly becoming the norm rather than the exception, resulting in situations where politicians are forced to look for resources to purchase and consolidate their patronage. The seeming corruption of the electoral and governance systems in Ghana raises serious issues about Ghana's value system of wealth, honesty and integrity[25]. When we seem to worship wealth without questioning its source, we maybe indirectly or unknowingly furthering corrupt practices. Corrupt practices and tendencies can become embedded in the country's social system, with this social system shaping and mediating governance of the country. With more oil revenues being injected into Ghana's economy and politics, incumbent governments have more incentive to perpetuate their stay in power, while oil also motivates opposition parties to spend more resources so as to gain political power. Leading up to the 2012 election, the incumbent government (NDC) spent a lot money on social services, resulting in a budget deficit of 14% of GDP[26]. How oil has shaped Ghana's development shows that, although the country cannot be said to be experiencing a full-blown curse, there are challenges associated natural resource windfalls due to their volatility, capital and technological intensive and fetish appeal, and their impact differs across space.

[23] Interview, Integrated Social Development Centre (ISODEC), July, 2014, Accra.
[24] Interview, Centre for Democratic Development (CDD), November, 2014, Accra.
[25] Interview, CHRAJ, December, 2014, Accra.
[26] Interview, Centre for Democratic Development (CDD), November, 2014, Accra.

5.12 Towards a more network analysis of the national impact of oil

This chapter analyses whether or not Ghana is experiencing a national scale resource curse. The curse is explained by an inverse negative relationship between natural resource endowment and poor economic growth. It also relates to how natural resources mediate and are implicated in other development challenges such as poor governance and corruption, government borrowing and debt, currency movement, neglect and/or decline of manufacturing and agricultural sectors, environmental degradation and conflict (Watts 2010; Alexeev and Conrad 2009; Brunnschweiler and Bulte 2008; Mehlum et al. 2006; Sachs and Warner 2001).

The national scale analysis showed that although oil has been problematic for Ghana's development such as increased in its public debt, the country is not experienced a wide-scale curse such as poor economic growth, poor governance and corruption, Dutch Disease, industrial and agricultural sector declined and environmental degradation. While the oil industry has had a positive impact on economic growth rate, provided some employment, increased FDIs and stimulated some growth in the industrial sector, it has increased Ghana's debt due to more incentives and opportunities to borrow, sometimes backed by oil. There are some declines in agriculture and industrial sector growth, though this cannot be attributed to the oil sector investments. The changes in the performance of Ghana's agriculture can be attributed to interactions between rainfall patterns, technologies, fertiliser, disease and pest, politics, local farming practices and global food and commodity prices. Ouma (2015) for instance used network perspective to show how Ghana's local farmers are enrolled and assembled into the global export markets.

The impact of oil manifest unevenly and sometimes exhibit contradictory tendencies. For example, whereas between 2012 and 2015 Ghana's GDP, industrial and agricultural growth rates are relatively declining compared to 2011, the country has experienced improvements in the provision of social services such as education and health. In Ghana, it seems the political elites use the provision of social services to the citizens (nationally and locally) as a means of 'enrolment' for electoral purposes. The improvement in the provision of social services such as health and education seem to reflect how the oil revenue are utilised in Ghana. Oil exploration and production in Ghana can be seen as creating opportunities and challenges, with its impact differentiated across space and class. Obeng-Odoom (2012) argues that there is no uniform curse or blessing, for the general populace, but they co-exist. Both challenges and blessing associated with natural resources can co-exist, but in the case of Ghana, democratic pressure seems to have made the government responsible by using oil windfalls for the provision of social services.

The chapter argues that the factors that mediate and shape the national scale challenges that oil poses to Ghana can be analysed as a 'globalised assemblage' that is made up of actors, agencies and structures. The globalised assemblage includes national politics, TOCs, capital and technologies, ideas, global interests and initiatives like EITI and local politics. Interests and activities of TNCs, foreign governments and global initiatives like PWY P and the EITI mediate how natural resource revenues are used in the resource rich-countries, if the governments are signatories to them. As actor-network theory shows, phenomena that appear enclosed are in fact, produced in networks by diverse actors (Law 1999) and they manifest unevenly across space. There is the need to move analysis of the impact of oil beyond the national scale, in order to appreciate the differentiated impact of natural resource windfalls. As Adusah-Karikari (2015) and Ray (2006) suggest, it is imperative to move from nationalizing and universalising countries experiences of resource-based development, to a more nuanced contextualised space, class and people's experiences. Actors are localized or globalized by the accounts made of them, hence, as Latour (2005, p 204) argues, 'no place dominates enough to be global and no place is self-contained enough to be local'.

6 Chapter 6: Geography and the impact of oil on livelihoods in Dixcove

6.1 Introduction

The curse, as discussed in the previous sections illustrates how natural resource windfalls are implicated in countries' poor economic growth, decline or neglect of agriculture and industrial sectors, weak institutions, bad governance and corruption, environmental degradation, violent conflicts, and poverty and inequality (Auty 2001; Sachs and Warner 2001; Ross 2012; Stevens 2015). Over the years however, the analysis of the hydrocarbon industry and the manifestation of the curse seems to have focused at the state level, paying minimal attention to local economic and political interests or winners and losers across space and class (Phillips et al 2015, p. 2). As Stevens et al. (2013) suggests, local economies are constituted through economic, social and political conditions within and outside the localities, hence the exploitation of natural resources can have implications for local livelihoods. A local 'curse' can be said to manifest where exploration of natural resources such as oil leads to disruption of local economic activities due to pollution of rivers and farmlands, conflicts, poverty, inequality and increased local economic vulnerability (Badmus 2010; Shaxson 2008; Watts 2010; 2004; 2003). Whereas national scale analysis of the curse has been extensive (Auty 2001; Gelb 1998), local level analysis of it, including how it manifestations unevenly and differentiated is limited, except for places like the Niger Delta where oil exploitation has been characterised by conflict and pollution (Obi and Rustad 2011; Watts 2010). This section analyses the impact of oil on livelihoods in Dixcove, Ghana. As actor-network theory recommends, phenomena and how they manifest should be examined in their networks, relations, associations and assemblages (Johannesson and Bærenholdt 2009; Cressman 2009; Latour 2005; Law 1999). The dimensions of the curse or the challenges pose by natural resources to development should also not be analysed as inevitable outcomes that manifest mostly at the national scale in a country. Instead, they should be examined as constituted and mediated by interactions between national politics, global energy discourses, TOCs, capital, technologies, and local politics, and their impacts manifest unevenly across space and class. In this analysis of the impact of oil on the local community of Dixcove, scale is used politically constructed, where the global, national and local are not viewed as geographically fixed bounded spaces, instead as nested hierarchy of interwoven spaces of divergent size and network of actors and agencies (Delaney and Leitner 1997; Leitner and Miller 2006). Since as Latour (2005, p 204) argues, it seems there is space that is self-contained enough to be local or dominates everywhere enough to be global.

The geography of the curse also raises questions about what constitutes a resource and for whom are they a curse? Resources can be defined are things we use to achieve a particular end. They are a means to an end. Resources are socially constructed and Zimmermann (1951) rejected the notion of fixity of resources since they are what humans employ to serve a specific need at a specific time (Property and Environment Report Center (PERC) 2004, p. 4). To Zimmermann (1951, p. 14) the concept of resource is dynamic and functional; and resources are not, but they become through interaction between nature, man, and culture, though nature sets outer limits (PERC 2004, p. 4; Zimmermann 1951, 814 – 15). This study showed that in analysing the curse or the challenges associated with the hydrocarbon industry in Dixcove, Ghana, two resources can be identified: oil and fish. For the government and the TOCs, the oil is the main resource for them since it is source of revenue and profit for them, while for the locals [the fishermen] the fish is their main resource since it serves as a source of local income and livelihood. Since the oil is discovered offshore where fishing has originally be taking place in Dixcove, its exploitation has been competing for space for fishing and local livelihoods who depend on fishing. The government however, has used its coercive power to restrict the fishing space so as to ensure smooth oil exploitation. This study revealed that although oil exploitation has been a blessing [revenue] for the state and the TOCs, but not necessarily so for the locals.

Since Ghana discovered oil in 2007 in the Cape Three Point area, a place that has served as fishing ground for some inhabitants in the area, it seems stakeholders such as the government, international institutions like the World Bank and NGOs have been more focused on institutionalised approaches such as state level transparency in the use of windfalls to avoid the curse which has manifested in some resource rich economies in the developing world (William 2010; Phillips et al 2015). While it is important to initiate polices that can help Ghana to reduce or avoid the national scale curse, there is also the need to recognise how local economies and livelihoods are intertwined with and constituted through national and global political economy. There is the need to examine how oil exploitation can also impact local economies. For a fishing-based community such as Dixcove in the Western Region, Ghana, whose economy and livelihood is shaped and embedded in fishing and its related activities (Stevens et al. 2013), an economic activity such as oil exploitation offshore that obstructs or competes with the fishing industry for space can have adverse consequences for its inhabitants. Interrogating how Ghana's oil industry can negatively affect the fisheries sector due to restrictions on fishing on some parts of the sea and its implication for local livelihoods helps to highlight the geographical dimension of the impact of oil. Since Ghana started its oil

production, there are some concerns that restrictions on fishing due to oil exploration reduces the sea space in which fishermen undertake their economic activities (Asamoah 2013b). Disruption in fishing, which serves as livelihood for local economy through provision of employment and income can have negative impacts on the locals, if alternative livelihoods are not provided. The socio-economic and political lives of women embedded in the fishing industry through smoking and trading in fish products can also be altered due to oil exploration in the locality (Adusah-Karikari 2015; Phillips et al 2015; Wemegah and Kwesi 2014).

Based on the local dimensions of curse, as noted above (Obi and Rustad 2011; Badmus 2010; Watts 2010; 2004; 2003; Shaxson 2008), Dixcove can be said to manifest them if oil production in the area leads to pollution of its environment (sea), generates violent conflicts between the locals and the state or oil companies, destroys or disrupts some local sources of livelihoods without creating alternative livelihoods, leads low income, poverty and inequality, and exposes vulnerable groups (women) to social, political and economic vulnerabilities. This study suggests that although oil exploration near the offshore of Dixcove has negative impacts on the local economy such as pollution of its environment, some conflicts between oil companies and fishermen, decline in local income, increased economic vulnerability of women, and change in social systems and religious practices, there is no large scale manifestation of a curse in the area as in the case of the Niger Delta. This is partly because the democratic setting seems to have made the government more responsive by using the oil windfalls in the provision of social services and this seems to reflect both at the national and local since both of them are interwoven. Ghana also seems to have learned from the bad and good experiences of other countries such as Nigeria and Norway on how to minimise the challenges associated with resource-based development.

Dixcove's experience with oil exploration however, suggests that although the locality might not be experiencing a full-blown curse, there are challenges posed by the natural resource sector that may manifest unevenly across space and time, due to interaction between geography [whether oil is located onshore or offshore], global oil price volatility and energy security concerns and national politics and policies. Oil-driven government borrowing, oil prices volatility which negatively impact government revenue and national economic growth also impacts the local economy. For example, it appears Ghana government borrowing and spending on public sector salaries, social services and foreign exchange demand for import since 2011 have been influenced by the sudden false sense of oil wealth. Meanwhile, these increases in spending also leads to budget deficits, currency depreciation and inflation (BOG

2014; 2013; GSS 2015a; 2014a; 2013) which affects the livelihoods of local economies since goods and services they use for their fishing have become expensive. It seems the increased GDP economic growth that has partly been driven by oil in Ghana since 2011 has not translated into poverty reduction, improvement in living condition and more employment localities such as Dixcove as discussed in the previous chapter (see Planitz and Kuzu 2014).

The rest of the chapter is organised into six sections. Section two discusses the importance of the fishing industry to Ghana's economy. It also discusses the political economy of Dixcove. Section three analyses how Dixcove's embeddedness in a global hydrocarbon assemblage through oil exploration has negatively impacted its environment and aquatic species, including fish. Section four discusses the emergence of non-violent conflict between the fishing and oil industries and its effects on local livelihood. The uneven manifestation of poverty, income decline and employment challenges in Dixcove and its environs is discussed in section five. Section six presents a gendered dimension of the challenges and opportunities that the oil industry present since the fishmongers (mostly women) in Dixcove have to confront economic vulnerability and marginalization, but at the same time have seen some improvement in economic and social status because of their ability to shift to alternative livelihoods like trading to contribute to family well-being in the midst of the challenges that the oil industry poses. Section seven discusses how the impact of oil exploration is differentiated across space and class and the factors that shape its local manifestation are complex. In Dixcove, it is the competing economic interest of fishermen and fishmongers in the use of the sea on one hand, and the state and TOC's [with the technology and capital] interest of constructing oil as national and global resource (despite its localised nature) shape the impact oil in the local political economy. Challenges such as decreased income, loss of livelihood and environmental pollution have to be analysed within a framework of fishermen 'losing the sea space' to the hydrocarbon industry, national politics and policies as well as local processes such as local fishermen using harmful chemicals for fishing.

6.2 Political economy of the fisheries sector and Ghana's development

Fisheries is one of the sub-sectors of Ghana's agricultural sector. The rest of the sub-sectors are food crop, export crop, industrial crop, forestry and livestock (ISSER 2013). Broadly, between the 1990s and 2002, the total agricultural sector contributed about 40% to Ghana's GDP in the 1990s and 2000s, but this has declined to 23% in 2014 (GSS 2015a) due to

expansion in industry and service sectors, and poor rainfall which negatively affected its growth. It serves as a source of employment, income and food security for those employed in the sector through crop farming, livestock rearing and fishing (Ewusi 2013a; Ghana National Aquaculture Development Plan [GNADP] 2012). The fishing sub-sector is important in the provision of the country's protein needs and livelihood for coastal communities.

Fishing in Ghana dates back to the 1700s when the Fantes, an ethnic group in the present day Ghana were engaged in fishing along the country's western coastlines (Clark 2013; Aheto et al 2011; Jorian 1988; Lawson and Kwei 1974). Those days, fishing as an economic activity is a household or community-based, geared towards feeding families and for barter trade. Over the years, the fishing industry in Ghana has evolved into two main categories; artisanal (small-scale or traditional) and industrial which uses advanced technologies like trawlers (Aheto et al. 2011; Amandor et al. 2006; Jorian 1988). There are also two sources of fish in Ghana: inland (freshwater or rivers, lagoons and aquaculture) and marine (sea or ocean) (Zotorvie 2010; National Fisheries Association of Ghana [NAFAG] 2007; Quaatey 1997). Ghana's marine fisheries sector which is likely to be impacted by oil exploration consists of three types of fishing fleets: artisanal canoes, semi-industrial boats [wooden-planked vessels] and industrial vessels [large-scale trawlers and tuna boats] (Bilijo 2014). There were about 70 industrial trawlers operating in Ghana as of 2010, comprising steel fishing vessels, including trawlers, shrimpers and tuna boats (FAO 2010; Zotorvie 2010). Artisanal fishery involves the use of simple gear such as purse seine nets, beach seine nets, drifting gillnets and hook and line, operating from dug-out canoes (FAO 2010; Zotorvie 2010). Fishermen using canoes can fish in all waters in Ghana, but the use of simple fish gears, logistical constrains and the need to avoid conflict with other fishing vessels seem to restrict artisanal fishing to coastal waters within the Inshore Exclusive Zone (IEZ), an area about 30m depth and 6 nautical miles from the shore of the country (Bilijo 2014, p. 9). Some of the artisanal fishermen however, fix outboard motors to their canoes to aid them to fish in the deeper sea and to ensure their safety. The fishing industry is therefore, characterised by technological dualism, with industrial fishing that relies on modern technologies such as trawlers co-existing with artisanal fishing which uses simple gears such as canoes [sometimes fitted with outboard motors] (Zotorvie 2010). The number of canoes powered by outboard motors have increased since 2006 and it appears this is to enable fishermen to fish deeper into the sea to increase fish catch and improve incomes (Bilijo 2014; Aheto et al. 2011; Amandor et al. 2006).

In 2010, there were nearly 11,200 canoes and 12,4000 fishermen operating in 300 landing sites located along the coastline of Ghana (Aheto et al 2011, p. 3). It is reported that the number of canoes increased to about 13,000 in 2014 (Bilijo 2014). This increased number of canoes in the fishing industry suggests that more fishermen will be competing for the same fish, which has the potential to reduce the fish catch for individual fishermen. Decline in fish catch can have implications for local incomes and other livelihoods. Artisanal fishing provides the majority of the national fish catch in Ghana, with the marine sector supplying about 80% of the total catch (Aheto et al 2011; Marquette et al. 2002). It must be noted that because the fishing sector in Ghana is mostly an informal economic activity, there can be challenges with some of the data on the number of canoes and fishermen operating in the sector, and its contribution to local employment, incomes, and national economic growth. This is because data are estimates, even though they provide a general picture about the number of fishermen engaged in the sector and extent of their contribution to the nation's development.

In Ghana, whereas fish constitutes about 60% of national dietary animal protein (FAO 2012; Crawford 2013; Aheto et al 2011, p. 3), there is a deficit in local catch, so some of the fish are imported to supplement it (MOFA 2011). In some rural coastal communities in the country, fish's contribution to dietary needs is even higher, forming almost the whole protein needs of families (Aheto et al 2011; FAO 2005; 2003). Since the year 2000, the fisheries sector accounted for between 3 – 5% of the total agricultural sector's share of Ghana's GDP (GNADP 2012; MOFA 2011). Despite the relatively small share of the fisheries sector's contribution to the country's GDP, it is important for national protein needs, local livelihood and employment in coastal communities. The coastal communities are confronted with development challenges, including poor social services and incidence of poverty. According to the Ghana's Living Standards Surveys (GLSS), the coastal fishing communities in Ghana are among the poorest in the country (Marquette et al 2002; Aheto et al 2011). Poverty in the fishing communities is partly attributed to limited value addition, inadequate storage facilities and decline of prices of fish on the global market. The fishing communities also have limited alternative livelihoods strategies despite the seasonality of fishing as an economic activity. The fisheries sector still remains a source of direct or indirect livelihood and employment for 10% or 2.5 million of Ghana's population (GNADP 2012; FON 2013). Whereas the actual fishing is typically male dominated, women play a significant role in the industry by preserving the fish through smoking and trading them to the final consumers (Bilijo 2014, p. 9). Zotorvie's (2010) study shows that besides actual fishing, there are fishing-related economic activities such as: boat

building and net making; food industries (fish processing, local restaurant and food venders); and transport and petty trading.

