© University of Cape Coast https://erl.ucc.edu.gh/jspui

UNIVERSITY OF CAPE COAST

RESIDENTS PERCEPTION OF SOCIO-ECONOMIC IMPACT OF OIL AND GAS OPERATIONS IN THE ELLEMBELLE DISTRICT OF WESTERN REGION OF GHANA

CRYSTABEL TWUM-BAAH

2020

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

UNIVERSITY OF CAPE COAST

RESIDENTS PERCEPTION OF SOCIO-ECONOMIC IMPACT OF OIL AND GAS OPERATIONS IN THE ELLEMBELLE DISTRICT OF WESTERN REGION OF GHANA

BY

CRYSTABEL TWUM-BAAH

Thesis submitted to the Institute for Oil and Gas Studies of the Faculty of Social Science, College of Humanities and Legal Studies, University of Cape Coast in partial fulfilment of the requirements for the award of Master of Philosophy degree in Oil and Gas Resource Management

MARCH 2020

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

DECLARATION

Candidate's Declaration

I hereby declare that this thesis is the result of my own original work and that no part of it has been presented for another degree in this university or elsewhere.

Candidate's Signature……..... Date……

Name: Crystabel Twum-Baah

Supervisor's Declaration

I hereby declare that the preparation and presentation of the thesis were supervised in accordance with the guidelines on supervision laid down by the University of Cape Coast.

Supervisor's Signature……  …..... Date…….

Name: Dr. Mohammed Augustine Takase

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

ABSTRACT

Petroleum production has been found to provide immense benefits in areas of job creation and revenue generation to host countries across the globe. Arguably, petroleum production in Ghana has not translated into the expected economic and socio-cultural wealth of host communities. This study, therefore, examined economic and socio-cultural impact of the oil and gas operations in the Ellembelle District, Western Region of Ghana. The study employed the mixed research approach and descriptive design. It was found that oil and gas operations have resulted in shortages of housing units, increased market connectivity, loss of livelihoods, resource related disputes and threat to the quality of ecological life. It was also found that majority (64.2%) of residents in host communities were highly dissatisfied with oil and gas operations because these companies were unwilling to improve their operations to suit the needs of residents. It was therefore recommended that policy makers in the oil and gas sector implement policies aimed at improving the operations of the oil and gas companies.

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

ACKNOWLEDGEMENTS

I am grateful to my supervisor, Dr. Mohammed Augustine Takase for his support and guidance. It's his immense scrutiny and criticism that has pushed me to refine this work to its current state.

My sincere gratitude goes to the management and staff of the Institute for Oil and Gas Studies for their immense support for the completion of my programme. I will like to also thank all my colleagues especially, Ken Etse, Alex Ohemeng, Richard Kofi Opoku, Iddris and Frederick Asante, whose mentorships have been of immense help to me. My immense gratitude goes to both residents and other key stakeholders in the Ellembelle District for their assistance in obtaining the needed information for the study. My final gratitude goes to all my grandmother, Juliana Afra, my family and friends for their support and care throughout my programme.

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

DEDICATION

To my loving family especially Juliana Afra, Eugenia Ankomah and Louisa Twum-Baah.

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

TABLE OF CONTENTS

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

LIST OF TABLES

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

LIST OF FIGURES

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

LIST OF ACRONYMS

BBC	British Broadcasting Corporation
CBNRM	Community Base Natural Resource Management
FAO	Food and Agriculture Organisation
FPSO	Floating production storage and offloading
GNPC	Ghana National Petroleum Corporation
GSS	Ghana Statistical Service
IMF	International Monetary Fund
ISODEC	Integrated Social Development Centre
OCTP	Offshore Cape Three Points
TEN	Tweneboah-Enyera-Ntomme
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Programme
USAID	United States Agency for International Development
WB	World Bank

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

CHAPTER ONE

INTRODUCTION

The socio-economic benefits accrued from the oil and gas industry for many nations make it continuously important to the global economy. This impact is within the spectrum of job creation, revenue generation, and infrastructural development. In a global context of mineral resource scarcity and increasing world oil prices, oil and gas resources offer an enormous development potential to both developed and developing economies including Ghana. So far, the impact of oil and gas production on the Ghanaian economy has been inconsistent, with numerous instances of low standard of living, inadequate social amenities and high cost of living among citizens. As a result, the study was underpinned by the stakeholder and dependency theories. These theories offer explanations as to why advanced economies benefit from resources such as oil and gas owned by developing economies like Ghana thus living stakeholders especially residents in the latter relatively poor. This study seeks to address this menace by examining the economic and socio-cultural impact of the oil and gas operations in the Ellembelle District of the Western Region of Ghana.

Background to the Study

Petroleum is one of the most indispensable commodities that often dominate the essential needs of the world, in which its discovery can make nations extremely wealthy whilst its scarcities can bring economies to their knees (Iheriohanma, 2016; Kadafa, 2012). Over the years, petroleum has been considered as the main viable source of energy than any other non-renewable

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

and sustainable energy sources. Specifically, it accounts for about 40% of the world's energy mix due to its unique blend of attributes including accessibility, flexibility, sufficiency and lower cost (Kadafa, 2012; Rahman, 2004). The British Petroleum (BP) Statistical Review of World Energy (2018) report revealed that the world's consumption of oil as of 2017 reached an average of 98.19 million barrels of which the United States is the largest consumer. This is a clear indication of the significance of oil and gas exploration to modern economies (Amoasah, 2010).

Industrialised nations such as United States of America (USA), China, Germany, Japan and Russia depend on the robustness of the oil and gas industry to run their economies (Aratuo, 2012). Similarly, less industrialised nations such as Nigeria, Niger, Uganda, Venezuela and Mexico mainly depend on revenues accrued from oil and gas exploitations and exportations to develop their economies by providing infrastructures, social amenities and even supplementing their national budget deficits (Iheriohanma, 2016). In all, oil and natural gas serve as fuel that runs the 'engines' of the world. More specifically, some African countries such as Algeria, Angola, Chad, Congo, Equatorial Guinea, Gabon, Libya, and Nigeria have all been classified as rapidly growing economies in terms of demand for their natural resources and hence serve as backbone of the world's oil and gas demand (Leke, Lund, Roxburgh & van Wamelen, 2010).