Ghana's Fisheries Commission suggests that the country consumes 850,000 metric tons of fish per annum but only 45% of that amount is produced locally due to decline in fish catch, hence the country spends over US$200 million each year to import fish to supplement local production (GNADP 2012; FON 2013). While the national statistics indicates a 30% decline from 492,776 metric tons in 1999 to 333,524 in 2011 (FAO 2012; Crawford et al. 2013), some studies suggest the proportional decline is more alarming in some of the coastal communities (Aheto et. al 2011). There is a suggestion that with the proper investment, the fisheries sector in Ghana can generate over US$1billion in revenue each year (Crawford et al. 2013). If the fisheries sector is worth that much, why has the sector not received as much attention as oil? The oil industry seems generates a lot of interest because it fuels the global economy and its windfall can easily be taxed by the state as well, whereas the revenue from the artisanal fisheries sector goes directly to the rural folks. Investment in the fishing sector by promoting fish farming can also create more employment (GNADP 2012). Advocates for fish farming suggest that provision of basic marketing infrastructure such as roads, electricity and water; marketing channels; and support for research into taste and preference for local markets and exports can help further improve and revitalize the sector and has a prospect of reducing Ghana's fish deficit (GNADP 2012).

The fisheries sector is confronted with challenges such as dwindling fish stock and catch. According to the Ghana government, the decline in fish catch can be attributed to over exploitation of stock in the country's continental shelf (GSGDA 2010). Other factors identified as being responsible for the decrease in fish catch include: poor monitoring to ensure compliance with fisheries laws and regulations; weak collaboration with coastal communities in management of the fisheries resources; absence of alternative livelihood opportunities for communities; and poor fishing infrastructure including the use of dilapidated fishing vessels and obsolete fishing methods (GSGDA 2010, p. 46).

Oil exploration in offshore of Ghana has also been recently recognized as negatively impacting fishing in the coastal communities along the Western Coast of Ghana (Adusah-Karikari 2015; Ackah-Baidoo 2013; Agbefu 2011; Aheto et al 2011; Boohene and Peprah 2011). But to assess whether or not a local curse manifests or what challenges oil exploration poses to Dixcove's economy, there is the need to examine the socio-economic and political

conditions of the locality, changes have occurred since the start of oil exploration and their implications for local livelihood. Dixcove is one of the local communities located near the oil fields which is likely impacted by oil exploration, since restrictions on fishing is likely to negatively affect local livelihoods.

6.2.1 Political economy of Dixcove

Dixcove is a community in the Ahanta West District, located at the southern-most part of the Western Region of Ghana (Ahanta West District Assembly [AWDA] 2006; 2013) as indicated in figure 6.1 below. According to the 2010 population census, AWDA has a total land area of 591 square kilometres and 106,215 inhabitants (AWDA 2013). The district shares a boundary with Shama Ahanta East on the east, Nzema East on the west, Mpohor Wassa East to the north and Wassa West and the Gulf of Guinea to the south (AWDA 2012). Seventy percent of the population live in rural areas, mostly engaging in fishing and farming (GSS 2010).

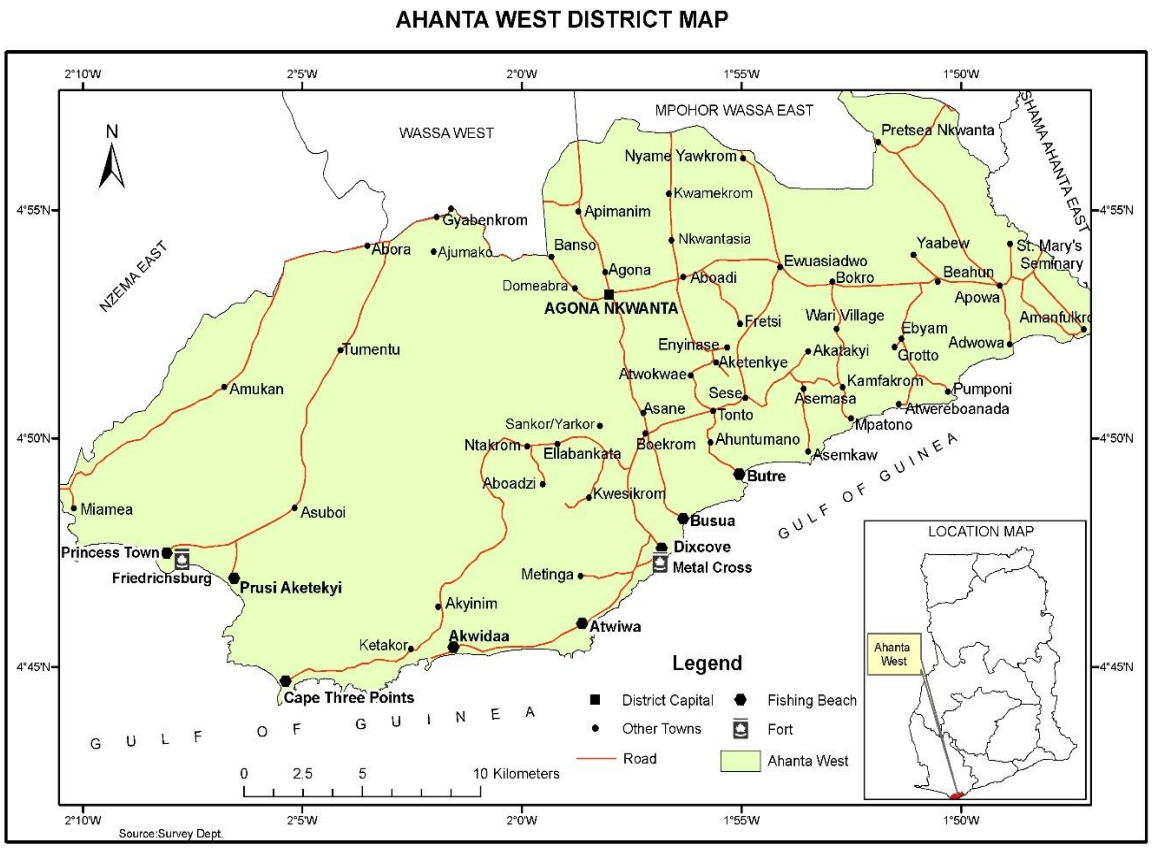


Figure 6:1 Ahanta West District (Geography Dept., University of Ghana, 2015)

Social facilities like roads, electricity, transport and telecommunication are available in the district. According to the composite budget of the AWDA, due to significant improvement

in the road network, transport services are reliable and affordable, reducing travel time within the area (AWDA 2015; 2013). Power outages sometimes occur due to the national energy crisis and the inability of the transformer to serve the increasing power demand in the locality. With regards to governance, there has been peaceful co-existence between traditional and state institutions such as chieftaincy, the police and navy to maintain peace in the area. Local political leaders (assembly members) sometimes engage in mediation of conflict among the inhabitants and disseminate information (ADWA 2015). The district hospital is sited at Dixcove and two other health facilities are located in other parts of the district (ADWA 2013; 2012). Some education and health infrastructure are in poor condition. Health care delivery is also sometimes hampered by limited supply of health personnel.

The district has fertile soil that is good for the cultivation of cash crops such as cocoa, coffee, citrus, palm tree and rubber and food crops such as maize and vegetables. Farming and fishing are the mainstays of the local economy (AWDA 2012; 2011; 2006). About 60% - 65% of the population are employed in the agriculture sector, with the rest engaged in small-scale trading, fishing and public sector employment (ADWA 2010). This suggests that the total population that is directly engaged in fishing for livelihood is low in the entire district since most of the people are involved in food and commercial crop farming. Fishing is however, an important source of livelihood for people residing in the coastal areas, such as Dixcove in the district. Agro-processing is being promoted in the district through private sector participation and two agro-based factories, NORPALM and GREL produce oil palm for consumption and industrial use (AWDA 2015)[27]. Other economic activities in the district are hairdressing, dressmaking, carpentry, block-making, electricians, fitting and car spraying.

Dixcove is one of the oldest fishing communities in the district and Ghana. It is also one of the relatively developed areas in AWDA, with access to facilities such as roads, schools and hospitals (AWDA 2014; 2013). Fort Metal Cross [a British trading post built in 1683], one of the 42 former European trading forts along the coast of Ghana is located in the locality (Stevens et al. 2013). The presence of such a European trading post in the area demonstrates how the area is connected to the global economy even before commercial production of oil started in 2011. The fort is being developed by a private company to serve as a tourist site. Fishermen in Dixcove however, complained that in 2011, a rock wall that is built by the private developer operating Fort Metal Cross obstructed their attempt to save the lives of five

[27] http://ahantawest.ghanadistricts.gov.gh/?arrow=atd&=133&sa=2926, (accessed 7/7/2015).

fishermen whose boats capsized in the harbour (Stevens et al. 2013). The chiefs also complained about the refusal of the developer to allow access to Fort Metal Cross during the annual Kundum festival and for the community members not benefiting financially from its development[28].

There are about 7,500 inhabitants in Dixcove according to the 2010 national population and housing census (GSS 2010). Dixcove is headed by a chief, assisted by elders and the chief fisherman to govern the area. Fishing and farming are the main economic activities in the area, providing food, employment and income. Dixcove's fishing sector is noted for its sharks, tuna and lobsters in the Western Region. Fisheries accounts for 90% of livelihoods for the men in Dixcove, hence any disruption in the sector has implications for the local economy (Stevens et al 2013). Most of the women in Dixcove are also engaged in the fish trade through processing, making the area the center of fish trading for adjoining communities[29].

Since the discovery oil in 2007 offshore, near Dixcove, there have been changes in economic activities in the area. The residents, mostly fishermen and fishmongers expected that the oil sector would provide some employment and lead to poverty reduction in the area but it seems, up to now, this remains only an expectation (Stevens et al 2013). Focus group discussions with some of the fishermen and fishmongers during this study in November 2014 suggest that decline in fishing and limited employment has resulted in income decline in the area. Factors contributing to the decline of the fisheries sector in the area include; poor enforcement of fishing laws; unsustainable fishing, such as using small meshed nets; increased number of fishing vessels; inadequate supply of fishing fuel; inadequate supply of parts for outboard motors; and *restriction on fishing around the oil rigs [emphasis]* (Stevens et al 2013, p. 8). Some of the fishermen suggest that restrictions on fishing due to oil exploration is the main cause of decrease in fish catch in the area since the fish are attracted to the lights at the oil rigs. Dixcove's case enables us to examine how the oil industry can shape the political economy of local communities unevenly, its implications for income, poverty and inequality, women's vulnerability and environmental pollution and destruction of aquatic resources.

[28] http://www.ghanaweb.com/GhanaHomePage/NewsArchive/Brit-fights-Ghana-Gov-t-over-300-year-old-Fort-at-Dixcove-307148 (accessed on 12 December, 2014).
[29] Focus group discussion, fishmongers, November 2014, Dixcove.

6.3 Polluted environment, loss of aquatic species and dead whales

The environmental dimension of the resource curse manifests where oil spillage leads to pollution of water bodies, destruction of aquatic resources like fish, biodiversity loss and atmospheric pollution from gas flaring (Watts 2010; 2009; 2004; Maass 2009). Collier (2008; 2010) argues that in most developing countries, natural resource windfalls are plundered by companies and politicians, while the citizens suffer from poverty and environmental challenges. In Nigeria, oil development has led to situations where the political elites and oil companies profit from the oil windfall, while local communities in the Niger Delta suffer from pollution of water bodies from oil spillage, loss of fish species and air pollution from gas flaring (Watts 2008). The environmental degradation associated with natural resource exploitation is not limited to oil. In mining communities in Ghana, Hilson (2002) and Aryee et al. (2003) report pollution of water bodies from mercury discharges and degradation of farming lands in local communities while the government and mining companies make fortunes from the sector. This demonstrates the impacts of natural resource exploitation can be unequally distributed across space and class such as whereas it can lead to pollution and destabilizing of natural eco-systems on which rural livelihoods depend, the political elites and transnational companies profit from its windfalls. O'Rourke and Connolly (2003) argue that oil exploration creates varied negative impacts on human health and environmental challenges that disproportionately affect groups or poor indigenous communities living near oil fields and pipelines. This study reveals that whereas Ghana is not experiencing the same environmental dimensions of the resource curse such as huge oil spillage and destruction of ecosystems, pollution of the rivers that leads to loss of fish and atmospheric pollution from gas flaring as the case of the Niger Delta, oil exploration still poses some challenges to the sea environment and livelihood in the fishing communities.

The environmental curse manifests where oil spills from companies and illegal tapping of pipelines (bunkering) around refinery and oil installations and gas flaring lead to pollution of air, water and land that locals depend on for their livelihoods (Ross 2012; Watts 2010; 2009; 2004). The state and its agencies are also unwilling or unable to enforce environmental laws that govern the oil industry because of weak institutions. In the case of Ghana, there is no large scale oil spillage or gas flaring. Although there were reported death of whales and an initial oil spill by Kosmos in 2009, the challenge was identified and the company fined accordingly.

Since commercial oil production started in 2011, there are concerns about its potential negative impacts on the environment, especially on coastal communities located near the oil

rigs (Asamoah 2013a; EPA 2011; Mensah 2010) as local livelihoods can be destroyed from oil pollution. In analysing the challenges that oil exploration in Ghana poses to the environment, there is a need to understand the quality of environmental impact assessment (EIA) conducted by oil companies and the level of stakeholder engagement (including fishermen) before the start of oil exploration since the EIA is supposed to help to identify potential negative impacts and how to mitigate them.

It was revealed during this study that when Tullow and Kosmos started oil exploration in the Jubilee field in 2003, the government did not insist that the companies undertake EIA to evaluate its environmental consequences since the state seems to be more concerned to create an enabling environment for the oil companies to invest in the country[30]. The EIA for the Jubilee field was undertaken in 2009 (Tullow 2009). Indeed, it was in 2009 that it became a requirement that oil companies operating in Ghana to undertake EIAs before they start their activities and to report quarterly to the Environmental Protection Agency [EPA] on the progress of their activities[31]. Even with this, the EPA has no mechanism of monitoring or verifying as to whether or not the EIA reports the oil companies submitted are credible[32]. But based on the environmental challenges associated with oil exploration in countries like Nigeria, relying on the reports of TOCs is not enough to ensure environmental compliance by TOCs. The TOCs are concerned with their profit margins, hence issues of environmental pollution might be secondary to them. Strong well-resourced state agencies are needed to monitor and ensure compliance with best environmental practices. The self-evaluative EIA developed for oil companies for the Jubilee field has been criticised since the oil companies can hide some of the challenges associated with their activities (D'Alessandro et al. 2014). Ghana's EIA for the Jubilee field is criticised for not having a programme on how to deal with oil spills (Gary 2009). There is a suggestion that the EIA was incomplete since the data used in its preparation was not up-to-date and there was inadequate assessment of environmental damages caused to fauna (D'Alessandro et al. 2014, p. 149 – 150; Gary 2009).

In 2009 and 2010, before commercial oil production started, Kosmos was alleged to have spilled 706 barrels of toxic substances into the sea and a committee was set up by the government to investigate environmental challenges that the spill might have caused (Obeng-Odoom 2014a). Kosmos was found liable for the toxic spillage and it was fined US$35 million

[30] Interview, ISODEC, July 2014, Accra; Interview, EPA, June 2014, Accra.
[31] Interview, EPA, June 2014, Accra.
[32] Interview, EPA, June 2014, Accra.

dollars by the government. The government however later waved the fine, with some oil industry actors suggesting that the waver was given because Ghana's oil industry is young, and government does want to appear to be anti-oil companies and wants to promote an investor-friendly environment (though detrimental to the sea environment and its inhabitants) to attract other companies into the sector[33]. Based on the Kosmos spill however, pressure was put on the government by CSOs and it instituted a capacity building programme for the EPA to monitor and assess the cost of environmental degradation associated with the oil industry in the country (MOFEP 2011). According to Kosmos, it has been more careful with its operations since the spillage in 2009 and there has not been any reported case of oil spills from the company (Kosmos 2010; Obeng-Odoom 2014a). Tullow claimed to have one of the safest operations in Ghana and it indicates in its 2010 report that 'it has set the industry benchmark for deep water development' (Tullow 2010, p. 2). Though the company was responsible for some spills, releasing a total of 23 tonnes of material into the sea in 2013 (Tullow 2013), the substance is seen as less harmful to the environment and the volume is also lower than the 39 tonnes it spilled prior to 2012 (Tullow 2013). According to Tullow, most of the material it spilled was sewage and low toxic materials which can have a limited negative impact on the environment.

According to the Coastal Resources Center, the Western Region of Ghana has fresh water bodies, wetlands, varied plant species and fish, but discharge of toxic substances by oil companies into the sea can have negative consequences for its aquatic species, especially fish (Obeng-Odoom 2014a p. 122). Kjeldsen (2010) reports that some coastal and marine environments in the Western Region of Ghana have experienced damage and changes to their fauna and flora due to oil exploration activities, even before commercial production of oil started in 2011. Boohene and Peprah's (2011) study also documented possible death of coconut trees within the coastal communities due to absorption of chemicals from oil related activities, and they argued this has implications for local livelihood. It is suggested that some of the substances discharged by oil companies can lead to biodiversity losses and humans can be affected through drinking of contaminated water (D'Alessandro et al. 2014).

Between 2008 and 2012, 26 dead whales were found on the beaches of the Western Coast of Ghana[34]. Environmental NGOs, fishermen, and the public are suspicious that the oil exploration offshore is responsible for the whale deaths[35] (see Obeng-Odoom 2014a; 2014e),

[33] Interview, ISODEC, July 2014, Accra.
[34] Interview, EPA, June 2014, Accra.
[35] Interview, ISODEC, July 2014, Accra.

though some of the oil companies disputed the claim. In 2012, the EPA conducted an investigation into the cause of the death of the whales but till date, the mysterious whales' death on the Western Coast of Ghana has not been resolved as the EPA has not made it report public. While the fishermen and environmentalists have linked the deaths to the oil exploration activities in the Jubilee field, officials of the EPA argued there has not been any scientific proof of that, hence the need to delink such incidences from the hydrocarbon industry[36]. Tullow also downplay the link between oil production and whale deaths. Some experts in marine mammals suggest that apart from environmental pollution which can be attributed to oil exploration, whales could also die naturally or be killed by a ship and washed ashore[37]. While the debate about whether or not the deaths of the whales are linked to oil exploration is inconclusive, it is suggested that the EIA conducted by oil companies prior to the commencement of oil production anticipated negative impact of their activities on sea animals (Obeng-Odoom 2014a). The rotten whales and their stench meanwhile can pose health challenges to residents in the fishing communities. Some have argued that an independent fisheries assessment should have been conducted as part of granting of oil exploration licences, but unfortunately this has not been done (Aryeh-Adjei et al. 2015; Aklorbortu 2013).

According to Tullow (2013) however, it undertakes biodiversity observation – (marine mammal and avifauna [bird]) to understand whether or not living organisms in its operating area are negatively affected. Tullow's marine mammal observation programme started in 2010 through the use of an Environmental Health and Safety (EHSS) vessels, with a trained crew to perform daily observation and recording. A marine mammal specialist is also attached to the team that perform seismic operations to observe and advise the survey team on the presence of species using monitors. According to Tullow (2013), anecdotal data obtained from the oil rigs and the FPSO in 2013 did not report any large congregation of birds and unusual mammal activities around its offshore facilities. According to Tullow, when unusual gathering marine mammals and birds is observed in the region, specific studies can be conducted to ascertain any causal links or effects of oil exploration on the mammals activity and biodiversity (Tullow 2013). The monitoring is to ascertain whether or not the behavioural patterns of marine mammals is disrupted by oil exploration. And although the mammal behaviour assessment report is often submitted to the EPA, the EPA has no mechanism to verify the information independently and their engagement with the oil companies is based on the companies'

[36] Interview, EPA, June 2014, Accra.
[37] Interview, University of Cape Coast, Fisheries Department, July 2014, Cape Coast.

reports[38]. The attitude of EPA seems to be in line with the attitude of some African governments where the concerns for oil revenue overrides environmental issues and their implications for local livelihood.

Interviews with some of the fishermen also suggest that debris that were left behind by the oil companies operating in the area and growth of sea weeds which they [fishermen] attributed to oil exploration are destroying their fishing nets[39]. Fishermen have to spend a lot of money to repair the nets damaged by the debris. In order for the fishermen not to come into confrontation with oil companies operating the fields in Ghana and to prevent their fishing equipment from been destroyed because of restrictions in the country's waters, some of the fishermen travel into the waters of neighbouring countries like Côte d'Ivoire in search of fish. This increases the operating cost for fishermen since they use more fuel to power the outboard motors. Some of the fishermen contended that they have to stay at sea for about four days instead of the one day they used to do prior to oil production in 2011. Time devoted to the fishing trade in Dixcove has also increased. This can make the fishermen around Dixcove poorer due to increase in operation cost which is results in net income decline.

A study by the Department of Oceanography and Fisheries, University of Ghana, and the Department of Nuclear Engineering and Material Science, National Nuclear Research Institute of Ghana Atomic Energy discovered concentration of chemicals in the Jubilee field that threatens the biodiversity and fisheries in the waters around the western coast of Ghana (Nyarko et al. 2011; Obeng-Odoom 2014a; 2014e). Yalley et al. (2012, p. 194 – 195) also contend that the seismic surveys, exploration and drilling activities that are conducted by TOCs in Ghana lead to emission of chemicals that pollute the sea and fishing habitats. Waste that is produced due to oil exploration and production can also lead to ground water and marine pollution. Sakyi et al. (2012, p. 70) argue that the exploration, development and production of oil from the Jubilee field can result in ecological degradation. A study by Kumar et al. (2013, 347) to assess the environmental impact of oil production in Ghana suggest that the country's marine water quality is being negatively affected from substances containing harmful metals, which affects sea resources and economic development.

Gas flaring from oil fields is one mechanism through which oil exploration negatively affects the environment. Zero-gas flaring is at the heart of Ghana's oil and gas environmental policy (Ghana Government 2010). Oil companies operating in the country are to protect the

[38] Interview, EPA, June 2014, Accra.
[39] Focus group discussion with fishermen, November 2014, Dixcove.

environment by ensuring that their activities do not lead to oil spillage and minimise or avoid gas flaring. Where there is a gas leakage or an oil spillage, oil companies are to ensure they have capacity to deal with it. Between 2011 to May 2015, because of delays in the completion of the Atuabo Gas Processing Plant, gas from the Jubilee field was flared. Gas flaring has an impact on the quality of the atmospheric air and it has health implications for local communities and globally. Tullow (2013) acknowledges gas flaring in Ghana will add to carbon dioxide (CO_2) in the atmosphere and this can contribute to global warning. Tullow's emissions comprises gas, diesel and gas refrigerants from its offices, as well as other emissions from the oil field (Tullow 2013).

To minimise the air pollution associated with oil exploration in Ghana, gas from the Jubilee field is supposed to be processed by the Atuabo Gas Plant for domestic and commercial use (MOFEP 2014; GNPC 2011). Some of the gas is however periodically injected into the oil wells to induce oil production and stabilise the field (Tullow 2013; 2012). Utilisation of the gas from the Jubilee is to reduce the pollution of the environment that comes with gas flaring. It is also to ensure that the oil industry has linkage to other sectors of the national economy, increase economic growth and employment through value addition. Production of electricity from gas is also cheaper which could reduce the cost of energy for domestic and industrial use in the country (MOFEP 2014). The gas processing plant was however, only completed in 2015, hence most of the gas produced from the Jubilee field was flared between 2011 and 2015. Increases in emissions by oil companies was due to gas compression failures that resulted in higher than anticipated flaring rates and delay in the completion of Ghana's Atuabo Gas Plant where the gas has to be flared to maintain the oil field's stability (Tullow 2013). In places where the oil and gas industry have not been managed properly, it results in environmental pollution and poisoning of water bodies, making them unsuitable for human use such as drinking, and destruction of aquatic flora and fauna (Asamoah 2013a). It must however, be noted that it is not only oil exploitation that pollutes water bodies.

There also compounding factors that affect the size of fish catch in coastal communities apart from the oil exploration and its related activities (Aheto 2010; FON 2013). Cutting of trees around mangroves by fishermen has been identified as destroying the breeding ground for fish which affects the volume of fish (Aheto 2010; FON 2013). Aheto (2010) and De-Graft-Johnson's (2010) biodiversity threats assessment studies suggest human activities that affects the coastal ecosystems including fishing grounds comprise urbanisation where mangroves are cleared for housing and economic activities; beach sand mining; use of harmful chemicals and small mesh nets that catch fingerlings for fishing; and exploitation of mangrove vegetation for

firewood. Development of settlements and encroachment of wetlands for business enterprises such as provision kiosks, drinking bars, dumping sites for scraps metals, car washing places, and mechanic shops also affect the habitant of the fish (Aheto 2010, p. 84). Dumping of refuse in lagoons along the coast and directing domestic drainage systems into the lagoon affect their ability to support fish growth (FON 2013; Aheto 2010). This suggests that activities of local fishermen, together with oil companies contribute to the degradation of the environment. Addressing the environmental challenges facing the coastal communities transcends a single actor or group. It will require a network of actors. Mevuta and Boachie-Yiadom (2013) suggest that in order to sustain the socio-economic benefits from the coastal resources, entails a collaborative effort of state institutions like the navy, EPA, Fisheries Commission, Ghana Industrial Trawlers Association, Fishermen Association of Ghana, Fish Processors, Ghana National Canoe Fishermen Council (GNCFC), and oil companies. In order to ensure sustainable use of coastal resources in the midst of oil production, Ghana needs to develop a petroleum industry specific environmental protection guideline, compliance enforcement and sanctions (D'Alessandro et al. 2014, p. 150).

Whereas oil companies and state institutions appear to often assure the populace and CSOs of the rigour and effectiveness of their environmental oversights over Ghana's oil industry, Obeng-Odoom (2014a) questions such claim. He argues that although Ghana's Offshore Petroleum Regulation, 2010 has a lengthy list of requirements before the country grants oil exploration and drilling permits, it seems not all the requirements are met by the oil companies operating in the country. Ghana's oil industry guidelines such as the National Oil Spillage Contingency Plan and the National Oil Spill Response Dispersant Use Policy also seem to be curative instead of preventive (Obeng-Odoom 2014a). The EPA and agencies in charge of preventing environmental challenges associated with Ghana's oil industry seem structurally ineffective. Banful (2010) and Marful-Sau (2009) earlier argued that the GNPC previously acting simultaneously as the national oil company (NOC) and a regulator, finds itself in a conflict of interest, though this has been corrected with the Petroleum Commission (PC) now acting as the regulator, while GNPC serves as the NOC. The PC technical competence has however, been questioned (Obeng-Odoom 2014a; 2014b).

The Civil Society Platform on Oil and Gas (CSPOG) in 2011 issued a 'Readiness Report Card' which evaluates the performance of Ghana in managing the challenges of the oil industry. Although the CSPOG gave Ghana a fair score in terms of transparency in revenue disclosure and use, the country scores poorly in social and environmental challenges that confront the sector (D'Alessandro et al. 2014, p. 149; Zandvliet 2013; CSPOG 2011). The

report also questioned the technical capabilities of CSOs to monitor the environmental impact of oil and gas exploration in Ghana (D'Alessandro et al. 2014). The state and CSOs inability to monitor the environmental and social impact of oil exploration is problematic since this can help to identity challenges that the oil industry poses to fishing and how to mitigate any conflict that arises (D'Alessandro et al. 2014; Agyei et al. 2012). Environmental and social challenges posed by the natural resource sector can be mutually constitutive where disgruntled communities develop unconventional means such as illegal tapping of oil to benefit from natural resource windfalls, leading to spillage and destruction of the environment.

6.4 Non-violent conflict between fishing and oil exploration

Social, political and economic inequalities that manifest among people and regions in a country that emanates from the way natural resource windfalls are appropriated can be a source of conflict (Ross 2007; Easterly 2002). Natural resource related conflict emerges where windfalls from natural resources lead to vertical inequality [widening developmental gap between the rich and the poor due to revenue and income distribution from natural resource sector] or horizontal inequality [a development gap between resource-rich and poor regions] (Ross 2007). Due to some violent conflicts that have been associated with exploration of natural resources like oil, the resource curse has been expanded beyond the relationship between natural resource abundance and economic growth (Auty 2001; Sachs and Warner 2001) to the broader political economy such as how natural resources [oil] is implicated in shaping conflict (Watts 2010; 2009; 2004). Oil exploration can be a source of conflict where diverse groups compete for the windfall associated with it. The curse seems to manifest in a local setting where oil fields are located onshore, leading to a more direct interference or destruction of local livelihoods such as fishing and farming [although there are cases such as Angola where offshore exploitation has led to violent conflicts (Oliveira 2010)]. Oil-related conflicts can also manifest due to mismanagement of oil windfalls by political elites and their allies, unequal distribution of oil wealth, destruction of local livelihoods and human right abuse of locals who protest against oil activities by the state and oil companies (Watts 2010; 2009). Thus, how the natural resource sector can be implicated in conflicts in specific countries is complex. Ghana's experience with oil exploration however shows that the country is not experiencing any oil-related violent conflict, even though there have been reported cases of clashes between fishermen and oil companies in the country's western coast due to restrictions on fishing in the oil exploration

regions (Agbefu 2011; Ackah-Baidoo 2013). This suggests that the conflict associated with oil exploration can manifest unevenly across space due to interactions between geography [whether oil is located onshore or offshore] and politics and institutions in terms of the level of community engagement and measures in place to mitigate conflict and whether or not oil exploitation directly deprives or obstructs local communities of their livelihoods.

Agbefu (2011) and Jonah (2010) argue that conflict can emerge in Ghana's oil industry where local people feel their expectation of economic gain from the oil industry is not met and where local source of livelihood [fishing] are threatened by the activities of companies operating in the area. So far, the conflict that characterised Ghana's oil industry is a non-violent economic interest conflict between fishing and oil exploration. Agbefu's (2011) study recorded cases where local fishermen collided with state security agencies (the navy), with some fishermen alleging that those of them who were found close to the oil rigs had their canoes seized. Page (2013) reports that in 2012, a navy patrol team arrested a Ghanaian fishing vessel that was fishing within the 500m exclusion zone of the oil field. D'Alessandro et al. (2014, p. 150) also report that because fish are attracted to the lights at the oil rigs, some of the fishermen go to such restricted area, leading to clashes between the fishermen and navy patrol vessels. Meanwhile, the fishermen who go near the oil rigs have their fish catch or nets confiscated which leads to economic loss for them and their families (D'Alessandro et al. 2014; Agyei et al. 2012; Kjeldsen 2010, p. 22 – 23).

Beside the non-violent conflict between fishermen and oil companies, there are some land related conflicts in some of coastal communities in Cape Three Point where the sudden increase in demand for land as a result of the presence of oil companies is resulting in disputes over claimants to lands in the area due to poor land registration records (Yalley et al. 2012). In some cases, because of poor land use plans and registration, same parcels of land in the area are granted to different investors by the various claimants. This results in disputes among the contending parties as well as the investors since there are no land-use plans guiding land acquisitions in localities near the oil fields.

Although the relationship between the government and oil companies on one hand, and the fishing community on the order hand is non-violent, there seems to be some tension and mistrust from the latter towards the former. The tension seems to emanate from a feeling among the fishing community that they [fishermen] are not benefiting from the oil exploration near their locality. According to a fishermen: 'they [oil companies and government] do not consult us [fishermen] on oil exploration and how it affects local livelihoods. Even when the oil companies come into the fishing communities, meetings are mostly held with few community

leaders without meeting the larger fishing community to understand how oil exploration is negatively affecting the fishing industry'[40]. Marginalisation [perceived or real] and mistrust towards government and oil companies can foment conflict in communities located near the oil fields. For instance, a demand by the chiefs in the Western Region that 10% of oil revenue to be allocated for development in the region was rejected by the state (FON 2013). Some of these actions of government can make residents of Dixcove think that the oil companies and state are predatory and insensitive to their needs.

The survey in Dixcove during this study suggests that the seeming conflict between the fishing and oil industries is due to poor community engagement among the stakeholders.

Table 6:1: Local participation in decisions on the oil industry

Level of participation	Community perception (%) (N: 124)
Excellent	6
Good	10
Fairly Good	10
Poor	74
Total	100

Field survey, Dixcove, November 2014

A survey of 124 fishermen and fishmongers in Dixcove (table 6.1 above) shows that 74% of them pointed to a poor relationship between the oil companies and/or government and fishing communities. There are concerns about who decides how oil revenue is appropriated and utilised at the local level, infrastructure that is needed in the fishing localities, the demarcation of boundaries where fishing can or cannot occur and the navy is criticised by the chief fisherman (the leader of the fishermen) for being harsh on the fishermen. The oil companies however, argue that there have been consultations with local communities on their operations (Tullow 2013; 2012). According to Tullow, there was education on where fishing can take place, so as the fishermen do not interrupt their machines, and it also provided precautionary notices near the oil rigs to avoid confrontation between fishermen and the navy that is helping to protect the oil installations (Tullow 2013).

It seems the engagement with the fishing communities was inadequate for them to understand how the oil industry operates, the limited employment opportunity in the industry due to its technical nature, and how both oil companies and fishermen can share the same sea-space without compromising the livelihoods of the fishing community. It seems the fishing communities have ignored or have not been educated on Ghana's constitution which makes it clear that all natural resources that are located on the land or in the soil are vested in the

[40] Interview, fisherman, November 3, 2014, Dixcove.

president and held in trust on behalf of the people (Government of Ghana 1992). It is the state which decides how natural resource windfalls are appropriate for national development. The local communities can be justified in demanding a share of the oil resources since they will suffer immediate environmental impacts of the industry, however. A fisherman in Dixcove puts such grievance across by noting that: 'we receive poor treatment at sea from oil companies and state agencies. Fishermen are sometimes chased by the navy and fishing equipment are sometimes seized by the navy for fishing near the oil rigs. The fishermen suffer the consequences oil exploration such as pollution of the sea and growth of sargassum [free-floating seaweed] that hinder fishing in the area'[41].

Bawole's (2013) study suggests that community meetings in coastal communities with oil companies tend to be a mere window-dressing, a process whereby the oil companies and their officials talk at, talk about and talk to communities, never with them (see Obeng-Odoom 2014e, p. 127). FON (2013, p. 4) contends that communities' voices appear to be stampeded off the radar of engagements. Obeng-Odoom (2014e) also makes a similar argument that although community engagement is a requirement for EIA, what seems to be happening is, oil companies often come to lecture the fishing communities on their operations, with the communities having little opportunity to raise concerns on livelihood losses due to activities of the oil companies. Even where fishing communities raise challenges posed by the oil companies to their livelihoods, the issues seem not to be addressed. Andrew's (2013) study shows that even where there are community engagement by oil companies, it is mostly to circulate EIA documents.

Dixcove's seeming marginalisation in the oil industry in Ghana is a manifestation of the structure of the hydrocarbon industry where because it is capital intensive, it provides limited employment and has limited linkages with the local economy. In an interview with Bernard Anaba of ISODEC, he said:

> 'The oil companies cannot necessarily be seen as excluding and marginalising fishing communities in its operations since the oil industry as an economic venture is focused on protecting their investments and maximise profit. The fisher folks are also involved in their own economic activities. These seem to be competing interest between oil and fish. But it seems the state [Ghana] view oil as more beneficial because it generates

[41] Interview, fisherman November 3, 2014, Dixcove.

more foreign exchange. As a country, there is a need to create a space where fishing and the oil industry can co-exist' (Interview, July 2014, Accra).

There seems to be competing interest between a localised fishing industry and the oil industry. As noted earlier, there is a suggestion that with proper investment in the fishing industry, it could almost generate the same revenue as oil in Ghana (FON 2013). But it seems the Ghana government is more focused on oil industry because the oil revenue is easily taxable and it also increases a country importance in the global economy. The fishing industry is more localised, difficult to value and tax, with most of its revenue going to the fishermen and their families.

There is however, a suggestion from some of the fishermen in Dixcove that although the local communities might appear not to be benefiting directly from oil, if oil revenue enables the country to stabilise the local currency [which is not happening now], prices of goods and services will stabilise and fishermen can plan well for their activities[42]. Since Dixcove is part of the larger Ghanaian state, the impact of the oil sector at the national level, will also impact livelihoods locally. According to Latour (2005, p 204), 'no place dominates enough to be global and no place is self-contained enough to be local'. Because of the importance the state attaches to oil exploration, and the role of fishing in sustaining local livelihoods, there is the need to ensure that oil exploitation does not endanger the sea space through pollution and conflict between fishermen and TOCs. Conflicts are however not events, but often build overtime as a result of local communities neglect, grievance (or sometimes greed) and destruction of local livelihoods due to oil spillage which can contaminate fishing water bodies and farm lands, resulting in poverty and inequality in natural resource rich regions.