Historically, the exploration of petroleum in Ghana begun in 1896 in which the first discovery was made by Signal and Amaco group in 1970 in the Central Region specifically, Saltpond. The first production was by Agripetco in 1978 which produced 4,800 barrels per day (GNPC, 2011). However, in

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

subsequent years, the production of crude oil and gas reduced which led to the closing down of the field. The government of Ghana, with the aim of gaining absolute control of the oil reserves, fully funded another oil exploration under the initiation of Ghana National Petroleum Corporation in the 1980s but, due to its extremely expensive nature, it was unproductive. The government of Ghana in 2003 decided to allow international oil companies in association with the state corporation to undertake exploration activities again, which eventually led to the recently discovered crude oil and gas in the Western Region of Ghana (Annan & Edu-Afful, 2015; GNPC, 2006).

Tullow Ghana Limited and Kosmos Energy in partnership with GNPC and other oil and gas companies discovered crude oil in commercial quantities in July 2007 in the Western Coast off Cape Three Points within the Western Region. This field was later named as the Jubilee field and estimated to hold about 1.8 billion barrels of light and sweet crude (Aryeetey & Asmah, 2011; Egyir, 2012; GNPC, 2011) with an American Petroleum Institute (API) gravity of 37.6 degrees and a sulphur content of 0.25 % (weight) which is sought after at world's market, thus, the latest and largest finds in West Africa. According to Tullow Oil (2010), the expected average production is 70,000 and 90,000 barrels respectively per day (bpd). The Jubilee field is also estimated to hold about 800 billion cubic feet (bcf) of associated gas (Tullow, 2010).

Commercial production of crude oil began in December 2010, with Tullow Oil being the lead-operator. Additional discoveries have been made in the same region, which includes Sankofa, Twenneboa, Enyenra, and Ntomme (TEN) fields (GNPC 2011; Owusu-Ansah, 2012; Tullow 2010). The discovery of oil and gas in the country was seen to be a blessing in disguise (Darkwah,

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

2005). This is because, previously, the country heavily relied on the importation of crude oil to satisfy its energy needs (Darkwah, 2005). A report by the Bank of Ghana (2009) revealed that the cost of importing crude oil for the first quarter of 2008 and 2009 was US$643.86 million and US$241.84 million respectively.

However, the production of oil and gas within the confines of Ghana has put the nation's economy on the road to economic success and prosperity (Amoasah, 2010). Every petroleum industry comprises three main sectors: upstream, midstream and downstream, though midstream and downstream are often merged together (Ministry of Energy, 2010). The upstream is often associated with exploring and drilling for natural oil and gas whilst the downstream involves the transportation of logistics, refining, and retailing of petrochemical products (Karlsen & Lindeløv, 2005). Even though the operations in these sectors have significant impact on Ghana's economy, major impact is experienced in the upstream sector. Revenues accrued from the production of crude oil in the upstream sector is estimated to reach US$1.55 billion by 2019 and US$247 million in 2029 (Heller & Heuty, 2010; Quayson, 2012).

Given a stable volatile price of crude oil and gas on the international market, Ghana's petroleum industry seeks to derive maximum revenue from the production of hydrocarbons. Clearly, the exploration of crude oil and gas in Ghana, specifically, Western region, has brought about numerous contributions to stakeholders (BBC Africa 2011; Obeng-Odoom, 2015), especially the Ghanaian economy and the residents of the communities in the Western Region. To the Ghanaian economy, the oil industry contributes to job creation, boost in local business, technological transfer, provision of numerous developmental

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

projects, reduction of the country's fiscal deficit and generation of government revenues through taxes and levies which invariably increase Gross Domestic Product (Acquah-Andoh, Gyeyir, Aanye & Ifelebuegu, 2018; Dah, 2010).

To the indigenes, the petroleum industry serves as employment avenues to them, source of income and livelihood, scholarships and aids, provision of basic social amenities such as schools, pipe borne water, roads, among others (Akakpo, 2012; Revenue Management Act, 2011). Despite these contributions, the major questions that continuously arise include: Do the contributions of the petroleum industry meet the expectations of residents? Is the petroleum industry being socially responsible to the stakeholders? and, Are the activities of the industry having any impacts on the economic and social cultural livelihood of the residents? In a bid to obtain answers to these questions, this study is geared towards examining the perceived economic and socio-cultural impact of the industry's activities on residents in the Ellemebelle District of the Western Region of Ghana.

Statement of the Problem

Petroleum as the most significant energy source worldwide plays enormous roles in the development of communities that its operations are carried out. Nevertheless, the presence of petroleum operations has both positive and negative impact on host communities. According to Musiga (2016), oil boom is characterised by various socio-economic impact including economic transformation, employment, infrastructural development, changes in prices and income, culture assimilation, migration of people and occupational dislocation which have effects on the well-being of communities. Oil and gas activities in developing countries such as Nigeria have some negative impacts

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

on the livelihood of communities as it encourages poverty, infringe human rights and increases social conflict. These phenomena can be linked to the rent-seeking behaviour and over-reliance on natural resource.

In sub-Saharan Africa, oil producing countries experience massive impacts from petroleum operations due to the increasing desire for rapid developmental success, thus seeing the oil and gas industry as a tool for successful economic growth without giving attention to social and economic implications that emanates from the activities of the oil and gas industry (Akakpo, 2015; Ebegbulem, Ekpe & Adejumo, 2013; Effiong, 2010). In Ghana petroleum industry is an emerging one and its relative position (impact on both social and economic livelihood of the people) has been given scanty attention. The activities of oil and gas exploration on Ghana's offshore and onshore are continuously having divergent impacts on the host communities in the Western Region (Attah, 2018; Kaku, 2018; Akakpo, 2015; Owusu-Ansah, 2012).

Specifically, these activities are impacting on their economic and socio-cultural wellbeing of the residents. The activities have led to economic and socio-cultural issues particularly on women indulging in 'galamsey', resettlement challenges, and reduction in income resulting from loss of jobs (Gyan & Asante, 2017; Adusah-Karikari, 2015; Obeng-Odoom 2014; Boohene & Preprah, 2011). The long-term impact of these oil and gas facilities has not been explored. And hence this study was embarked on with the aim of examining the perceived impact of oil and gas operations in Ellembelle District of Western Region of Ghana.