6.5 Uneven manifestation of poverty and income decline in Dixcove

In most developing countries, the abundance of natural resource has been characterised by inequalities and uneven development between people and regions (Ross 2007; Smith 1984). The manifestation of inequality and poverty can partly be attributed to state and corporate power influence on access and control over natural resource windfalls (Neumann 2005). According to Watts (2010; 2009; 2008; 2004), oil exploration in Nigeria has created a development complex; comprising government, corporations, people and the environment, and instead of oil windfalls providing financial resources, and an economic environment for equitable development, the development landscape that is created by the hydrocarbon industry

[42] Interview, ISODEC, 24 July, 2014, Accra.

in Nigeria has been characterised by poverty, inequality, corruption and violence. Natural resource windfalls in Nigeria has also not stopped/reduced a widening income inequality between the rich and poor or provision of social services between resource-rich and poor regions in the country. Nigeria is often seen as experiencing the curse because despite the inflow of about US$ 300 billion dollars between 1970 and 2000, most of it citizens live on less than $1 per day and the country also performed poorly in other social indicators (Gary and Karl 2003). Sala-i-Martin and Subramanian (2003, p. 4) suggested that between 1970 and 2000, poverty rate in Nigeria, (i.e. the population living on less than US$1 per day) increased from 36% to 70%, with income distribution also deteriorating, so the rich get richer and the poor poorer. In spite of the Niger Delta hosting the country's oil reserves, it experienced high poverty, unemployment, inequality and poor social services (Chindo et al. 2014).

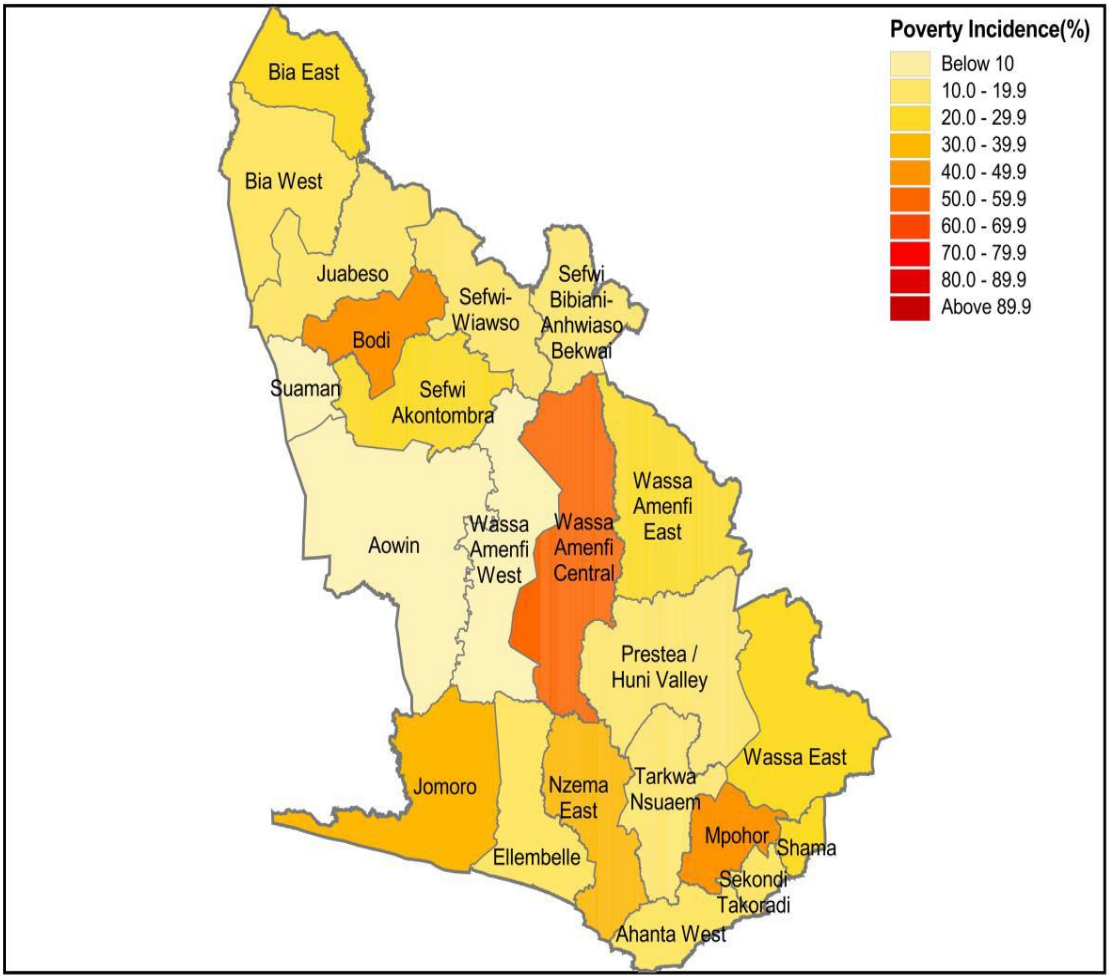
This study reveals that whereas oil has been problematic for the development fisher for folks whose livelihood depend on fishing from the sea in terms of some loss of livelihood, income decline and employment challenges due to restriction on fishing near the oil rigs Dixcove and its environs (Phillips et al. 2015; Stevens et al. 2013), the area is not experiencing the dimensions of the curse such as high unemployment, poverty and inequality as in the case of the Niger Delta. The challenges that the hydrocarbon industry poses to local economies may therefore manifest unevenly across space and class, depending on how local livelihoods are directly disrupted by oil exploitation.

Data from the World Bank and the Ghana Statistical Service (GSS) shows that the country has reduced extreme poverty (calculated based on the population living on less than US$1.90 a day) from 54% in 1999 to about 24% in 2013 (GSS 2015b). Also, using an upper poverty line of GH¢1,314 income per year, about 24% of Ghana's population can be said to be living in poverty, while 8.4% can be classified as living in extremely poverty (those living on less that GH¢792.05) in 2013 (GSS 2015b; 2014b). In other words, about 6.4 million Ghanaians can be said to be living absolutely poverty and 2.2 million being extremely poor in 2013 (GSS 2014b; 2013). Incidence of poverty in Ghana varies across space, and the decline in poverty has not been evenly distributed geographically (GSS 2014b). Geographically, the Greater Accra, the capital, recorded the lowest poverty incidence of 3.5%, with most of the people employed in the formal sector or self-employed in non-agricultural activities such as trading in goods and services (GSS 2014b). In 2013, whereas rural communities in the country accounted for about 50% of the total population, they accounted for about 78% of incidence of poverty (GSS, 2014b, p. 10). Even among the rural localities, incidence of poverty seems higher among the savannah and coastal communities. The seeming increased of poverty in

coastal areas in Ghana has been partly attributed to decline in fishing and the activities that are associated with the industry (Asare et al. 2013).

Using the poverty headcount, the proportion of the population living below the national poverty line of GH¢1,314, the Ghana Statistical Service's illustrates uneven distribution of poverty and wealth in Western Region of Ghana [figure 6.2] (GSS 2015b).

Figure 6:2 Poverty Incidence - Western Region



Ghana Statistical Service (2015, p. 13)

The map shows that the Western Region of Ghana (Dixcove inclusive) has a poverty incidence rate of 20.9%, which is lower than the national figure of 24% (GSS 2015b). The spatial distribution of incidence of poverty and inequality in the 26 districts in the Western Region shows that Wassa Amenfi Central (51.9%), Bodi (42.5%) and Mpohor (40.4%) have the highest poverty incidence (GSS 2015b, p. 13). The Ahanta West District where Dixcove is located however, has one of the lowest poverty incidence rate of 19.3% in the region (GSS 2015b, p. 42). Discussions (through interviews and focus groups) with the fisher-folks during

this study reveals whereas the incidence of poverty in Dixcove and its environs is not as bad as some other parts of the Western Region and the country, the incidence of income poverty is unevenly distributed among space and class, with fishermen and fishmongers in the area complaining of experiencing loss of livelihood and decline in their income due to restriction on fishing as a result of oil exploration near the locality[43].

There are indications that incomes of fishing communities in the Cape Three Point area might have declined since oil production started in 2011. Before commercial production of oil started in 2011, Boohene and Peprah (2011) surveyed 204 female fishmongers and the results suggests that 52% of them anticipated a decline or reduction in fish supply, loss of job for their husbands and decline in local incomes due to pollution from oil exploration and restrictions on fishing. Table 6.2 shows also a survey by Manu (2011), indicating changes in net income for fishermen in the Cape Three Point area (including Dixcove) in 2011.

Table 6:2: Net annual income for fishermen in Cape Three Point area

Annual income range (GH¢)	Before oil (%)	After oil (%)
+10,000	28	0
7,000 – 9,000	36	8
4,000 – 6,000	28	44
1,000 – 3,000	8	48
Total (%)	100	100

Manu 2011, p. 48

Manu's (2011) study in Cape Three Point area shows that in the year 2011 when oil production started, the cohort of fishermen who earn a net income of GH¢10,000 Ghana cedi and above in the Cape Three Point area seems to have disappeared. Most of the fishermen's earnings appear to have dropped to the lower income brackets (Manu 2011; Obeng-Odoom 2014a, p. 125 – 126). Though 2011 might too early to determine whether or not the declines income that be attributed to oil exploitation in the area, it can provide a broad picture on how oil might be impacting local livelihoods. A survey conducted during this study in November 2014 to understand whether or not fishermen or fishmongers income have increased, declined or stayed the same since oil production started shows that about 80.5% (table 6.3) of those surveyed indicated a decline in their incomes. Thirteen percent noted that their incomes stayed the same, whereas 6.5% had their incomes increased.

[43] Interview with fishermen, November 2014, Dixcove; Planning Officer, STMA, October 2014, Takoradi.

Table 6:3: Changes in people's income since oil production started

Impact on income	Number of people	% of fishermen or fishmongers
Gone up	8	6.5
Stayed same	16	13
Declined	100	80.5
Total	124	100

Field survey, Dixcove, November, 2014

The level of decline in income differs among the fishermen and fishmongers. Whereas some have higher declines in income of about 30 – 50% (table 6.4 below), the decrease is minimal in some cases (about 20%), which is among families with women who are working to support their families.

Table 6:4: Changes in fishing incomes, Dixcove

Changes in income	% of fishermen surveyed
Increased/unchanged	19%
Declined 20%	3%
Declined 30%	20%
Declined 40%	45%
Declined 50% Plus	13%
Total (%)	100

Field survey in Dixcove, 2014

The women were able to easily change or diversify their livelihood activities because their start-up business capital seems smaller. Another nuance that emerged during this study is that, the most declines in incomes are experienced by the small fleet fishermen (artisanal) who are not able to fish in deep sea beyond the oil rigs. The study shows that the 19% that were able to increase their incomes (or income remained unchanged) included those with large fishing fleets and those able to fish beyond Ghana's waters into neighbouring countries like Nigeria and Côte d'Ivoire and families with women who are working to support the men.

The study reveals that as the oil industry impact the national economy, it also affects localities that are located near the oil fields in the Western Region of Ghana. As ANT partly enjoins us to abandon or reduce binaries or categories such as 'local', 'national' and 'global' (Johannesson and Bærenholdt 2009). Such a priori categories of spaces or phenomenon limits one's understanding of the world, hence that need to focus on networks, associations and relations, and how spaces can be impacted differently. Further, Latour (1999) argues that as the social and economic are intrinsically linked, so are regions and places.

Based on the interviews and survey with some of the fishermen in Dixcove during this study, oil and gas exploration and production activities appear to be negatively affecting income and livelihood of fisher-folks in the community. It seems the Ghana government policy

to impose restrictions on where fishing takes place in Ghana's sea space in order to protect the oil fields and equipment of TOCs, such as Tullow and Kosmos is negatively affecting fishing in the area. This appears to be reducing fish catch since the sea space in which fishermen undertake fishing has 'shrunk'. The fish are also attracted to and congregate around the lights at oil rigs where they (fishermen) are prohibited from going. Such a decline in fish catch affects local income and livelihood. According to a fisherman:

> 'Before the discovery of oil and its commercial production in 2011, areas around the oil rigs were our major fishing sites. But since the development of oil started, there are limits as to where we can fish … due to the restrictions. We hardly get enough fish as they [fishes] have moved toward the light at the oil rigs. Around the oil rigs, we [fishermen] are chased away by the military and navy, making fishing difficult and frightening' (Interview, Fisherman, November 2014, Dixcove).

Obeng-Odoom (2014e) argues that the state decision to ban fishing in some areas within its sea space has implications for fish harvest. Agyei et al. (2012, p. 186 – 188) pointed out that based on a feedback survey from 200 local fishermen from ten communities in Ahanta West district (Dixcove inclusive), 25% of surveyed fishermen suggest that the 500m security radius zone for the oil rigs and 1km for the FPSO is contributing to reduction in fish catch in the area. D'Alessandro et al. (2014, p. 150) argue that reducing fish stocks, partly due to oil exploration activities explain why local fishermen along the Western Coast of Ghana struggle to sustain their livelihoods. The oil companies operating the Jubilee field however, seem to downplay the validity of claims by fishermen that fish are attracted to the lights at the oil rigs[44]. Till date, neither the government nor oil companies have initiated any independent inquiry to investigate the impact of oil exploration nor lights at the rigs on fish catch in the coastal communities located near the oil rigs in Ghana and how it affects local livelihoods.

Others studies identified compounding factors that are responsible for fish decline in coastal communities (Asare et al. 2013; FON 2013; Manu 2011). These include the use of unsustainable fishing methods such as the use of small mesh-nets that catch fingerlings which could have served to replenish the fish stock, increase in fishing fleets, and weak enforcement of fishing regulations (Asare et al. 2013). Olsen and Page (2010) identified rising sea temperatures, competition among fishing fleets and oil and gas development which restrict activities of fishermen as some of the challenges that confront the fishing industry in Ghana. Some fishermen also attach spiritual meaning to their economic activities in the area. In most

[44] Interview, Tullow, November 2014, Takoradi; Interview, GNPC, July 2014, Tema.

fishing communities in Ghana, fishermen do not go to sea on Tuesdays since they believe that the sea god wakes up on that day. It is suggested oil drilling activities everyday will disrupt the peace of the sea god which can bring a spiritual curse on the community in the form of low fish harvest (Boohene and Peprah 2011). The community contends that with oil exploration and production going on every day, it means the sea god will not have rest and this is expected to affect fish catch (Boohene and Peprah 2011, p. 193). Community engagement might be needed to appreciate the perspectives of the fishermen and to educate them on the factors that impact changes in fish catch so that they will avoid attributing it to the gods of the sea.

Although the net income of fishermen in Dixcove may have declined, this cannot be exclusively attributed to restriction on fishing due to oil exploration. The fishermen could be exaggerating the scale of decline and the impact of oil exploration on the decline and local livelihood to draw the attention of researchers, policy makers and politicians. Aheto (2010) and FON (2013) contend that apart from oil, the use of small-meshed net by some fishermen is responsible for depleting the fish stocks as it harvests the juvenile fish that are supposed to replenish the fish stock. The use of chemicals such as DDT (dichlorodiphenyltrichloroethane) and dynamite by local fishermen kill fingerlings, aquatic organisms and poses health hazard to those who consume such fish (Aheto 2010). Kankam et al. (2013) on their part argue that, increased pressure on marine fisheries due to poor fishing methods and rising sea temperature is placing the fishing industry under strain, making the supply chain, involving coastal communities vulnerable.

Based on the data gather during this study and the existing literature, the factors that influence the quantity of fish catch are complex. These include restrictions on fishing by the state, poor enforcement of local and national laws, the presence of oil companies and their equipment, and inappropriate fishing practices by the fishermen themselves such as the use of chemicals and small-meshed net to fish (Kankam et al. 2013). However, it seems the activities of oil companies have come under scrutiny as playing an important role in shaping livelihood in the coastal communities because their presence is new in the fishing landscape. Prior to the beginning of commercial oil production in 2011, there were expectations among the fisher folks that because oil is discovered near their locality, there would be cheap fuel for fishing and employment for some of the youth in the area, but these expectations seem unrealistic and they have not been met yet.

6.5.1 Oil, disruption of local livelihood and alternative employment

Related to income decline in fishing communities located near the oil fields are issues of disruption of local livelihood activities and limited employment available for locals in the hydrocarbon industry. Livelihood is a means through which people secure basic necessities of life such as water, food, health, clothing and shelter. Gordon and Pulis's (2010) study suggests that livelihood in fishing communities will be negatively affected due to pollution or access restrictions to some aspects of the sea by oil companies. Chambers and Conway (1992, p. 7) define livelihood as comprising 'capabilities, assets (stores, resources, claims and access) and activities required for a means of living'. Ellis (2000) views livelihood as encompassing assets (natural, physical, human, financial and social capital), activities and access to these assets (often mediated by institutions and social relations) that mediate and shape the living conditions of people or communities. One of the requirements of livelihood is the need for it to be sustainable where people are able to meet their socio-economic needs without destroying the environment. According to Carney (1998), a sustainable livelihood is where an individual or community is able to cope with, recover from shocks and able to preserve or improve its capabilities and assets, both at present and into the future without damaging its natural resource base. People who are unable to cope with temporary adjustment in the face of change or adapt to longer term shifts in livelihood strategies are inevitably vulnerable and unlikely to achieve sustainable livelihoods (Scoones 1998, p. 6). Diversification, which involves increasing the livelihood mix is vital to ensure livelihood sustainability. As Ellis (2000, p. 15) argues, livelihood diversification is the process through which rural households construct a diverse portfolio of activities and assets in order to survive and to improve their living standard. Globally, the hydrocarbon industry is known for its limited employment opportunities since it is technologically driven, capital intensive and high skilled (Corden and Neary 1982; Stevens 2003; Ploeg and Venables 2009).

The limited employment associated with the hydrocarbon industry seems to manifest in Dixcove due to the inhabitants of fishing localities lacking the technical skills required to work in the oil industry. Yet, the oil industry appears to be disrupting the livelihood of the fishermen due to the harassment from the navy and oil companies, making fishing unattractive for the inhabitants[45]. Activity or action such as restriction on fishing or pollution of the sea due to oil exploration activities that disrupt the economic activities and employment can negatively affect the livelihood in the local economy. The study reveals that due to prohibition of fishing

[45] Interview, Fisherman, November 2014, Dixcove.

within the 1 kilometre radius of the oil fields, boats that are caught fishing within such radii are seized by the navy, disrupting economic activities in the community (Page 2013; Agbefu 2011).

In a survey in Dixcove to understand how people view employment opportunities in the oil sector and whether or not they intend to work in the sector, 35% (table 6.5) of the people cite economic benefits as the main reason they want to be employed in the oil industry. Some of the fishermen want to be employed as security men to guard the oil so that they can improve their living conditions. But the experience by some of the workers on the oil rigs in Ghana suggests that their living conditions have not improved as they expected [as indicated in the previous chapter on national scale analysis of impact of oil on employment].

Table 6:5: Employment intentions and training offered

Employment intentions	%	whether training is offered or not	%
Yes	35	Yes	6
No	55	No	81
Not sure	10	Not sure	13
Total	100	Total	100

Field survey, Dixcove, November, 2014.

There are some demonstrations by offshore oil workers because of alleged maltreatment against local workers and low pay (Darkwah 2013; Ablo 2012). In June 2014, there was sit-down strike by the oil workers union in Ghana to demonstrate their displeasure of their working conditions. As Arthur and Arthur (2014) and ISODEC (2014) contend, the expectation about employment that greeted commercial oil production in Ghana was erroneous, given the capital and technological driven nature of the sector. It seems five years into commercial oil production, most inhabitants in the fishing communities in the Western Coast of Ghana are giving up on the prospects of working in the oil industry (from table 6.5, over 55% have no intention of working in the oil sector). Even though it could be suggested that people giving up on any prospect of employment is an indication of they have good alternative livelihoods, there is no evidence of that. It is seems, it is the inadequate or limited employment opportunities in the sector that has made them to lower their expectations.

The survey also shows only 6% (table 6.5) from Dixcove intended or had family members who have undertaken training to be employed in the oil industry. Programmes instituted in Ghana to train people for the hydrocarbon industry related employment do not target the fisher folks since they [fishermen] seem to lack the technical competence and education. Meanwhile, in terms of direct impact of oil, it is the fishermen whose livelihoods are more directly affected. As indicated in the previous chapter, the EDC programmes are

targeted at businesses in the upstream sector such as oil and gas accounting and pay-roll and marketing. But given the content of EDC training programme and who it targets, there appears to be mismatch between the trainings provided and the persons whose livelihoods are directly negatively affected by oil exploration. The fishermen are mostly uneducated, hence will not benefit from training in oil and gas accounting. There is limited evidence in Dixcove to show that fishermen are being trained for alternative livelihood. It emerged during this studies that a few fishermen [from other communities] serve as informants for the navy and the oil companies to report persons that go near the oil rigs[46]. This can be a source of conflict among the fishing community as reporting a fellow fisherman can be seen as betrayal of trust among the community. Some of the fishermen also are not interested in employment in the oil industry. For them, fishing is more than an economic activity, it is a way of life that they [fishermen] and their grandfathers have lived for centuries, there is no need to leave such an activity for another enterprise[47].

Beside direct employment that are not available for fishing communities, restriction on fishing indirectly affect other employment opportunities such as trading in fish products and food vending that have traditionally existed in the locality due to general decline in economic activities in the area. It seems it is not only fishing that is negatively affected in the locality, but also trading activities are dwindling since the fishermen do not have adequate money to purchase other goods and services in the local economy. During the local interviews and focus group discussions, it seems other economic activities such as trading in Dixcove's are linked to the fishing sector. Fishing provides direct employment for the men and women, and some community members also benefit from fishing-related industries such as boat building, net making, food industries (fish processing, local restaurant and food venders), transport and petty trading. Restrictions on fishing without provision of alternative livelihoods by the government and oil companies for the fishermen and fishmongers can be problematic for the local economy.

The Corporate Social Responsibility (CSR) report of Tullow's CSR (2012, p. 63) however, indicates that the company has engaged communities affected by oil exploration activities to minimise and mitigate harmful socio-economic impacts of oil, as well as promoting opportunities for local communities to access sustainable economic benefits. In 2013, Tullow reported that it sponsored 1,400 people from 26 fishing communities along the Western Coast

[46] Interview, Chief fisherman, November 4, 2014, Dixcove.
[47] Interview, Fisherman, November, 2014, Dixcove.

of Ghana to receive training in strategic business management, entrepreneurship development, soap making and oven and ice box construction as part of the Jubilee Livelihood Enhancement and Enterprise Development (LEED) Project (Tullow's CSR 2013, p. 52). Based on the LEED project, fishermen, fishmongers and processors, artisans and members of the coastal communities are trained and educated on how to have access to credit facilities [loans] and other business support (Tullow's CSR 2013, p. 52). The challenge is how sustainable these programmes are, and whether or not these loan facilities will not lead the fishermen into more debts. Also, are there mechanisms to do follow-up on the new economic activities and to offer advices on how to improve them. In Dixcove, the survey shows that only 6% of fishermen and fishmongers admitted that some form of training for alternative livelihoods have been provided by the oil companies operating in the area as suggested by Tullow (Tullow's CSR 2013). Some of those surveyed suggest that they not aware of any alternative livelihoods being provided by the government or oil companies for even the most vulnerable groups like women, hence some of the women have to raise their own capital for their economic activities.

6.6 Oil and vulnerability of women's livelihood in Dixcove

Miller (2004) argues that the oil industry is a complex of transnational network actors that has differentiated social and economic impacts. Women in the coastal communities can became more vulnerable to the political and economic power of the oil companies and the government (Adusah-Karikari 2015, p. 30). A decline in women's economic activities due to restriction on fishing reduces the space for economic and social reproduction, destroying their sources of income and livelihoods (Oluwaniyi 2011). Obi (2013) argues those who experience the oil curse the most are the citizens whose livelihoods are alienated and threatened by the political economy of globalized capital and the depredations of the greedy transnational elites. In some cases, it seems the strategic economic interests of national governments and oil companies can take precedence over community welfare and women's livelihoods (Adusah-Karikari 2015).

In Ghana, women are important to the survival of families due to their role in the provision of means of sustenance. In rural communities in the country, women often produce the food crops or trade in goods and services to provide food and social needs. In coastal communities, women's livelihoods revolve around fishing, and activities such as oil exploration that disrupts the sector can have negative consequence for their livelihood. The hydrocarbon industry can pose challenge to the livelihood of rural women when it pollutes land

and water bodies on which the women depend on for their family sustenance. As Adusah-Karikari (2015) argues, in examining how oil impacts a country's development, there is the need to look at the 'big picture' by moving beyond state level challenges associated with the hydrocarbon industry to how the industry can impact rural community livelihood. By focusing on the big picture, it will helps us to understand how the impact of hydrocarbon assemblage manifests unevenly and differently across space and class in localities where oil exploration occurs. The experiences of women with oil exploration in Dixcove provides a gendered dimension of the challenges and opportunities that the industry present where women experience economic vulnerability and marginalization, but also some improvement in economic activities and social status as they are able to contribute to the family well-being through engaging in petty trading.

Women in Dixcove are mostly fish mongers who buy fish from the shore, smoke or dry and re-sell them to other middle-women or final consumers. Although it is not a taboo or forbidden for a woman to go to fishing, the practice is not common in most communities. There is a gendered division of labour where the men go for the fishing, where the women process them for selling on the market. As one woman explains:

> 'We [the women] sell the fish that the men bring. We smoke and process the fish for selling, but in recent times we hardly get enough fish to smoke and re-sell … Due to the declining fish available and this limits our ability to trade and repay the monies we used in purchasing the fish from the fishermen. Decline in our fish business affects our ability to provide for our families' (Interview, fishmonger, November 2014, Dixcove).

This account by the woman shows how the decline in fish catch among the men can affect the livelihood of the women and their families. Decline in fish catch seems to make life difficult for the women as it limits their ability to supply fish to the market, limiting their profit as well. Thus, the success or failure of the women seems to be invariably tied to that of the fishermen.

Apart from the decline in volume of fish catch, the market for fish and its related industry in Dixcove also seems to be shrinking since due to the poor economic situation in the area, some of the inhabitants have migrated to the nearby cities (Takoradi and Accra) in search new economic opportunities [employment]. Petty trading as an economic activity has also been declining due to migration from the area and falling purchasing power in the local economy. The market for the products seems to be declining in the fishing localities. Meanwhile,

increases in fishing equipment such as fuel affects livelihoods of the rural women as the prices of the fresh fish they also buy increases.

Britwum (2009) argues that reduction in fish catch due to oil exploitation can undermine the economic empowerment of women in coastal communities in Ghana whose economic activities revolve around fishing and its related activities. In Ghana, women are the ones most engaged in fish processing and trading (Finegold et al. 2010), hence reduction fish catch due to restriction for oil exploitation will negatively impact the amount of fish the fishmongers (women) will get and process for the market (Adusah-Karikari 2015). Fishing and post-harvesting activities such as smoking and drying of fish provide a livelihood for the women in rural coastal communities. Women are therefore, affected by economic challenges associated with the fishing sector due to their relationship with the industry and as inhabitants of communities whose livelihood is shaped by fishing (Skaptadottir 2000).

In Dixcove, there are cases where the economic and political status of some of the women have improved with the discovery of oil in 2011 since the women were able to diversify into trading in second hand clothing, food stuffs and tie-and-dye to support their husbands fishing activities[48]. This suggests that oil can indirectly lead to economic and political empowerment of some of the women in the area. Traditionally, women in Ghana are often marginalised economically in fishing communities due to cultural norms that view the men as superior to women and the heads of families. Because the oil industry is male dominated, there is the tendency that it will be reinforcing existing male dominated social relations as it is men that are likely to be employed in the sector (Darkwah 2013; Ablo 2012). Some of the women have however seen improvement in their economic fortunes since they needed small capital to start new economic activities. Those women seem to have received more recognition from their husband and to have more influence in family decisions and this has implications for women empowerment[49]. These women can be seen as experiencing blessing due the presence of oil in the area, instead of a curse. Declining fishing catch can somehow be tilting some of the family influences to the female as the women are adopting alternative livelihoods more easily than their male counterparts. Some women claim they are now learning how to use the coconut branches and leaves to weave mat and baskets to earn a living (Boohene and Peprah 2011) but there are questions as to how sustainable such economic activities are.

[48] Focus group discussion with fishmongers, November 2014, Dixcove.
[49] Focus group discussion with fishmongers, November 2014, Dixcove.

King's (2010) baseline study in coastal communities near Ghana's oil fields noted that women often complement their husbands in the provisions of sustenance services for the household. Yet, the social and institutional framing of men as breadwinner, where the men are supposedly viewed as the main providers of family needs have limited women's opportunities to engage in paid economic activities outside the home, making them economically dependent on the men (Gillis and Hollow 2009). Adusah-Karikari (2015, p. 28) however, argues that referring to only men as breadwinners is misleading in a Ghanaian household context since although at the 'discursive level' women are not viewed as breadwinners, in practice they have played such role in family (see Robertson 1984). Overa's (2007) study on the role of women in Ghana revealed that women often add [topped up] their personal money to that given by the husband in order to take care of the family food. But as Gillis and Hollow (2009) contend, the allocation of different roles and statuses in society is influential in producing, reproducing and reinforcing gendered cultural difference in societies. The impact of oil in Ghana is differentiated across space and class, and even though Dixcove is not experiencing a full-blown local curse, there are signs of environmental challenges, economic vulnerability, poverty, income decline, and limited unemployment in fishing communities located near the oil fields.

6.7 Conclusion: differentiated impacts of oil in local economies

The oil industry can be seen as complex, with several actors and interests that shape global energy supply. Oil exporting countries earn foreign exchange from the sale of the crude oil, while the same crude oil powers the global economy, and TOCs earn profit on their investment in the sector. The need for oil companies, businesses, and political elites to maximise the economic benefit from the hydrocarbon industry drive investment in oil. However, for local communities located near the oil fields, beside concerns of environmental consequences such as pollution (Obi and Rustad 2011; Watts 2009) the hydrocarbon industry can negatively affect local livelihood and income. The analysis of oil exploration on the local political economy of Dixcove shows that whereas the area is not experiencing high levels of poverty, inequality, environmental pollution and violent conflict as in the case of regions like the Niger Delta, fishermen and fishmonger whose livelihood directly depend on fishing and its related activities experience some differentiated income decline, non-violent conflicts between fishermen and oil companies. The fishermen and fishmongers also experience some employment challenges. Oil exploration can lead to some economic vulnerability of women, if they are unable to diversify their income activities or engage in alternative livelihoods.

How natural resources mediate and shape development in a country goes beyond and manifests differently at the national and local levels, as well as on various section of the society. The experience of fishermen and women in Dixcove demonstrates how the exploration and production of oil affect the social and economic circumstances of coastal fishing communities differently (Adusah-Karikari 2015). Dixcove's embeddedness into the global hydrocarbon assemblage through oil exploration is leading to restriction on fishing in some parts of the country's sea space which negatively impact on fisher folks' income. This demonstrates that local experiences can be mediated by globalised economic processes since low incomes and pollution in coastal communities are partly result of locals losing the sea space to the global hydrocarbon assemblage. Restrictions on fishing due to oil exploration seems to be disrupting the fishing industry that constitutes a complex food chain, made up of fishermen, traders (mostly women), retailers and producers (Obeng-Odoom 2014a; 2014c; 2014d).

The experience of fishermen and fishmongers in Dixcove helps us to understand how global energy needs and the Ghanaian state attempt to capitalise on oil for its development, reconstitute and shape the local fishing industry and livelihood. Construction of oil as global and national resource seems to be intertwined [goes in tandem] with the increasing vulnerability and marginalisation of fishing communities since decisions that are taken by the state in collaboration with oil companies such as restriction on fishing is resulting in decline in fish catch and incomes. According to Stevens et al (2013), as the oil industry expands, sea space use decisions are increasingly influenced by external economic interest rather than local needs. To use oil as the instrument of development in the area seems dependent on the provision of training for the youth to take up employment in the sector. There are however, doubts if there are such training programmes for the youth who wish to secure employment in the oil sector, while the capital intensive nature of the oil industry limits its employment potential.

Besides the local community's location which impacts how oil exploration affect the livelihood of its inhabitants, increased opportunity to borrow and government spending, volatility of global oil prices and national level economic growth also impact the challenges experienced by the local economy. Since the discovery of oil in 2010, loan opportunities for the government of Ghana has increased, including the China the US$3 billion dollar loan facility from the Chinese Government. Ghana government overspending on salary and provision of social services seem to have increased since 2011. These increases in spending sometimes lead to huge deficits, currency depreciation and inflation which also affects the livelihoods of local economies since goods and services they use for their fishing become

expensive as well (BOG 2014; 2013; GSS2015b; 2014b; 2013). Additionally, a quantitative economic growth rate that has been driven by oil since the onset of commercial production of oil from the Jubilee field in 2011 appears not to have translated into poverty reduction, improvements in living conditions and employment creation both at the national and local scales on the economy. Such 'jobless growth phenomena, where increases in GDP do not translate into improvement in living conditions for most citizens has characterised some resource rich economics (UNECA 2012; Mogalakwe 2003; Samatar 1999). Some of the high GDP growth rates in Africa have been criticised as 'window-dressing' which façades the poor living conditions of citizens in these resource rich economies (Planitz and Kuzu 2014).

Existing analysis of the challenges associated with the hydrocarbon industry that focuses mostly on the relationship between oil and poor economic growth at the national scale is problematic since the impact of oil is differentiated across space and class. The hydrocarbon industry which produces the resource curse is global assemblage that has actors, agencies and structures beyond the state. Due to oil discovery offshore the coast of Dixcove, the area has embedded in the global energy assemblage and this is impacting the livelihoods of the fisher-folks in community. Local scale analysis of the impact of oil on fishing livelihoods in Dixcove brings out the nuances in the challenges that the oil industry poses to local communities. The impact of oil on Dixcove provides insight for understanding the uneven manifestation of the challenges that are associated with the hydrocarbon industry.

7 Chapter 7: Conclusion: democratic polity, actors, agencies and structures and the problematic impact of oil on Ghana

7.1 Introduction

This study examined the problematic nature of oil for development in a democratic setting: Ghana. In previous analyses of the resource curse in developing countries, weak institutions, bad governance and corruption have been noted as some of the main challenges that hinder the state or the political elites from using natural resource windfalls for the benefit of the general populace. Ghana being a democracy, it provided a case to interrogate whether or not the social construction and manifestation of the curse are the same as revealed in other studies in the developing world, or whether a democratic polity mitigates the problematic impacts of oil on development. This study revealed how a 'globalised assemblage', an interaction between states, global, and local politics and actors, agencies and existing economic and political structures condition the challenges associated with oil-based development. This concluding chapter summarised the main findings of the impact of oil on Ghana's development.

7.2 Democratic polity and directionality, and temporality/spatiality of development challenges associated with oil

This study revealed that oil can be problematic for development in developing countries, even in a democratic setting because of its negative impacts (such as its susceptibility to rent seeking and technology and capital intensity with limited linkages to other sectors of the national economy); global politics/interests and structures; and national and local politics (such as competitive clientelism). The impact of oil on Ghana showed that although natural resources can be problematic for development in developing countries, the challenges are non-deterministic, but are socially produced, shaped and conditioned by a country's political economy and its interaction with the potentially negative impacts of oil, global politics actors and structures. Ghana's case also revealed that although a democratic polity does not insulate a country from the challenges oil poses to development, it can mitigate them. Compared to Nigeria (Stevens 2015; Chindo et al 2014; Watts 2010), Ghana's competitive electoral pressure has partially compelled the political elites to be responsive, by directing oil windfalls into the provision of social services in order to enhance their electoral fortunes. Oil windfalls therefore, have had a positive impact on education and healthcare delivery in Ghana. Besides Ghana's competitive electoral environment that has forced the government to use oil windfalls for the

provision of social services, vibrant local CSOs and the country signing onto global initiatives like EITI and PWYP have also compelled the government and companies to disclose revenues that have accrued from oil. This seems to have contributed to ensure transparency in how oil windfalls are used in the country. Thus, how oil windfalls are utilised is shaped and conditioned through interactions between 'globalised' heterogeneous actors, agencies and structures.