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

Purpose of the Study

The purpose of the study is to examine the impact of oil and gas operations in Ellembelle District Western Region of Ghana.

Research Objectives

The specific objectives of the study include:

1. Assess the perceived impact of oil and gas operations on the economic livelihood of residents in the Ellembelle District of the Western Region.
2. Assess the perceived impact of oil and gas operations on the socio-cultural livelihood of residents in the Ellembelle District of the Western Region.
3. Assess perceived residents' satisfaction with the oil and gas operations in the Ellembelle District of Ghana.

Research Questions

The following are the research question for the study:

1. What are the perceived impacts of oil and gas operations on the economic livelihood of residents in the Ellembelle District of the Western Region?
2. What are the perceived impacts of oil and gas operations on the socio-cultural livelihood of residents in the Ellembelle District of the Western Region?
3. What is the perceived residents' satisfaction with oil and gas operations in the Ellembelle District of the Western Region?

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

Significance of the Study

The findings of the study would particularly necessitate useful decision-making process to all stakeholders especially, policy makers, oil and gas exploration companies, host communities, non-governmental groups and the general public in Ghana particularly the Western Region. This would enlighten and sensitise stakeholders on various social and economic issues (such as jobs displacement, resettlement challenges, culture mix, migration, etc.) resulting from the industry's operations. Additionally, the findings of the study would provide and enhance a practical approach in analysing issues that result from petroleum operations and ensure the various ways by which local communities and petroleum companies can co-exist peacefully. Finally, this research would complement future scientific research in the area of natural resource exploitation specifically on the impacts of oil and gas activities in Africa as a whole by influencing the attitudes and behaviour of stakeholders through knowledge and information dissemination.

Delimitations

The study was delimited to local communities namely Sanzule, Asemduazo and Atuabo in the Ellembelle District of Ghana. All other communities apart from the study area was excluded from the study. The study also delimited itself to descriptive research design although there were other research designs that could have been used to achieve the same expected results. Lastly, the study also delimited itself to only residents who have been in the community for at least ten years and were above eighteen years.

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

Limitations

The findings, conclusions and recommendations of the study is limited mainly to local communities namely Sanzule, Asemduazo and Atuabo in the Ellembelle District of Ghana. Also, relying on randomly sampled members in the target population could raise questions in relation to probable bias which may not be true reflection of real events. This was so, because the randomly sampled members were those who could respond to the items on questions very well. The study was also limited to the views and opinions of the respondents. As such, possibility of obtaining false information from any respondent could lead to misleading results.

Also, the issue of language barrier was encountered by the researcher during the data collection. In order to address this, a translator from the selected communities was trained and engaged to assist in the administration of the questionnaires in local dialects. The respondents responded to only the question items in the questionnaire with no room for further suggestions or opinions. Finally, the study's findings could be affected by the non-responses, incompletely filled questionnaires and inaccessibility of some respondents. To address this, the researcher encouraged the respondents to make time and fill all the items on the instrument. This was because, generalisation was more purposeful if data was obtained from all the respondents within the target population.

Organisation of the Study

The study was structured in five chapters with Chapter one focusing on the study's introduction in relation to the background to the study, statement of the problem, the purpose of the study, research objectives, research questions,

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

significance of the study, limitations, delimitations as well as organisation of the study. Chapter two comprised of the literature review which gave theoretical and conceptual backgrounds into issues related to the study. Chapter three elaborated on the research methods adopted for the study. In detail, the chapter dealt with the research design, sampling techniques and size, data instrument and collection tools, data analysis and ethical issues. Chapter four presented analysis of results and discussion of the study's findings. Chapter five finally presented the summary, conclusions and recommendations of the study and concludes with suggestions for future research.

Chapter Summary

This chapter presented the introduction to the study. It specifically focused on the background to the study, statement of the problem, research objectives and questions, delimitation and limitation as well as organisation of the study. This chapter made a case for assessing residents' perception of the socio-economic impacts of oil and gas operations in Ghana specifically Ellembelle District.

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

CHAPTER TWO

LITERATURE REVIEW

Introduction

With increasing demand for fossil fuel around the globe especially for fast developing economies, the exploitation of newer reserves has become a predominant activity in resource rich countries such as Ghana. This has heightened oil and gas operations in the various host communities where the resource can be located. Thus, the industry's operations in the host communities have had diverse impact on the social and economic wellbeing of the residents. This chapter dwelt on a critical review of issues related to oil and gas activities as it outlined both theoretical and empirical issues that correlate with the impact that oil and gas operations have on social and economic wellbeing of the people.

Theoretical Review

The study adopted dependency and stakeholder theory due to their relatedness to the study's objectives.

Stakeholder Theory

The stakeholder theory was propounded by Edward Freeman in 1984. The theory assumes that organisational successes depend on how well stakeholders are managed (Friedman, 2017). The responsibility of every organisation is to take into consideration the concerns of stakeholders and act accordingly. This is because, organisations have been tasked to maximise its stakeholders' value. According to Friedman (2017), organisations generate profits for their shareholders and promote positive growth. Stakeholders are individuals or groups with single or multiple interests that can affect or be

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

affected by an organisation's objectives, policies and actions (Harriso, Freema & Abreu, 2015; Reed, 2008).

Stakeholders generally include government bodies, employees, stockholders, environmentalists, local communities, future generations, media, interest groups, suppliers and the society who help promote or collapse an organisation (Freeman, 2010; Harriso, Freema & Abreu, 2015). However, stakeholder groups can be sub-divided into many categories according to their level of significance (Bryson, 2004; Harrison, Abreu & Freeman, 2015; Harrison & Bosse, 2013). Stakeholder theory is based on the assumption that business success can only be realised when the value and interest of a vast number of stakeholders are generated (Parmar, Freeman, Harrison, Wicks, Purnell & de Colle, 2010; Tantalo & Priem, 2014; Fontaine, Haarman & Schmid, 2006). As such, any business organisation that holds stakeholder theory in high esteem tends to paint a positive image in the minds of people and members of the community as a whole.