Ghana's case also indicated that the directionality of the problematic challenges associated with oil-based development are not predetermined. The traditional literature on the resource curse noted that a country manifests a curse where natural resource windfalls inflows into an economy makes it susceptible to the Dutch Disease — the tendency of the local currency to appreciate, making imports cheaper, and subsequently leading to contraction of the local manufacturing and tradable sectors (Ploeg and Venables 2009; Sala-i-Martin and Subramanian 2003; Sachs and Warner 1997; Corden and Neary 1982). The relationship between oil and the movement of the Ghana cedi however defies such as traditional notion of the curse. Indeed, this study revealed that oil export from the Jubilee field since 2011 has not reversed the depreciation of the local currency. It raises questions about the hitherto held notion that a sudden influx of revenue from natural resources could solely be the cause of appreciation of the currency of mineral or oil rich economies. As Ghana's case revealed in this study, the impact natural resources, such as oil, on national development, including currency movement are embedded and interwoven with socio-economic and political conditions or structures at global, national, and local scales.

Besides their non-predetermined directionality, this study also revealed distinct temporalities and spatialities to the problematic nature of oil for development in the developing world. Spatially, Ghana's case showed that whereas oil has had positive impacts on the provision of social services nationally and the generation of some employment for the educated, some of the fisher-folks have experienced decline in income due to restrictions on fishing in the sea near their locality. Temporally also, increased Ghana government borrowing, backed by oil, seems to be creating a 'deferred or delayed curse' where the future generation will be burden with debt. Ghana's experience with oil exploitation also showed that the country is not currently experiencing oil-related violent conflict, even though there have been reported cases of clashes between fishermen and oil companies in the country's western coast due to restrictions on fishing (Agbefu 2011; Ackah-Baidoo 2013). Yet, because conflicts are not episodic events, but are built over time, the seeming non-violent conflicts between the fishermen and state/oil companies could generate into future violent conflict if the perceived

neglect of fishing communities are not addressed. As it happened in Nigeria, a 'deferred violent conflict' might emerge later in Ghana when fisher-folks' grievances, income decline and economic challenges are not addressed. Watts (2010) noted that oil-related violent conflicts manifest due to mismanagement of oil windfalls by political elites and their allies, unequal distribution of oil wealth, destruction of local livelihoods and human right abuse of locals who protest against oil activities by the state and oil companies. Agbefu (2011) and Jonah (2010) argued that conflict can emerge in Ghana's oil industry where local people feel their expectations of economic gain from oil are not met and their local source of livelihood [fishing] is threatened by the activities of oil companies operating near the locality.

Further, the problematic impact of oil on Ghana also showed that the cross-sectional studies by Auty (2001), Sachs and Warner (2001), Gelb (1988) and others have not adequately accounted for the differentiated impact natural resources have across space, time and class. Ghana's case indeed showed that the impact of natural resources such as oil are differentiated, and manifest unevenly across national and local sectors and spaces. The local impact of oil on incomes and employment in Dixcove, a fishing community in Ghana highlights the spatial dimension of the challenges that oil exploitation can pose to development.

Theoretically, the analysis of this study revealed that the existing literature on the curse is problematic due to its methodologically nationalist approach where analysis of oil-based development challenges have focused on state politics and weaknesses (or capabilities). Such analysis pays little or no attention to how state politics interact with local and global politics and structures to shape development outcomes in resource rich economies. Ghana's case showed that while the national scale analysis is important in explaining the impact of natural resources, as noted by Bridge (2008), such analysis pushes questions of the role of transnational organizations, actors and structure and their impact on development to the background. It seems to overlook how local politics interact with the national to shape development outcomes. Partly, Ghana signing onto global initiatives such as EITI and PWYP has ensured transparency in how oil windfalls are utilised since the oil companies and the government are obliged to publish revenues that accrued from the oil industry.

Ghana's case revealed that whereas elements of the broad national political economy such as strong institutions and transparency as noted by (Ross 2012; Alexeev and Conrad 2009; Brunnschweiler and Bulte 2008; Heum 2008; Humphreys et al. 2007) are important in analysing the problematic impact of oil in the development process, the politics, agencies,

actors and structures that shape the impact of resources windfalls are a 'globalised assemblage'. The globalised assemblage that shapes Ghana's hydrocarbon industry comprise the Ghanaian state and its institutions [GNPC acting as Ghana's NOC, Petroleum Commission which acts as the regulator, Ministry of Petroleum responsible for policies, EPA for environmental regulation], and TOCs such as Tullow, Kosmos, Anadarko and NOCs from China. External commodity price volatilities also affects oil revenue in-flows into Ghana. Global initiatives such as EITI and PWYP and local CSOs like ISODEC and ACEP have also been vocal in ensuring transparency in how oil windfalls are utilised in the country. Politicians, chiefs and fishermen from the Western Region of Ghana have also been critical in influencing policies in the sector, including their insistence that the minister in charge of petroleum sector comes from the region. Thus, it is this globalised assemblage of heterogeneous actors, agencies and structures that shape the impact of oil on Ghana.

7.3 Ghana and the problematic challenges associated with oil and development

Based on the literature on the resource curse, a natural resource rich economy experiences a curse where resource windfalls lead to poor economic growth, the Dutch Disease (local currency appreciation), increased state borrowing and debts, rent seeking and corruption, reduced agricultural and industrial sectors growth, limited employment, environmental degradation and natural resource-induced violent conflict. This study has examined whether or not Ghana is experiencing such dimensions of the curse. In other words, it analysed the problematic development challenges associated with oil exploitation in the country. In this analysis, the study argues that Ghana can be said to be experiencing an oil curse if it manifests most [at least six] elements of the resource curse (as indicated in Table 7.1).

Table 7:1: Elements of the curse and Ghana's experience with oil

	Dimensions of the curse	Yes	No
1	Reduced economic growth		√
2	Currency appreciation		√
3	Increased government borrowing and debt	√	
4	Increased rent seeking and corruption		√
5	Reduced agricultural growth		√
6	Reduced industrial growth		√
7	Negatively affected employment		√
8	Violent conflict		√
9	Environmental degradation		√

Based on the literature on the curse (Ploeg and Venables 2011; Auty 2001; 1993; Sachs and Warner 2001; 1999), a natural resource rich country experiences a curse where there is a negative inverse relationship between resource windfalls and GDP growth rate. This study however, revealed that in the case of Ghana, although the country experienced some challenges with regards to its economic growth rate, fluctuating during the period, the economy still grew at about 5% between 2011 and 2016. Data from the GSS and ISSER indicated that apart from 2011 when the country experienced an episodic growth rate of 14.4% which coincided with the country's commencement of oil production, its growth rate has been similar to the pre-oil era. Even with the growth challenges that Ghana experienced in 2013 and 2014, there is the need to place those problematic economic growth rates within the broader political economy of the country, such as the energy crisis it experienced during those periods and the fall in cocoa prices on the global market. As Jerven (2015) notes, when dealing with statistics on growth in Africa, one has to examine the historical and political economy of such growth rates. Similarly in Ghana's case, one has to examine the growth rate in 'pre-oil' and 'during-oil' eras.

There is also the need to understand the effects of other internal and external factors such as volatility of commodity prices which influence growth rates (Jerven 2015). Indeed, this study revealed that in the Ghana case, besides the volatility of oil prices, which poses some challenges for its growth, national politico-economic factors such as an energy crisis between 2011 and 2015 affected its growth. Volatility of the prices of commodities like cocoa and gold also affected Ghana's economic growth. As Dehn (2000) noted, per capita growth rates of countries can be significantly reduced by large discrete negative commodity price shocks. Ghana experienced gold and cocoa price shocks within these periods which contributed to the growth rate fluctuations and challenges. Jerven (2015) also noted the need to examine the political economy of the growth rate [i.e. who the growth benefits] and not only the aggregate growth. Ghana's case showed that there have been positive impacts on provision of social services such as health and education. While oil production has been problematic for Ghana's economic development due to its price shocks which affected the state's ability to plan its spending, the country is not experiencing a curse with regards to its GDP growth since 2011.

This study also revealed that whereas the cross-sectional studies seem to suggest that the problematic growth rates manifests evenly in the resource rich economies (Auty 2001; 1993; Sachs and Warner 2001; 1997; Gelb 1988; Karl 1997), Ghana's case showed that the impact of oil on economic growth and other development indicators is differentiated across sectors, spaces and manifest unevenly. Ghana economic growth rates differ across sectors between 2011 and 2016, with some sectors performing better than others (as indicated in table

5.6). For instance, in relative terms, while Ghana's agricultural sector's growth rate, as well as its share of GDP has declined (from 29.8% in 2010 to 23.7% in 2014), the service's sector share of GDP increased from 49.1% in 2011 to 53.5% in 2014, and industry's share also increased. Oil contributed positively to Ghana's industrial and service's sectors growth rates.

Another problematic impact of oil on development is, it can indirectly increase a country's debt because of its fetishistical appeal through creating an 'illusion of wealth' (Watts 2003; Kapucinksi 1982). The political elites seem to ignore the volatility of its price due to external shocks and its negative impact of windfalls. In Ghana, this has a tendency to increase government debt since the state sometimes uses oil to collateralise its loans. The challenge for the resource rich economies like Ghana is that whereas the prices of commodities like oil are volatile and revenues can decline, government spending on social services cannot easily be stopped since the political elites earn some of their support based on their provision (Gelb and Grasmann 2010; Gary 2009). The Ghana case revealed that since 2011, government borrowing and debt have increased, similar to other resource rich developing countries (Sala-i-Martin and Subramanian 2012; Auty 2001; Sachs and Warner 2001; 1997), partly because opportunities for the Ghana government to borrow have increased, especially from China. Data from GSS showed that Ghana's debt as a percentage of GDP increased from 40% in 2011 to 55% in 2013 and to 70% in 2016. The relatively high debt to GDP ratio is however not peculiar to Ghana since it reflects a feature of underdeveloped economies generally. These debts were accrued due to the government borrowing for infrastructure, provision of social services and payment of public sector salaries. In a democratic setting, with highly competitive elections such as Ghana, a country can experience a 'democratic debt curse' where the government uses oil-backed loans to finance social services and increase wages to enhance the prospects of electoral victory. The increased in Ghana government debt also highlight the temporality to the problematic nature of oil-based development, where government oil-backed borrowing can be creating a 'deferred or delayed debt curse' burdened for future generations.

The impact of oil on the movement of Ghana's local currency also revealed that the directionality of the oil-related development challenges (or the elements of the curse) are not predetermined. Whereas the existing literature on the curse focuses on how natural resource windfalls lead to currency appreciation (Ploeg and Venables 2009; Auty 2001; Sachs and Warner 1997), Ghana has been experiencing a currency depreciation since oil production started. The country's local currency has been depreciating due to a high government budget deficit and demand for foreign currency for imports. The study revealed that apart from a few

periods in 2008 and 2010 when the Ghana cedi appreciated against the euro and the pound, it continued to depreciate against its main trading partner currencies (BOG 2013; ISSER 2013; GSS 2012; 2010) even when the country started exporting oil in 2011. This suggests that the factors that mediate the movement of a local currency are more nuanced. It also raises questions about the hitherto held notion that the sudden influx of windfalls cause local currency appreciation (Auty 2001; Sachs and Warner 2001). It showed that the impact of natural resource windfalls on development, including currency movement are not predetermined, but embedded and interwoven with existing political economy and structures.

Conventionally, natural resources can be problematic for development where they negatively affect agricultural and industrial growth by discouraging labour and capital from the tradeable sectors (mining, service, manufacturing and agriculture) (Morris et al 2012; Sachs and Frankel 2010; Auty 2001; Sachs and Warner 2001). Increased windfalls into an economy and subsequent appreciation of a local currency can make a country's agriculture and industry less competitive internationally (Frankel 2010; Steven 2003; Sachs and Warner 2001; 1997). However as table 7.1 indicated, this study showed that although Ghana's industrial and agricultural sectors have faced challenges since oil production started in 2011, there is little evidence to suggest that such challenges are the direct results of activities from oil exploitation.

The data on industry growth rate in Ghana showed that apart from 2011 when the country's industrial sector had a growth rate of 46.1%, the average growth rate for the sector was 6% between 2003 and 2015. Its contribution to GDP increased from 24.9% in 2003 to 25.6% in 2011 to 28.4% in 2014 (MOFEP 2015). Although the industrial sector in Ghana had challenges in 2014 and 2015, there is also no evidence to suggest that such poor growth rates can be attributed to the hydrocarbon industry. Nti (2015) noted that the challenges with Ghana's industrial growth since 2013 can partly be attributed to the country's energy crisis during the period, high cost of credit for industry and competition from cheap imports. Whitfield et al. (2015) also argued that competitive clientelism in Ghana's political system where there is fragmentation and competition for resources among the political elites and their lower-level factions negatively affects their ability to form policy that could lead to industrial development. This study however revealed that a gas processing plant that was built due to oil exploitation in Ghana has provided gas for some of the country's energy generation plants. Hence, although there is no large scale oil-based industrial development in Ghana, the use of gas for energy generation is cheaper then imported crude oil. Gas from the Jubilee field has been beneficial

for energy generation in the Ghana. Thus, as Morris et al. (2012) argued, the natural resource sector can provide linkages to other sectors of the national economy.

The agricultural sector of a country can be adversely affected by the natural resource's sector (Auty 2001; Gelb 1988) when resource rich governments become less concerned with investment in the sector when they have windfalls from natural resources like oil. Agriculture has been the backbone of Ghana's economy, and it has had an average annual growth rate of 5% since the 1990s. This study revealed that although the country had one of its lowest agricultural growth rates of 0.8% in 2011 when oil production started, on the average, the sector's growth rate from 2012 to 2015 is similar to between 1990 and 2010. Thus, this study showed that in analysing the statistics on Ghana's agricultural growth, there is a need to be guided by Jerven's (2015) advice that one has to examine the historical trend of data and to place growth data within the broader political economy. Ghana's agricultural growth has been influenced by weather patterns since it is mostly rain-fed. The growth rate has fluctuated and been differentiated among the various sectors such as food crop, cash crop, livestock and fisheries. The sector's share of GDP has declined from 29.8% in 2010, 25.3% in 2011, 22.7% in 2012 and 21.3% in 2013 partly due to a stronger growth in industry and service sectors of the economy, but in absolute terms, agriculture has experience growth during those periods.

Natural resource windfalls have been noted to be problematic for employment creation, especially for locals due to their capital and technological intensity (Humphrey et al 2007; Karl 2003). In the case of Ghana, this study showed that 60% of the Jubilee field's employees in the upstream sector are locals (ISODEC 2014). Data from Tullow also showed that because of its localisation of employment policy, 85% of its employees in Ghana are locals (Tullow 2013). The study revealed that the TOCs helped the Ghana government to establish a training centre in 2013 to train locals for employment in oil and gas services. But whereas the EDC training programmes provided some employment for some classes of persons (mostly the educated) in the oil sector, fisher folks in coastal communities whose livelihoods are directly affected by oil exploration due to restriction on fishing have not benefited from it. This study also revealed that despite the high number of locals employed in the oil sector, oil workers in Ghana complained of low pay and poor working conditions. There is however, little evidence from this study on Ghana to suggest that the development of the oil industry has discouraged capital investments and employment from other sectors of the national economy.

Besides the impact of oil on a country's economic growth and employment, natural resources endowment has been noted to mediate and condition bad governance, corruption and rent seeking. Akin to NORAD (2013), UNDP (2011), Boschini et al. (2007), and Mehlum et al. (2006) argument, this study also revealed that democratic polity and 'strong' institutions that ensure transparency in how windfalls are utilised can partly mitigate corruption in resource rich economies. Before oil was discovered in Ghana, corruption allegations were common (Awal 2012; Hutchful 2002; Boafo-Arthur 1999; Frimpong-Ansah 1991). This has persisted even when the country transitioned to democracy in 1993 (CHRAJ 2013; 2011). Since 2011, these reports of corruption have increased and there are often newspaper and radio reports of corruption allegations among politicians (ISODEC 2014). Increased local media reports and perception of corruption however, seem to be reflective of Ghana's competitive democratic climate where accusations of corruption against political opponents can serve as a tool for electoral strategy. Yet, TI's CPI, one of the most credible measure so far, showed that the perception of corruption by foreign investors has been declining in Ghana (TI 2014). The CPI showed that Ghana's performance on the index has improved from 39 in 2011 to 48 in 2014. The TOCs and the government signing on the EITI and PWYP ensured that oil windfall payment to the state are known to the public and CSOs. Thus, EITI and PWYP, both actors in the globalised assemblage, that constitute and shape the oil industry can be seen having positive impact on Ghana since it contributed to ensure transparency in how oil windfalls are used.

Ghana's case also showed that the development of the hydrocarbon industry can have other impacts on the political economy of the resource rich country. The oil industry in Ghana has led to increases in gross FDIs inflow, increased government revenue and generated some employment. In 2011 and 2012, Ghana received US$444.2 and US$541.07 million dollars respectively from oil revenue, and US$846.7 million in 2013 and US$978.8 million in 2014. Ghana's share of revenue is based on its participation interest (10%), income tax and royalties. The study revealed that since Tullow's initial investment in the oil sector in 2003, oil-driven FDIs inflow has made Ghana one of the leading recipients of FDIs in West Africa (UNCTAD 2009). Data from UNCTAD showed that annual inflows of FDIs into Ghana increased from US$68 million in the 1970s to US$636 million in 2006, and to US$855 million dollars in 2007 (UNCTAD 2009). It further increased to US$2.9 billion in 2009, US$3.2 billion in 2011 and US$3.3 billion in 2012 (UNCTAD 2013; 2011) driven by investments in the Jubilee and TEN fields. This study however, revealed that even though the FDIs inflows into Ghana are huge since 2003, it also raises questions as to how this translates into structural transformation of the

economy. Indeed, Ghana's case showed that the raw crude is exported, while refined petroleum is imported into the country. This partly reinforces Lee et al. (2008) and Lee (2006; 2002) argument that, in analysing the natural resource sector, there is the need to examine the value chains and how windfalls are distributed across space. The country's economy is structured and conditioned by a colonial legacy to export raw materials and import finished products.

Beyond the problematic nature of oil on development nationally, a localised curse or challenges can manifest where oil exploitation leads to environmental degradation, disruption of the local economy through pollution of river bodies and farmlands, poverty and inequality, violent conflicts and increased economic vulnerability of the poor, especially women (Obi and Rustad 2011; Badmus 2010; Watts 2007; 2004). Based on this study, Dixcove could be said to experience a localised curse if it manifests most of the local challenges associated with oil exploitation. Localised development challenges can include environment degradation, conflict, high incidence of poverty and inequality and limited access to social services compared non-resource rich regions in the country (Chindo et al 2014; Obi 2013; Obi and Rustad 2011). For instance, in 1996, a survey in Nigeria (one of the often cited cases of the curse in Africa) showed that the Niger Delta which produced most of the country's oil wealth had the highest poverty rate of 58.2% in the country, with limited access to health care and water and low literacy rates compared to other parts of the country (Ross 2012, p. 171; Chindo et al. 2014).

From this study, the Ghana's case showed although oil is problematic for development, the directionality of incidence of poverty and inequality is not always predetermined. Data from the GSS showed an uneven distribution of poverty in the country, including the Western Region between 2005 and 2014 (GSS 2015b). The data revealed that nationally, the incidence of poverty in Ghana declined from 31% in 2005 to 24% in 2013 (GSS 2014). In the Western Region, where Dixcove is located, the poverty rate declined from 22.9% in 2005 to 20.9% in 2014, which is lower than the national rate of 24% (GSS 2015b). Further, the district level poverty map of Ghana produced in 2014 showed that the AWDA (including Dixcove), has one of the lowest poverty incidence rates in the country of 19.3% in 2014 (GSS 2015b, p. 42). Thus, while the region has poverty challenges, it cannot be said to be experiencing a local curse with regards to the incidence of poverty. Additionally, the locality, Dixcove has access to basic social services such as potable water, health facilities and schools.

However, based on the interviews and the survey with the fishermen and fishmongers in the community, the study showed that whereas the incidence of poverty in Dixcove and its

environs in general is not as bad as compared to many other parts of the country, it is unevenly distributed among the people, with fishermen and fishmongers in the area experiencing a decline in income due to restriction on fishing in the sea space near their locality. Eighty-one percent of the fishermen and fishmongers surveyed during this study indicated that between 2011 and 2015, their incomes declined between 20% and 50%. Manu's (2011) study in Cape Three Point area earlier also showed that since oil production started, fishermen's net incomes have declined due to restriction on fishing in the locality.

The study also revealed oil exploitation has been problematic in terms of employment in Dixcove since restrictions on fishing in the locality negatively impacted their economic activities, yet, there are no or limited provisions for alternative livelihoods or new skills training for the locals. The survey showed that only 6% from Dixcove intended or had family members who have undertaken training to be employed in the oil industry. And even those who were trained had not got employment yet. Most of the skills training programmes instituted by the government and TOCs for oil industry related employment do not target the fisher folks even though, in terms of direct impact of oil, it is the fishermen whose livelihoods are more directly affected. Most of the fishermen/fishmongers are 'uneducated', while the training programmes are mostly focused on businesses in the upstream sector such as oil and gas accounting and marketing. Thus, it appeared there is a mismatch between the trainings provided and the persons (fishermen) whose livelihoods are directly negatively affected by oil exploration.

This study showed that, similar to Quist and Nygren's (2015) study in Mexico, the impact of oil on local livelihoods is differentiated among the fishermen and fishmongers in Dixcove. The presence of TOCs and restrictions on fishing divided fishermen into those with resources and who are courageous enough to fish beyond Ghana's sea, such as into Nigeria's sea space, and the less resourced who have to fish within the limited sea space in Ghana. Those who have the resources and are able to fish far away were not as affected negatively as those that are confined to the limited space after the demarcations around the oil rigs. But while Quist and Nygren (2015) argued that in the case of Mexico, there are contesting voices among those in the fishing community as to where to channel grievances and compensations issues (whether TOCs or the state), in the case of Dixcove, NGOs such as FON have helped the local fishing communities to organise and present their challenges that are arising as a result of restriction on fishing to the state. The difficulty is, during the interviews and discussions, it was revealed that fishermen's challenges have not been addressed, including complains that the fish are attracted to the lights at the oil rigs and how this affects their fishing and incomes.

Akin to Quist and Nygren's (2015) study that showed that the hydrocarbon industry can compete with local livelihoods such as fishing for space in Mexico, this study showed that there is competition for space between fishermen and transnational oil companies in Dixcove. There are tensions between oil companies and fishermen in Dixcove due to restrictions on fishing in the sea and perceived neglect of localities located near the oil fields by the state and the TOCs in the allocation and appropriation of oil windfalls. As Watts (2010; 2009) argued, resource rich regions can experience conflicts where persons in these regions feel cheated in the allocation of the windfalls and resort to armed conflict to disrupt production or to demand a share of the windfalls. An armed conflict, according to the Uppsala Conflict Data Program (UCDP), is a dispute which involves government and/or territory, involving there use of armed force between two parties, of which at least one is a state, resulting in at least twenty-five battle related deaths in a calendar year (ACCORD 2009; UCDP 2008). Ghana's case showed that the country is not experiencing oil-related violent conflict, even though there were some reported cases of clashes between fishermen and TOCs around the oil rigs (Agbefu 2011; Ackah-Baidoo 2013). In Ghana, even though the relationship between the state and oil companies, and the fishing community is non-violent, there is a lot of mistrust by the latter towards the former. The tension emanates from a feeling that the fishing community is not benefiting from the oil exploration near its locality. These seeming tensions also brings to the fore the temporality of the problematic nature of oil with regards to conflict where present neglect and tensions can perhaps result in 'deferred or delayed violent conflicts'. Compared to the Niger Delta, Dixcove's case study seems to suggest that violent conflict and high poverty can manifest in a locality where oil fields are located onshore, leading to a more direct interference or destruction of local livelihoods such as fishing and farming [although in Angola, offshore oil exploitation has been associated with violent conflicts and poverty (Oliveira 2010)].

Examining the impact of oil on fishing in Dixcove helped to analyse the spatial impacts of oil and how the challenges oil poses to development are produced and manifest unevenly. As Phillips et al. (2015) argued, this multi-scale analysis of the impact of oil on Ghana revealed a political economy of winners and losers across space. Dixcove's case showed that although oil exploration in the area has some negative impact on the local political economy such as environmental pollution, economic interest conflict and fishermen's income decline, there is no large scale curse in the locality as in the case of the Niger Delta since the oil industry interference in local economy is minimal. In Dixcove, oil exploitation has encouraged some diversification of income among women through demand stimulus, leading to empowerment

as they are able to engage in alternative livelihoods, such as selling second-hand clothing, trading in food stuffs, tie-and-dye and soap making to support their families. Dixcove's case indeed, helped us to move the analysis of the impact of oil beyond macro-level to the micro-scale and how the impact of oil is differentiated and manifest unevenly across space.

In conclusion, using ANT, this study has analysed the problematic impact of oil on Ghana's development. The study noted that while the broad national political economy is important in analysing the impact of oil, based on the network and assemblage perspectives of ANT, phenomena that appear enclosed, are in reality produced in networks (Law 1999). Relying on ANT, this study argued that the problems with oil-based development are an outcome and product of relational assemblages, networks and associations. This study showed that, as Sheppard (2011) noted, in analysing the problematic nature of oil for development, there is the need to pay attention to relationality, by examining the broader political economy, the link between economy, society and nature, and multiple understanding of development trajectories and livelihood assemblages. The challenges associated with oil-based development are produced and conditioned by a 'globalised assemblage', which comprises state and its institutions; global initiatives, actors, agencies, structures; TOCs; and CSOs and local politics. This study showed that the factors that mediate and shape the problematic nature of oil for national development and rural livelihoods in Ghana is produced as a result of interactions between national politics, activities of TOCs and China's interests in oil, global economic structure that conditioned the country to export raw materials, oil price volatility and local politics. Thus, while national politics and institutions shape how oil revenues are utilised, the national institutions and actors and structures operated in tandem with localised and transnational ones.

Ghana's case showed that oil is problematic for development in developing countries. Even in a democratic polity, the negative impacts of oil (such as its price volatility and shocks, and technology and its capital intensity with limited linkages to other sectors of the national economy); global interests (such as a resource rich economies having access to oil-guaranteed loans that can lead to debt); and national and local politics (such as competitive clientelism) can arise. The democratic setting, although it cannot insulate a country from the problematic nature of oil for development, it can mitigate the challenges. The Ghana case showed that electoral pressure has force the political elites or the government to be responsive to the citizens and use oil revenue to improve the provision of social services, such as health and education to enhance their electoral victory prospects instead of being involved in large scale rent seeking

and grand corruption. Further, global initiatives such as EITI and PWYP that the government and TOCs have signed onto, and local CSOs such as ISODEC, ACEP and PIAC have also ensured transparency in how oil revenues are spent in Ghana. The global initiatives also forces TOCs to publish the monies it pays to the Ghana government. While the EITI and PWYP do not necessarily alter the broad national political economy, they can shape how the political elites and institutions operate. This showed that there are diverse the actors, agencies and structures that help to ensure transparency in the use oil windfalls in Ghana.

The impacts of oil are more nuanced. Like Su et al's (2016) study, this study revealed that although natural resource exports can pose challenges to a country's socio-economic development because of their price volatility, they can have some positive impacts on development and do not necessarily lead to a curse. Fluctuations in Ghana's economic growth rate have to be placed within factors in the national political economy such as the energy crisis the country experienced between 2011 and 2015 and drop in global commodity prices. Additionally, because Ghana lacks the technology and capital to exploit its oil, it is conditioned to export the raw crude oil and there is minimal prospects of processing it locally to develop linkages with other sectors of the economy.

The impact of oil on Ghana's development revealed that the directionality of oil-related challenges is not predetermined. Whereas the traditional notion of the curse, for instance showed that oil is problematic for development because of a tendency of the local currency to appreciate, which makes imports cheaper (Ploeg and Venables 2009; Sachs and Warner 1997), oil export has not reversed the depreciation of Ghana's currency. This showed that the impact natural resources on national development, including currency movement are embedded in socio-economic and political conditions in the global, national, and local economies.

This study also showed that there are temporalities and spatialities to the problematic nature of oil for development. Spatially, whereas oil has had positive impacts on the provision of social services nationally and generation of some employment for the educated, the fisher-folks experienced decline in income due to restrictions on fishing in the sea near their locality. There seems to be inadequate engagement with locals, especially fisher-folks to appreciate the environmental degradation challenges and limited employment (and the need to provide alternative livelihoods) for communities and persons negatively affected by oil exploitation. The study revealed that community meetings in coastal communities with TOCs tended to be a mere window-dressing, instead of being an avenue for better engagement (Obeng-Odoom 2014e; Bawole 2013). Local communities' voices are stampeded off the radar of engagements (FON 2013). It seemed although community engagement is a requirement for EIA, what has

been happening is, oil companies often go to lecture the fishing communities on their operations, with little opportunities for the fisher-folks to raise concerns on livelihood losses due to activities of the TOCs (Obeng-Odoom 2014e). Whilst the Constitution of Ghana makes public hearings a mandatory part of the process towards securing a permit to start oil drilling in Ghana, the Environmental Impact Assessment (EIA) of Tullow and her partners were criticised for being highly technical and that the people within the affected communities did not have enough information about the oil to participate in processes that would help them deal with any possible impacts that would occur. Most people did not think the institutions in place by the Ghanaian government to safeguard the fisheries sector had adequate human resources and capacity to implement policies that would protect them. Additionally, corruption was said to be a problem in how oil companies undertake such environmental impact assessments. Most of the skills training programmes instituted by the government and TOCs for oil industry related employment do not target the fisher folks even though, in terms of direct impact of oil, it is the fishermen whose livelihoods are more directly affected. Thus, it appears there is a mismatch between the trainings provided and the persons (fishermen) whose livelihoods are directly negatively affected by oil exploration. The majority of the fishermen have never even been to school so the fishing is basically all they can do. Most earn below the minimum wage. The negative implications for their lives and communities, considering their level of education and skills and the competence required to work in the oil and gas industry or to take advantage of the prospects the industry brings to the communities is low. These problems could evolve into future issues if the fishing communities are not protected. During the run up to the 2008 presidential and parliamentary election, many politicians in their political campaign messages made several promises to the locals and urged them to vote for them to come to power and in return they would ensure that they and their communities would benefit greatly from the oil wealth through job creation and infrastructure provision. Of course, nothing has transpired. This showed the problematic impact of oil is differentiated and manifest unevenly across space.

There are also structural and temporal challenges that condition and shape the problematic impact of oil on Ghana. Temporally, Ghana's government increased borrowing backed by oil seems to be creating a 'deferred or delayed curse' where future generation will be burden with debt. Oil development seems to be indirectly increasing the country's debt because of its fetishistical appeal by creating an 'illusion of wealth' (Watts 2003; Kapucinksi 1982). The political elites in Ghana seem to ignore the volatility of its price due to external shocks and its negative impact of windfalls. In Ghana, oil collateralised loans has increased government debt. The challenge for the resource rich economies is that whereas the prices of

commodities like oil are volatile and revenues can decline, government spending on social services cannot easily be stopped since the political elites earn their support based on the provision of such services (Gelb and Grasmann 2010; Gary 2009). The Ghana case revealed that since 2011, government borrowing and debt have increased, similar to other resource rich developing countries since opportunities for the Ghana government to borrow have increased, especially from China. Ghana's increased borrowing (backed by presumed oil income) is creating a 'deferred or delayed debt curse'.

As a result of the colonial legacy, the economy of Ghana is characterised by a lop-sided dependence on the export of raw materials, and the import of manufactured goods. Ghana's economy is integrated into the global economy in ways that are generally unfavourable to the country and ensures structural dependence. What GDP growth that has occurred in Ghana over the last decade or so was overwhelmingly characterised by the deployment and inflow of capital-intensive investment for the extraction and exportation of natural resources such as oil. There was a conspicuous lack of value added on the Ghanaian side. Problematically for Ghana (and Africa generally), the period when the country was said to be rising was almost entirely dependent upon external demand and thus was a classic example of dependency development (Taylor 2016a; 2016b). This dependent development has gone hand in hand with a lack of serious structural change in the country's economy.

The result of the Chinese-led commodity boom of the 2000s was that oil prices surged and oil exploration in Africa increased. However, demand for oil has declined. China is re-orienting its economy. The current regime in Beijing has made it clear that it wishes to restructure the Chinese economy so that it is based more on domestic consumption rather than on investment, as in the past (Taylor 2016b). This means there are going to be much less mega-projects in China (which consumed massive amounts of imported natural resources) and more focus on other aspects of the economy. This 'new normal' , to coin Xi Jinping's phrase consists of the economy moving from the previous high speed growth to a medium growth path, the economic structure being improved and upgraded, and the economy to be increasingly driven by innovation instead of input and investment (i.e. 'developed in China' vs. 'made in China'). Tertiary industry and domestic consumption demand are central to these new policies (Taylor 2016b; Giap et al. (eds.) 2014). A sharp devaluation of the Chinese currency in August 2015, which essentially made imports more expensive for China, also led to gloomier prospects for export-dependent African economies. Although China will still need to import energy such as oil, it is likely that the huge projects and the 'oil diplomacy' that characterized the 2000s will be reduced.

The World Bank has predicted that a slowdown in the BRICS' economies (of which China's is the largest) would have a greater effect on African economic growth than either drought or war (Taylor 2016b). So African countries like Ghana face a tricky future. Significant revisions in price forecasts suggest that low prices are here to stay for some time and it might be said that Africa faces the 'new normal' (normal commodity prices, a 'normal' Chinese economy (Taylor 2016b). The diversification of dependency which occurred in the 2000s as African economies strengthened ties to the emerging economies may well prove to be a further complication for African development. In 2015, Africa's exports to China decreased by 38%, whilst overall Sino-African trade fell by 18%. Equally, Chinese FDI in Africa declined by 40% last year, with the state-owned English-language newspaper *China Daily* terming this plunge in investment from Beijing into Africa as a 'collapse'.

Despite many African countries benefitting from debt write-offs in the mid-2000s, a number of African countries, such as Nigeria and Zambia, including Ghana have now been forced to approach the World Bank and the IMF for loans as their revenues decline and budget deficits climb. Alongside this, currencies and stock markets across the continent have fallen for the big exporting countries. How Ghana will navigate this new situation is going to be central with regards to its debt and economic growth. Extant political, economic and deep-seated structural problems within Ghana will now once again coming to the fore and the key issue for the country (and the continent) is yet again brought into sharp focus: the post-colonial project of diversification and industrialisation of the continent's economies. As Taylor (2016a, p. 8) noted, 'a 'rise' based on an intensification of resource extraction whilst dependency deepens, inequality increases and de-industrialisation continues apace, cannot be taken seriously. A model based on growth-for-growth's sake has replaced development and the agenda of industrialisation and moving Africa up the global production chain has been discarded. Instead, Africa's current 'comparative advantage' as an exporter of diversified primary commodity is celebrated and reinforced. These deep seated extant political and economic structural challenges (both external and internal), in addition to Ghana political environment conditioned the problematic impacts of oil on the country's development. The study also showed that although democracy does not insulate a country from the oil-related development challenges, through the directionality of oil-related development challenges are not predetermined, but they have deep seated extant political and economic structural challenges (both external and internal) with temporal and spatial dimensions.

7.4 Reflections on the implications of the oil price collapse for Ghana

In June 2007, when Ghana discovered oil in commercial quantities, the then president of Ghana, John Kufuor said 'oil discovery will turn Ghana into an African tiger' (Gary 2009; BBC News/Africa June 2007). Re-echoing the successful high economic growth rate and industrialisation experience of the Asian Tigers - Hong Kong, Singapore, South Korea and Taiwan. Such high hope and expectation to use oil as a catalyst to transform the Ghanaian economy seems to be informed by high oil prices at the time when the oil was discovered. It is also informed by Ghana's relative good institutions, and actors that are ensure efficient and transparent use of revenues and to promote economic diversification and reduce dependency. Oil prices have declined in recent years which have negatively affected growth rates. Further, because of colonialism, African economies are integrated into the global economy in ways that are generally unfavourable to the continent and ensure structural dependence (Taylor 2016b, p. 193). In reality, oil has only help Ghana to diversify its dependency on gold, timber and cocoa. There have not been structural changes in the national economy, and oil is instead reinforcing and reconstruction of the country's deep seated structural dependency. Ghana, just like other African countries, their 'rising' has gone hand in hand with no structural change in their economies, but reproduction of de-industrialisation, and entrenchment dependency on primary products (Taylor 2016a, p. 18).