According to Freeman, Harrison and Wicks (2007), stakeholders help organisations realise their goals and objectives since they provide more practical and effective ways of handling complex environments. In contrast, the interest of some groups especially the society as a whole cannot be properly defined and understood since they are heterogeneous in nature and hence massive (Harrison, Abreu & Freeman, 2015). Miles (2012) argues that stakeholder theory is similar to the principle of customers' satisfaction in the sense that the theory should not only focus on its shareholders alone but also focus on the interest of host communities as part of its large group of stakeholders.

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

Host communities are considered stakeholders-customers in the oil and gas industry. A stakeholder-customer is defined as anyone who is affected by the operations management practices or production processes of a firm without necessarily having direct need for the product. In this regard, the host communities as stakeholder-customers are comparable to end-user customers because of their influence on the overall organisational performance of the firm (Agi, 2016). Donaldson and Preston (1995), suggest that firms that implement stakeholder management principles in their activities are bound to be successful in the areas of growth, stability and profitability.

At the societal level, stakeholder theory promotes social and economic status of indigenous community. This study sought to examine the economic and socio-cultural impacts as well as resident's satisfaction of the oil and gas operations in the Ellembelle District of the Western Region of Ghana. Therefore, the respondents for the study formed part of the stakeholders in the community whose decisions and actions could influence the growth and development of the oil and gas companies. One main criticism of this theory according to Freeman's (2010) definition is that the interest of a particular group of stakeholders must be selected and given attention because of time and resource constraint (Fontaine et. al, 2006).

There are many stakeholders in the oil and gas industry, but amongst them, host communities tend to be impacted a lot as they are most affected by the operational activities by oil and gas firms both economically, socially, culturally and environmentally. Since the discovery and production of petroleum in Ghana, host communities are the ones suffering from the operations of oil and gas activities (Peprah, 2011).

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

Dependency Theory

The dependency theory was developed in the late 1950s by Raul Prebisch to explain why economic activities in developed countries did not reflect in developing countries. Dependency theory most importantly posits that resources move from deprived communities to wealthy communities for enrichment at the expense of the former (Baran, 1957). The theory asserts that the deprived communities are the providers of natural resources and cheap labour for the developed ones, without which the latter cannot have a good standard of living. The theory came as a result of criticisms to modernisation theory, which states that societies advance through similar phases of development through investment, technology transfers and incorporation into the global market as a means of eradicating poverty.

However, dependency theory argued that developing countries are weaker members in the world market. Additionally, David (1997) stressed that developed nations or communities try to impede the attempts made by developing countries to keep control of their resources for development. This means that poverty of underdeveloped communities or states is not mainly due to the disintegration of these states from the global system; rather, it is as a result of the manner in which they are incorporated into the system. In essence, the development of the communities in which the oil and gas resource are explored depend on the oil and gas companies to help in the provision of needed social amenities to improve their standard of living. This will substitute the natural resources of the community taken or destroyed by the oil and gas companies. It goes to buttress the point that the communities depend on those natural resources for their survival.

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

The theory has however faced criticisms in terms of economic policies by Buer and Wolf (2014) due to its lack of competition [i.e. promoting in-country industries over foreign ones (Williams, 2014), industries relying on government support which may not be a sustainable and diversion of government support from other sectors to industries. Oil communities are mostly perceived to be associated with good developmental outcomes but these are unrealistic in the sense that most communities endowed with natural resources end up with negative developmental outcomes as their resources are used to develop other communities.

Concept of Satisfaction

Satisfaction is defined as the consumer's fulfilment response (Oliver, 2010). Satisfaction can be explained within two frameworks; cognitive and affective tools and measured in relations to transactional and cumulative experience. Idah and Elegba (2015) and Geis and Cote (2000) explains the cognitive aspect of satisfaction to be the process of finding the link between customer's expectations and the perceived performance of the product based on beliefs and expectations of the customer in assessing his or her satisfaction. Cognitive is the satisfaction that is evaluated emotionally and projected as value-percept disparity model in place of disconfirmation model. Cumulative customer satisfaction on the other hand, is considered to be the outcome of total experience with a firm's product whilst, transactional customer satisfaction is the psychological state resulting from the experienced based on a single and specific encounter (Idah & Elegba, 2015; Eyiah-Botwe, 2015; Omorede, 2014).

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

Resource Exploitation, Community Development and Poverty Alleviation

Mayhew (2015) explained natural resources as any property (natural vegetation, climate or minerals) of the physical environment which humans can use to satisfy their needs. He opined that technically, a property only becomes a resource when it is utilised by humans. Natural resources can be differentiated based on diverse frameworks, in which a current approach adopted distinguishes resources into human life supporting benefits, basic ecosystem processes, nonmaterial ecosystem benefits and basic long-term ecosystem benefits (Millennium Ecosystem Assessment, 2005). Rural communities are often joined together by professions centred on harvest or exploitation of natural resource hence their dependence on natural resources.

As stated in the Food and Agriculture Organisation's (FAO) report (2004), over 1.3 billion people rely on natural resources for employment. Natural resources are the alternative source of livelihood for poor people when main sources of income collapse (Lee & Neves, 2009; World Resources Institute, 2005; FAO, 2004). A report by the United State Agency for International Development (USAID) (2006) and World Bank (2002) state that about 70% of the sub-Saharan population rely on primary natural resources such as land, fisheries, wildlife and minerals to sustain their livelihood. Exploitation of natural resources comes with both positive and negative implications, whether in abundance or limited in quantity. Positively, it promotes economic growth, food security, education, health, etc. (Cunningham, 1989; Mariki, Shechambo, & Salehe, 2003; Steiner, & Oviedo, 2004).

According to Aubell and Mensah (2007), the exploitation of natural resources especially non-renewables such as gold, coal and oil resources often

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

come with costs which are endured by people other than the beneficiaries of the exploitation. For decades, more attention has been given to the possible gains rather than the losses which in turn impact economic, social or environmental terms. Sachs and Warner (2001) demonstrated that resource rich countries often encounter more problems than nations with little or no resources. Costs such as reduced economic growth, conflicts, corruption and environmental pollution just to mention a few are experienced by populations within a specific settlement. This is evidenced in DR Congo, Nigeria, Libya and Iraq. Also, Gellert and Lynch (2003) further claimed that key projects (mines, dams, roads, etc.) cause creative destruction that impact natural settings as well as humans and their communities.

Community, on the other hand, can be explained as a group of people with shared identity. In some literature, community is explained on three bases: spatial unit, a social structure and a set of shared norms (Agrawal & Gibson, 1999; Flora & Flora, 1993). Belonging to community creates a "place at attachment," and other intrinsic values such as spiritual and aesthetic values (USAID, 2006). Besides, the community plays a stewardship role by conserving the natural resources by having access and at the same time managing their resource base (Agrawal & Gibson, 1999; Lee & Neves, 2009). Thus, making the community responsible for managing its natural resources as they promote the participation of communities in natural resource decision making and use. Also, community participation in natural resource enhances sustainable use of natural resources for development, hence the name Community Base Natural Resource Management (CBNRM) (Kidenya, 2015; Etzioni, 1996).

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

However, other scholars assert that Community Base Natural Resource Management (CBNRM) was globally accepted as a result of poor conservation consequences in the 1960s, as this gave local communities the right to own and manage their natural resources (Agrawal & Gibson 1999; Milupi, Somers & Ferguson, 2017). The aim of the CBNRM was to ensure that most community members stood a chance of deriving maximum benefits from the sustainable utilization and management of natural resources (Songorwa, 1999). CBNRM has over the years been broadly promoted as a technique for examining natural conservation and socio-economic goals. Many have reported ways by which CBNRM programs can be successful. For example, Agrawal and Gibson (1999) reported that for CBNRM programs to be successful, more focus should be geared towards institutions rather than communities.

Furthermore, Kellert et al. (2000) proposed that the structure of institutions, socio-economic development and scientific considerations are all elements for successful CBNRM programs. These programs harness the various bundle of rights (property rights) available to the people. These rights enable the communities to be more responsible for the management of their resources for development. This shows why community's inclusion in natural resource management must not be overlooked. Thus, the communities participate in processes intended to advance the social, economic and environmental situation of the communities. Community development improves community decisions about the employment of resources (Cavaye & Ross, 2019). The community itself takes action and participates together, which makes the community more vital and strong functioning body.

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

However, the communities in which exploitation takes place often lag behind development because the benefit of exploitation does not have significant positive impact on the wellbeing of indigenes in host communities precisely in rural areas but rather experience the direct impact of the problems (Agrawal & Gibson, 1999; Cavaye & Ross, 2019). Even though communities are periodically subjected to both the pros and cons of resource exploitation due to their dependence on the natural resource for their livelihood, the cons are rather prominent in these communities hence the degradation of these natural resources' subject members of the community especially rural people to be prone to poverty (Cavaye & Ross, 2019). Poverty is a world-wide problem that impact people globally. Poverty is simply the lack of basic necessities such as safety, food and shelter (Ngoma & Mayimbo, 2017; Bradshaw, 2007; USAID, 2006).

The term poverty is complex as it has different meaning to people, hence it's a multifaceted concept to include elements such as social, political and economic aspects. The main approaches in which poverty is identified and measured include absolute and relative poverty (Sameti, Esfahani & Haghighi, 2012). Absolute poverty also termed as abject poverty involves deprivation basic necessities of life such as adequate food, running water, safe housing, access to health, etc. According to a report by the World Bank (2018), individuals who experience absolute poverty tend to focus on day to day survival, thus the income of that individual is deemed to be insufficient to cover those subsistence needs. This type of poverty compares households based on a standard set of incomes. Thus, the growing economy of a country has impact on individuals living below the poverty line (Olowa, 2012; Ikejiaku, 2009). The

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

World Bank (2014) marks someone who lives on less than $1.25 a day to live in abject or absolute poverty.

Relative poverty on the other hand is a situation where individuals can afford the basic necessities of life but fail to meet or keep up with society's average standard of living (Ikejiaku, 2009). This aspect of poverty focuses on income inequality from an individual's social perspective or by the living standard of the individual as against the economic standards of population. Hence, serves as a form of social exclusion when the income of the individual is smaller than standard income in the society. This aspect of poverty is used as a measurement scale to determine poverty rates in developed nations (Notten & Neuborg, 2011).

Sen (1994) posits that the term poverty is relative in the sense that the needs of a person may vary from the needs of another person. Distinctively, poverty is the statistical measure established by government as the annual income needed for a family to survive (Bradshaw, 2007). Darby (1996) further demonstrated that the clear meaning of poverty was political which was used as yardstick for measuring poverty program development for war. Other scholars on the other hand showed that cost of living, income, family, among others are gaps identified with the definition (Blank, 2008; Bradshaw, 2007; Legido-Quigley, 2003). In Africa, about 70% of poor people live in rural regions, with most engaged in resource-dependent activities such as small-scale farming and mining; livestock production, fishing and hunting and their main source of income comes from the harvest of these primary produce.

Out of the 1.1 billion poor about 90% are living less than a dollar a day (Coudouel & Hentschel, 2000; Food and Agriculture Organisation, 2004;

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

United State Agency for International Development, 2006). According to Morrill (1971), some areas are poor and find it difficult to develop due to factors such as nearness to natural resources, disinvestment, among others. Harrison and Bosse (2013) also suggested that rural areas are the last to acquire technology, get low wages and experience competitive pricing. Another theoretical literature pointed out that the closeness of firms within the same cycle attracts markets and other support services hence attracting more firms but the closeness of poverty and the circumstances creating them results in extreme poverty (Bradshaw, King & Wahlstrom, 1999).

In a nutshell, all these contribute to poverty of the resource-rich rural communities in developed nations but one theory of poverty stresses that third-world poverty is used as a spatial representation to identify people, cultures and institution who fall short of resources that are significant to improve their well-being (Bradshaw, 2007). Host communities where oil and gas production exist especially in transitional economies reflect high level of poverty due to resource exploitation and the common use of resource with oil and gas companies.

Overview of Ghana's Oil and Gas Industry

The exploration of petroleum begun when oil and gas were discovered in seepages' in the Tano basin by early explorers. In 1896, Ghana started petroleum exploration in its sedimentary basin onshore Tano basin. During the period between 1896 and 1957, twenty-one (21) exploration wildcats were drilled in shallow horizons. Exploration activities heightened during this period when the initial well drilled was a success which consequently led to an increased interest in Ghana's offshore basins namely, Tano-Cape three points and Saltpond basins. Another basin known as the Voltian Basin was

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

successfully drilled by Shell in 1974 after 206-line kilometre 2D seismic data at the southern part of the Voltaian basin was acquired (Boateng, 2010; Darkwah, 2010).