Oil prices collapsed from a high of US$140 dollars in 2007, to about US$ 30 dollars per barrel in March 2016, and US$50 dollars per barrel in May 2016. Other sources noted that from a peak of $112 per barrel for oil in June 2014, it fell to about US$ 60 dollars per barrel in December, 2014 (Essandoh-Yeddu and Yalamova 2015), illustrating the unpredictability of prices of these natural resources. Declining global economic growth has reduced demand for oil culminating in a significant drop in prices. Low oil prices are hurting African countries such as Ghana. With the price of crude at its lowest since 2010, the budgets of Africa oil producers (including Ghana), have been impaired significantly since they do not have sufficient fiscal buffers to cope with the slump in oil prices (Essandoh-Yeddu and Yalamova 2015, p. 37). Ghana's 2015 budget was based on an oil price of $80 per barrel, hence with the collapse of oil prices to about US$30 dollars per barrel, the country faces growing fiscal challenges, and it has either to defer some of key infrastructure projects or to borrow to finance them. It seems Ghana has choose the latter, hence the increase in its debt burden. The speed and magnitude of the oil price decline often trigger financial pressure on countries like Ghana that partly dependent on oil revenues and have to be re-priced (or adjust their budgets), especially those with existing vulnerabilities (Husain et al. 2015). With the price of crude oil at its lowest since

2010, the budgets of Africa's oil producers (Ghana inclusive) have been negatively affected since they do not sufficient fiscal buffers to cope with the slump in oil prices (Essandoh-Yeddu and Yalamova 2015, p. 37).

Besides the instability of oil prices, Ghana's experience with oil since 2007 has shown that as a result of the colonial legacy, where the country's economy is characterised by a dependency on the export of raw materials such as gold, timber, cocoa and recently oil, and the import of manufactured goods, is producing and ensuring structural dependency. GDP growth that has occurred in Ghana over the years was overwhelmingly influenced and shaped by inflow of capital-intensive investment from the extraction and exportation of natural resources such as oil. While there is lack of value addition to these natural resources to help diversify the Ghanaian economy. Addition of oil to the existing natural resources has only problematically diversify Ghana's dependency, but reinforcing a classic dependent development and a lack of structural change in the country's economy.

Chinese-led commodity boom of the 2000s that resulted in oil prices surged, which led to an increased in oil exploration in Africa seems to have subsided. China's demand for oil has declined, and the prices of oil has partly collapsed. China is also re-orienting and re-structuring its economy so that it is based more on domestic consumption rather than on investment, as in the past. Tertiary industry and domestic consumption demand are central to these new policies. The devaluation of the Chinese currency in 2015, made imports expensive for China, also leading to gloomier prospects for export-dependent African economies like Ghana. And although China still import oil, the 'oil diplomacy' that characterized 2000s has minimized.

The World Bank's prediction of a slowdown in the BRICS' economies (of which China is the largest) has effects on Ghana's economic growth. Ghana faces a tricky future due to the collapse in oil prices as global consumption decline, especially the BRICS. Significant revisions in price forecasts suggest that low prices will continue for some time and it might be said that Ghana also faces the 'new normal' (normal commodity prices, a 'normal' Chinese economy where focus is on domestic consumption instead of commodity driven economic growth). The diversification of dependency which occurred in the 2007 as Ghana's economy strengthened its ties to the emerging economies may well prove to be a further complication for the country's development. Additionally, currencies and stock markets across the continent have fallen. These structural changes in the global economy and collapse in oil prices in recent times have implications for Ghana's economic development and its debts as oil has been used to collateralized some of the loans.

Despite Ghana benefitting from debt write-offs in the mid-2000s, the country has been forced in 2014 to approach the World Bank and the IMF for loans as its revenues decline and budget deficits increase. Since oil is one of Ghana's major exports, along with cocoa and gold, the global oil prices decline in recent years has negatively affected its revenue. This has exposed the country to a precarious fiscal situation that has undermined the high ambitions expressed by Ghanaians and the government in 2007. Countries like Ghana that have tended to spend most of their oil revenue rather than save it have the least capacity to adjust to the new reality of declining oil prices. The story of the fall in oil prices in Ghana cannot however, be separated from the fragility of its budgets in the past. In 2012 election year, just after the start of oil production, civil service pay reforms and a fuel subsidy, triggered a sharp budget deficit increase. Since 2014, government debt has increased, as Ghana's public finances has been exposed, compounded by a collapse in oil prices. In reality oil has only help Ghana to diversify its dependency on other commodities. There have not been structural changes in the national economy, it is instead reinforcing and reconstruction of the country's deep seated structural dependency and high debt to GDP ratio that is characteristic of developing countries. The deep seated extant external and internal political and economic structural challenges, in addition to Ghana political environment and the collapse of global oil prices has implications for the country's revenue, debt and development.

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Appendix

Appendix 1: Interview guide for politicians and policy makers in Ghana

I am a PhD Candidate at Trinity College, Dublin and I am conducting my research on the topic **'Are natural resource windfalls a blessing or a curse in democratic settings: a case study, Ghana'**. The study examines how the dimensions of the 'resource curse' potentially occur variously at the national and local scales in Ghana. The study is purely an academic exercise and all information provided will be treated with absolute confidentiality. Responses will be used anonymously and cannot be traced to the persons who provide them. Kindly permit me to thank you in advance for your time and contribution to this research.

1. Can you explain how oil exploration began in Ghana?
2. What do you think lead to the intensive exploration of oil around 2000 and the subsequent oil discovery in commercial quantities in the year 2007?
3. What has been the impact of the oil on the economy of Ghana at the national level?
4. Are you aware of the 'resource curse' and do you think Ghana is experiencing any of the dimensions of the 'curse'?
5. Nationally, what is the impact or consequent of oil discovery and exploitation with respect to the following in Ghana?
    a. employment
    b. agriculture
    c. industry and manufacturing
    d. local currency
    e. governance, corruption and institutions
    f. government borrowing and expenditure
    g. conflict and environment
6. What is problematic about current plans with the development of Ghana's oil?
7. Is there transparency and efficiency in the management of oil resources?
8. What environmental challenges are affecting the environment due to oil exploration?
9. What policies are in place for the development of local capacity in the oil sector?
10. What is entail in the Local Content Policy?
11. What structures do you have in place to ensure that Local Content requirements are adhered to by TNOCs?
12. What role does your institution play in the oil industry?

13. At the local level, what has been the impact of oil exploration of livelihoods such as: incomes; employment; cost of living; marginalisation and exclusion; and class structuring? ……..
14. What are the impacts of oil exploitation on fishing communities with regards to:
    a. poverty and unemployment
    b. infrastructure development
    c. political participation and accountability
    d. environmental degradation
    e. competition for spaces between fishing, oil companies and biodiversity
    f. control and ownership of resources?
15. What alternative livelihoods are being provided for local communities?
16. Why do you think the oil companies are investing in the oil sector in Ghana?
17. What are the impacts of activities of oil companies in Ghana?
18. Do aspects of the activities of oil companies detrimental to Ghana's development?
19. How does Ghana's political economy affect the operations of oil companies?
20. How does social relations in Ghana impact and mediate government's utilisation of oil revenue in Ghana?
21. How does global energy concern impact how the oil industry operates and impacts the economy of Ghana and the immediate local communities?
22. How does climate change concern affects how the oil industry operates and impacts the economy of Ghana and local communities in particular?
23. What other information that you would like to share with me concerning the impact of the oil industry on the economy of Ghana and the local communities in particular?

Appendix 2: Interview guide for oil companies in Ghana

Impact oil at the national scale

1. How does global energy concerns inform activities of oil companies and how does this influence their operations in Ghana? .....
   ……..……
2. How does climate change concerns inform the activities of oil companies and how does this influence their activities in Ghana?.....
   ……..

3. What has been the impact of oil exploration on the socio-economic development of Ghana?.....
4. How would you assess the impact of the oil industry to employment in Ghana?.....
   ……..
5. How would you assess the working conditions of Ghanaians employed in the oil sector?
   ……..
6. Has agriculture production been affected since oil production began in Ghana?
   ……..
7. Is the oil sector affecting investments that could have been directed at the agriculture sector? …….....
8. Has the oil industry in anyway impacted the industrial and manufacturing sector of Ghana?.....……...
9. How would you assess level of transparency in the activities of oil companies and the management of oil revenue by the government?.....
   ……..
10. What do you think or fear for the future of Ghana as oil production began in 2010? Fear of violent conflict [ ] political polarisation [ ] environmental pollution in oil producing areas [ ] poverty [ ] Increasing corruption [ ] others [ ]
11. What practical steps has the oil companies put in place to avoid environmental challenges and violent conflicts associated with the oil industry in other countries?
    ……..

Impacts of oil at local communities

12. What are the impacts of activities of oil companies on local fishing communities?
    ……..
13. How has local income been affected since oil production began? Worsen [ ] Unchanged [ ] Slightly Improved [ ] Greatly Improved [ ]. Explain? …….……
    ……..
14. Are there opportunities for locals to be employed in the oil sector and what kind of employment?.....
15. Are there any factors militating against the abilities of local people to be employed in the oil sector? ……...
16. How has living conditions of locals been affect by oil production since it began? Worsen [ ] Unchanged [ ] Slightly Improved [ ]. How? ……..

17. How would you assess the levels of land lost and environmental conditions in local communities? Worsen [ ] Unchanged [ ] Improved [ ]
18. Has there been exclusion and marginalisation of local communities from decisions concerning the oil sector and how? ……...
19. How has the road infrastructure changed over the last 4 years? Worsen [ ] Unchanged [ ] Slightly Improved [ ] Greatly Improved [ ]
20. How has electricity and water supply infrastructure changed over the last 4 years? Worsen [ ] Unchanged [ ] Slightly Improved [ ] Greatly Improved [ ]
21. How has the health infrastructure changed over the last 5 years? Worsen [ ] Unchanged [ ] Slightly Improved [ ] Greatly Improved [ ]
22. How has educational infrastructure changed over the last 4 years? Worsen [ ] Unchanged [ ] Slightly Improved [ ] Greatly Improved [ ]
23. Do you link changes in the infrastructure in fishing communities to oil/gas activities? Yes [] No [] Not Sure []. How? ……
24. Is integration of fishing communities into the global economy through oil production leading to marginalisation, alienation and loss of livelihoods? … If yes, how? ……..
25. What problems does the oil/gas industry pose to fisher folks? ……..
    ……
26. Has oil activities been disruptive to fishing activities? Yes [ ] No [ ] Not Sure [ ] How? …….....
27. Are there programs to provide alternative livelihoods for fishing communities and how? ……..
28. Have there been restrictions on fishing activities and how does this affect fishing operations and local livelihoods? ……
29. What are some of the potential sources of conflict in oil producing communities? ……..
30. What specific environmental impacts will the oil sector have on local communities? ……
31. How will you assess the relationship between oil companies and fishing communities? ……..
32. How would you assess the level of participation by stakeholders in decisions on issues that affect local livelihoods? Excellent [] Good [] Fairly Good [] Poor []

33. What other information would you like to share on the impact of oil and gas industry on Ghana? ……

Appendix 3: Interview guide for CSOs in Ghana

1. What do you think has been the impact of oil on the economy in Ghana?
   ……..
2. Nationally, how would assess the oil exploitation on the following socio-economic dimensions: employment; agriculture; industry; environment and conflict; government borrowing and expenditure; and governance, corruption and institutions?.....
   ……..
3. What role do the media and CSOs play in the oil and gas industry?
   ……..
4. How transparent are the activities of oil companies and the Government of Ghana?
   ……..
5. Are the institutions and regulatory framework efficient to ensure that the government and people of Ghana get the maximum benefits from the oil resources? ……..
   ……..
6. How will you assess the level of transparency and efficiency in the management of oil resources? ……
7. How would you assess the flow of information between and among government and private oil companies on one hand, and the media and the people on the other hand?
   ……
8. Are there any challenges in acquiring information about oil and gas industry activities in Ghana? ……
9. What are the implications of oil sector activities for conflict between and among local communities, government and oil companies? …….
10. What are the implications of oil exploitation for environmental pollution in Ghana?
    ……..
11. What has been the impact of oil sectors on fishing communities? ……
    ……..
12. At the local levels, what has been the impact of oil exploration on livelihoods with respect to; incomes; employment; cost of living; marginalisation and exclusion; family power structure? ……...

13. What are the impacts of oil exploitation on fishing communities with regards to:
    a. poverty and unemployment
    b. infrastructure development
    c. political participation and accountability
    d. environmental degradation
    e. loss of land
    f. loss of livelihoods
    g. competition for sea spaces between fishing, oil companies and biodiversity
14. Does government provide alternatives livelihoods strategies for fishing communities? ……..
15. Are communities consulted on their needs before the provision of these alternative livelihoods? ……..
16. What do you think can be done to make oil resources more beneficial to Ghana in general and immediate communities in particular? ……..
17. What other information that you would like to share with me concerning the impact of oil industry on the local communities? …….

Appendix 4: Survey guide for fishermen/mongers, Dixcove, Ghana

Changing socio-economic living conditions

1. Has your livelihood been affected by oil production since it started in 2010 and if so how? ……
   ……..
2. Has your income gone up, stayed the same or declined over the past four years? Gone Up [ ] Stayed Same [ ] Declined [ ]
3. If your income has gone up, what is the level of increase? Less 25% [] About 50% [] About 75% [] 100 % and Over []
4. If your income has declined, what has been the level of decline? Less 25% [ ] About 50% [ ] About 75% [ ] 100 % and Over [ ]
5. Have employment opportunities been affected by oil production since it started and if so how? .....
6. Has women livelihood been affected by oil production since it started and if so how? ……..
   ……..

7. Has the environmental conditions in your communities improved or worsened since 2010? Improved [ ] Unchanged [ ] Worsened [ ]
8. What environmental changes have taken place and how do they affect your fishing operations? .....
   ……..
9. Has the health conditions in your communities improved or worsened since 2010? Improved [ ] Unchanged [ ] worsened [ ]. How? ……
   ……..
10. What impact does the oil/gas industry bring to your living conditions as fisher folks and how? …….....
    ……
11. Has the oil activities been disruptive to fishing activities? Yes [ ] No [ ] Not Sure [ ] How? ……...
    ……
12. If livelihoods have been disrupted, has an alternative livelihood provided? Yes [] No [] Not Sure [ ]. What is the level of consultation in such process? ……
    …….....
13. Have there been restrictions on fishing activities and how does this affect your fishing operations and local livelihoods? …….....
    ……..
14. Have you or your relatives pursue or intend to pursue employment in the oil and gas industry in Ghana? Yes [ ] No [ ] Not Sure [ ]. Why? …….
    ……..
15. Are there training programs for people in the community who wish to be employed in the oil/gas sector? Yes[] No[] Not Sure[]
16. If there are training programs, are such programs specifically targeted at people whose livelihoods are affected by oil production? ……..
    ……..
17. Are problems such as exclusion, marginalisation and alienation experience by fisher folks and how? ……
18. Has government policies and resource devoted to the fishing sector adequate, given its importance to local livelihoods? ……..
    ……

19. Has crime/social vices increased in your local area over the last 4 years? Worsen [ ] Unchanged [ ] Not Sure. How can this be related to the oil industry? ..... ……..
20. How will you assess traffic congestion and pressure on amenities in oil the city and its environs? Worsened [ ] Remained Unchanged [ ] Slightly Improved. How is such changes related to the oil industry? …….

Infrastructure development

21. How has road infrastructure in oil communities changed over the last 4 years? Worsened [ ] Unchanged [ ] Slightly Improved [ ] Greatly Improved [ ]
22. How has electricity and water supply infrastructure changed over the last 4 years? Worsen [ ] Unchanged [ ] Slightly Improved [ ] Greatly Improved [ ]
23. How has health facilities changed over the last 4 years? Worsen [ ] Unchanged [ ] Slightly Improved [ ] Greatly Improved [ ]
24. How has the educational infrastructure changed over the last 4 years? Worsen [ ] Unchanged [ ] Slightly Improved [ ] Greatly Improved [ ]
25. Do you link recent infrastructure changes in your communities to oil/gas activities? Yes [] No [ ]. How? ……..

Political issues

26. How do you assess the relationship between your community and the oil companies? ……..... .....
27. How would you assess your level participation in decisions taken by government and oil companies on issues that affect your local livelihoods? Excellent [] Good [] Fairly Good [] Poor [ ]
28. Are current laws and policies adequate to ensure proper utilisation of oil/gas resources? ……
29. Do you fear oil production will increase: violent conflict [ ] political polarisation [ ] environmental pollution in oil producing areas [ ] poverty [ ] corruption [ ] others [ ]
30. Incomes and revenues from oil and gas are been spent wisely by the government? Strongly Disagree [ ] Disagree [ ] Not Sure [ ] Agree [ ] Strongly [ ]. What areas can oil revenue be channelled profitably for the benefit of the people? …… ……..

31. Ghana will become a second Niger Delta? Strongly Disagree [ ] Disagree [ ] Not Sure [ ] Agree [ ] Strongly [ ]. Why? .....
    ……..
32. Oil money could be a threat to Ghana's democracy? Strongly Disagree [ ] Disagree [ ] Not Sure [ ] Agree [ ] Strongly [ ]
33. What are some of the potential sources of conflict in oil producing communities?
    ……..
34. What other information would you like to share on the impact of oil/gas industry in Ghana? …….

Appendix 5: Informed consent form

Title of research study: Are natural resource windfalls a blessing or a curse in democratic settings: a case study – Ghana?

This study and this consent form have been explained to me. I believe I understand what will happen if I agree to be part of this study.

I have read, or had read to me, this consent form. I have had the opportunity to ask questions and all my questions have been answered to my satisfaction. I freely and voluntarily agree to be part of this research study, though without prejudice to my legal and ethical rights. I have received a copy of this agreement and I understand that, if there is a sponsoring company, a signed copy will be sent to that sponsor.

Name of sponsor: Trinity College, Dublin

Participant's name:

Participant's signature: **Date:**

Date on which the participant was first furnished with this form: June 1, 2014.

Participants with literacy difficulties: I have witnessed the accurate reading of the consent form to the potential participant, and the individual has had the opportunity to ask questions. I confirm that the individual has given consent freely and understands that they have the right to refuse or withdraw from the study at any time.

Print name of witness: _____

Signature of witness: _____

Date (Day/month/year) _____

Thumbprint of participant:

Statement of investigator's responsibility: I have explained the nature, purpose, procedures, benefits, risks of, or alternatives to, this research study. I have offered to answer any questions and fully answered such questions. I believe that the participant understands my explanation and has freely given informed consent.

Researcher's signature: Pius Siakwah **Date:** 20th October 2015