However, the production of petroleum in the Saltpond basin reached its maximum 4,500bopd in 1978 which was shut down in the subsequent years due to low production. Similarly, in the same year, the first deep-water well (the South Dixcove -1X) was drilled by Philips Petroleum in Offshore Cape Three Points (Boateng, 2010; GNPC, 2011). In the interest of speeding up Ghana's exploration and production effort, statutory and legal framework for petroleum exploration was created in the 1980s which saw the enactment of Ghana National Petroleum Corporation Law, 1983 P.N.D.C. Law 64 and Petroleum (Exploration and Production) Law, 1984, PNDC Law 84. Ghana National Petroleum Corporation was established under P.N.D.C. Law 64 as a statutory corporation to oversee activities associated with exploration and production of hydrocarbons in the Country, hence operations of the state corporation commenced in 1985.

Ghana National Petroleum Corporation (GNPC) initiated exploration activities funded by the government of Ghana in the same year with the sole aim of gaining absolute control of reserves after discovery but this proved futile due to the expensive nature of such project. Although initial exploration activities were unsuccessful, significant milestones were achieved in the early 2000s when exploration efforts led to an extensive 2D seismic acquisition offshore Saltpond Field. This also, led to oil discovery of WCTP-2X well in deep water by Hunt Oil and heavy oil discovery with the WT-1X well by Dana Petroleum Plc (Boateng, 2010). To make Ghana's oil industry attractive to the international

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

industry and the world, GNPC packaged and promoted the petroleum industry by restructuring and enhancing its exploration database which eventually succeeded in attracting trustworthy oil and gas companies into Ghana.

The government of Ghana in 2003 decided to allow international oil companies such as Tullow, Kosmos and Gasop in association with the state corporation (GNPC) to undertake exploration activities again, which eventually led to the recently discovered crude oil and natural gas in commercial quantities in July 2007 in the Western Coast of Cape Three Point (Jubilee Field) in the Western Region of Ghana (Annan & Edu-Afful, 2015; GNPC 2006; Ministry of Energy, 2010). The Jubilee field is an offshore production field estimated to hold about 1.8 billion barrels of light and sweet crude (Aryeetey & Asmah, 2011; Egyir, 2012; GNPC, 2011; Ministry of Energy, 2010) with an API gravity of 37.6 degrees and a sulphur content of 0.25 % (weight) and 800 billion cubic feet (bcf) of associated gas with expected average production to hit between 70000 and 90000 barrels per day (bpd) (ISODEC, 2009; Tullow, 2010).

The production of hydrocarbons in the unitised Jubilee Field commenced in December 2010 by field partners (Tullow, Kosmos, Anadarko, E. O group, Sabre Oil and Gas Limited and GNPC) with Tullow Oil Ghana Limited as the lead operator. The discovery and production of hydrocarbons in the Jubilee field paved way for further investment and exploration activities which gave Ghana the authority by International Finance Corporation (IFC) to enter into an investment agreement to support the development of Jubilee Field. Additionally, the development of Ghana's Jubilee Field was expected to meet the energy needs of the country, diversify the country's economy and also help

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

companies to improve the potential gains of the project for local communities (Boahene & Peprah 2011).

Table 1 presented estimated revenues from Jubilee field by International Monetary Fund (IMF) and the World Bank (WB)

Table 1: Estimated Revenue from the Jubilee Field by IMF and WB

Production year	IMF Estimates (US$ millions)	Word Bank Estimates (US$ millions)
2011	752	900
2012	723	1,011
2013	1,324	1,083
2014	1,326	1,484
2015	1,352	1,796
2016	1,428	1,804
2017	1,457	1,587
2018	1,485	1,400
2019	1,553	1,213
2020	1,491	1,053
2021	1,491	946
2022	1,491	839
2023	1,176	759
2024	925	706
2025	723	652
2026	562	599
2027	433	546
2028	330	519
2029	247	492
Total	**20,269**	**19,390**

Source: IMF (2008) and World Bank (2009)

From the Table 1, Ghana's first exports of hydrocarbons from the Jubilee Field started in January 2011 and it was forecasted by the International Monetary Fund (IMF) and the World Bank (WB) that the revenue that the

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

Government of Ghana could derive from hydrocarbon production of the Jubilee Field could reach US$ 20 billion between the period of 2012 and 2030 (BBC news Africa, 2011). The estimated revenues by the IMF and the World Bank demonstrate that Ghana will benefit from the production of oil and gas within a period of thirty years if there is effective management of the revenues. The forecasted revenues are supposed to boost the economy of Ghana likewise complimenting revenues generated from other sectors of the economy. This is to improve the standard of living and wellbeing of Ghanaians in general.

Table 2: Jubilee Field Partners and their Stake in the Offshore Oil Production

West Cape Three Points	Holding (%)	Deep Water Tano	Holding (%)
Kosmos (Lead Operator)	30.875	Tullow (Lead Operator)	49.95
Anadarko	30.875	Kosmos	18
Tullow	22.896	Anadarko	18
GNPC (Carried interest)	10	GNPC (Carried Interest)	10
E. O. Group	3.5	Sabre	4.05
Sabre Oil and Gas Ltd.	1.854		

Source: ISODEC and OXFAM America (2009)

With improved technology and adequate logistics, both 2D and 3D seismic surveys have increased leading to over 190 wells being drilled in Ghana's sedimentary basin. This has led to the discovery of hydrocarbons on new fields namely; Sankofa, Gye-Nyame and Tweneboah-Enyera-Ntomme(TEN) Field which started production in 2016 and is expected to produce 80000 barrels of oil per day. The recent development in the oil and gas industry has renewed the face of the oil and gas industry in Ghana in every aspect including its scale of operations, investments, discoveries, policies and legislation (GNPC, 2011).

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

Various Sectors of Ghana's Oil and Gas Industry

Ghana's oil and gas industry constitute three phases; namely, the upstream. Midstream and downstream.

Upstream Sector

The upstream Sector, which is usually referred to as the exploration & production (E&P) section, encompasses all activities that are related to searching for, recovering, and producing crude oil and natural gas from underground or underwater fields. This sector entails the drilling of exploratory wells, and subsequent drilling and operating the wells that recover and bring the crude oil or raw gas to the surface. In Ghana, the upstream sector is regulated by the Ghana National Petroleum Corporation (GNPC).

Phases of the Upstream Operations

The upstream operations are interlinked with five phases, namely exploration, appraisal, development, production and abandonment. The exploration stage comprises extensive geological and geophysical studies that require the gathering, processing and interpretation of data. The data involved may have to be rigorously evaluated to provide a comprehensive understanding of the geological structures, and this is aimed at minimising the risks that are attached before drilling of the prospect. A well, called exploration well, is required to be drilled to establish the presence or otherwise of petroleum in any prospect. The second phase of the upstream operations is appraisal. At this phase, more seismic data are gathered and depending on the data gathered, the quantities and producibility of oil and gas in the field may be estimated (GNPC, 2016).

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

The Development phase of the upstream operations begins once commercially profitable accumulations of oil and gas are found during appraisal drilling. This involves planning and deciding on how to develop discovery, taking into consideration value creation. Selecting the most cost-effective type of development is critical at this phase since it involves a considerable amount of investment. The Development Plan phase provides strict engineering design and construction; environmental impact assessment (EIA) which ensures that the development and production will be done in such a way so as to have a minimum adverse impact on the environment. Hence, this phase is a long-term activity which can span for a period of 15 to 25 years and has a more permanent potential impact on the environment.

The final phase, Production, involves the production of oil and gas and water. It also involves the production of well planning whilst maintaining the rate of production. This phase also ensures that the life of the well accumulation is maximised by injecting gas or water into injection wells to maintain pressure. In addition, reservoir management is considered. The upstream sector is risky, complex, and heavily regulated. Outside factors that affect what happens in this sector include political instabilities in a country, international conflicts and even seasonal weather patterns.

Midstream Sector

Operations at the midstream sector are designed to transport hydrocarbons from upstream production operations to downstream refining and processing operations. Oil and gas resources are transported using many modes such as tanker trucks, pipelines and trains. Transportation of oil and gas is done taking into consideration factors such as safety, distance and the state of the

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

fluid. For instance, pipelines are mostly considered as the first option when transporting oil and gas, however, there may be difficulties that may hinder building a network of pipelines that are able to successfully transport hydrocarbons that are produced from upstream to downstream operations.

According to Chima (2007), building and laying network of pipelines demand specialised heavy equipment since they serve as a means of transporting fluids both onshore and offshore over a few miles or some thousands of miles. Hence, pipes must be laid properly and this involves negotiating successfully with relevant bodies. Other oil and gas transportation modes include trucks, trains, and tankers. Trucking is the most versatile form of transportation on land because trucks can travel to virtually any land-based destination. Transportation by rail can also be cost-effective and efficient mode of transporting large volumes of crude oil. Tankers transport oil and gas over bodies of water ranging from rivers to oceans (Fanchi & Christiansen, 2017).

Downstream Sector

The downstream sector of the oil and gas industry involves the refining of the crude oil and/or raw natural gases obtained in the upstream sector as well as selling or distributing the products obtained. According to Lewin (2003), the sector is the closest to the consumer and encompasses natural gas processing, oil refining and the distribution of products. Processing begins at the well site where the produced well stream is separated into oil, water and gas phases. Further, processing at natural gas plants and oil refineries separates the hydrocarbon fluid into marketable products (Balasubramanian, 2010).

Products associated with refining and processing are Liquefied Petroleum Gas (LPG), Asphalt, Liquefied natural gas (LNG), Synthetic rubber,

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

Propane Plastics, etc. Also, an oil refinery converts a typical barrel of crude oil into gasoline, diesel, jet fuel, liquefied petroleum gas (LPG), heavy fuel oil, and other products. Natural gas processing plant purifies natural gas and converts it into products such as LPG, Liquefied Natural Gas (LNG), and fuel gas for residential, commercial, and industrial use. In Ghana, the downstream sector is regulated by the National Petroleum Authority (NPA).

Oil and Gas Legal and Regulatory Framework in Ghana

This section explains the various oil and gas legal frameworks that permit the efficient management of the oil and gas industry in Ghana.

The Petroleum Commission Act, 2011 (Act 821)

The petroleum commission was established under this Act as the regulator for the upstream sector of Ghana's Oiland Gas Industry, charged to perform regulatory functions initially performed by GNPC under PNDCL 84.

Petroleum (Exploration and Production) Act 2016, Act (919)

Petroleum (Exploration and Production) Act, Act (919) was amended in 2018 to regulate upstream activities. This regulation also provides information on strategic assessment programme for opening areas for petroleum activities. Section 3(2) of the Petroleum (Exploration and Production) Act 2016, Act (919) provides information on a) a map of the proposed area to be opened for petroleum activities b) the envisaged petroleum activities in the area c) possible development solutions d) the proposed methodology for assessment for petroleum activities.

Further, Section 3(2) d of the same Act provides information on the proposed methodology for assessment of impact of petroleum activities on local communities; impact of the petroleum activities on the environment, trade,

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

agriculture, fisheries, shipping, maritime and other industries and the risk of pollution; and the potential impact of the petroleum activities. In relation to these regulations, a draft of the Strategic Assessment Programme shall be prepared by the Minister together with other relevant agencies. However, this act prohibits the direct and indirect assignment of petroleum agreement without written permission of the Minister.

Petroleum Revenue Management Act 2011 (Act 815)

This act was approved in April 2011 and provides a clearer means by which revenues accrued from the commercialisation of petroleum resources can be protected and used in the most reasonable way (Ghana News Agency, 2011). Additionally, it provides a clearer overview of how petroleum revenue from upstream and midstream operations can be collected, allocated and managed in a responsible, transparent and sustainable means which can benefit citizens in Ghana. The act establishes the Petroleum Holding Fund, the Ghana Stabilisation Fund and the Ghana Heritage Fund. It is to be noted that the success of the development of this act was as a result of substantial contributions from the public and civil society who are stakeholders.

Section 21 (5) of the Act states that "in other to maximise the impact of the use of the petroleum revenue, the Minister (reference to the Minister of Finance) shall prioritise any four sectors listed in Section 21 (3) (Asiamah 2011; Egyir, 2012). Section 21 (3) identifies the use of Annual Budget Funding Amount and also provides twelve areas where the spending petroleum revenues should be invested whenthe long-term national development plan is absent. These areas are agriculture and industry; physical infrastructure and service delivery in education; science and technology; portable water delivery and

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

sanitation and infrastructure development in telecommunication; road; rail and port.

Others have been found to include: physical infrastructure and service delivery in health; housing delivery; environmental protection; sustainable utilisation and protection of natural resources; rural development; developing alternative energy sources; strengthening of institutions of government concerned with governance and the maintenance of law and order; public safety and security and provision of social welfare and the protection of the physically handicapped and disadvantaged citizens (Asiamah 2011; Egyir, 2012).

Notably, seventy per cent (70%) of the oil revenues are to be put into the nation's annual budget to be used for public investment expenditure in line with the prioritised areas and the long-term national development plan which is subject to renewal every three years. (Babalola, 2010). However, this act prohibits borrowing against petroleum reserves and may also not be used to provide collateral for the state or any private entity. The Petroleum Revenue (Amendment) Act, 2015 (Act 839) was ratified to modify the Petroleum Revenue Act 2011 to provide for the allocation of funds to the Ghana Infrastructure Investment Fund for the purposes of infrastructure development and other related matters.

Petroleum (Local Content and Local Participation) Regulations 2013, (L.I 2204)

Local content is defined as the percentage of locally produced materials, personnel, financing, goods and services rendered to the oil industry which is measurable in monetary terms whilst local participation refers to the level of

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

Ghanaian ownership in the oil and gas industry The local content and Participation bill was passed in November 2013 that specified that Ghanaian should be given preference in the areas of employment in the oil and gas industry and should derive maximum benefits from Ghana's oil and gas resources. The main purpose was to ensure that expatriates' oil and gas companies realised equitable returns on their investments while giving Ghanaian citizens the opportunity to derive maximum benefits from its natural resources (Ministry of Energy, 2010).

This regulation applies to contractors, sub-contractors, service providers, licensees and other entities in the petroleum sector. This law ensures that Ghana takes control of its natural resources in an industry dominated by International Oil Companies (IOCs). The policy objectives to be achieved under the local content policy are the maximization value addition and job creation through the use of local good and services, expertise, businesses and financing in the oil and gas value chain; develop local capacities in the industry value chain through education, skills transfer and expertise development, technological transfer, active research and development programmes; achievement of maximum local employment, international competition of domestic businesses and control for Ghanaians over development portfolios for local stakeholders (Ministry of Energy, 2010).

Establishment of ENI in Ghana

Eni, the parent company of Eni Ghana, is an integrated energy company with a global presence, committed to growth in the activities of exploration, production, transportation, transformation and marketing of oil and gas and production of electricity. ENI has had a long-distance relationship with Ghana

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

as far as the 1960s. This relationship was nurtured by the company's activities with the establishment of Ghana Oil Company Limited (GOIL) which was owned by the AGIP Ghana Limited with 855,000 shares and SnamSpA with 95,000 shares. ENI is currently in the exploration and production, refining and marketing sectors of Ghana's oil and gas sector.

Hydrocarbons International Holdings, a company in Zurich-Switzerland, received SnamSpA's 95,000 shares on 16th December, 1968 with the Government of Ghana acquiring 100 percent of the company in 1974. In 1970, the wholly-owned AnicSpA and AgipSpA's Ghanaian Italian Petroleum Company (GHAIP) was incorporated as an Italian limited liability company, built the Tema refinery, just 24km from the capital, Accra. Then in 1974, Ghanaian authorities incorporated GHAIP as Ghana Oil Company Ltd (GOIL). In 1977, the Government of Ghana subsequently acquired total ownership of GHAIP and in 1991, the facility was renamed the Tema Oil Refinery. With this, ENI returned to the Ghanaian soil in September 2009 to start their current activities.

Eni Ghana was established in 2009, and currently operates two blocks, namely the Offshore Cape Three Points license (oil and gas development leases) and the Cape Three Points Block four exploration license. In 2017, ENI Ghana drilled and linked production wells to the production facility achieving the planned peak production of 45 kbbl/d one year earlier than scheduled. Eni began gas production from the Sankofa field in the Offshore Cape Three Points (OCTP) on July, 2018. The field provides 180 million standard cubic feet of natural gas per day (mmscf/d) and will last for a period of at least 15 years. This is enough to convert natural gas to half of Ghana's power generation capacity.

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

ENI's production started from two of the four deep-water subsea wells connected to the FPSO "John Agyekum Kufuor". After the final steps of commissioning of the offshore facilities, their production gradually flowed via a dedicated 60km pipeline to the Onshore Receiving Facility (ORF) in Sanzule, where natural gas is compressed and distributed to Ghana's national grid. Eni Ghana has successfully established a fruitful partnership with the Government of Ghana, becoming one of the major operators in the country, committed to significant investments in the petroleum sector.

Establishment of Atuabo Processing Plant (Ghana Gas)

Ghana Gas Company is the state Agency that has the mandate to operate infrastructure required for the gathering, processing, transporting and marketing of natural gas resources in Ghana. Following extensive consultations by Kwesi Botchwey led National Gas Development Task Force, commissioned by President Atta Mills in February 2011, which developed a blue print for the development of Ghana's natural gas resources, the Ghana National Gas Company (Ghana Gas) was established in July, 2011. The company was incorporated as a limited liability company with the mandate to "build, own and operate infrastructure required for the gathering, processing, transporting and marketing of natural gas resources in the country".

The genesis of the establishment of Ghana Gas began with the discovery of oil and gas reserves in the Jubilee Fields in 2007 which signified a turning point in the developmental efforts of the government and people of Ghana. In recognition of the potential of Ghana's oil and gas resources in national development, the former andlate president, Professor John Evans Atta Mills in February 2011 commissioned "National Gas Development Task Force" to

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

review and make appropriate recommendations for the speedy realisation of a national gas commercialisation infrastructure system. In April 2011, the Task Force submitted its report to the President. The recommendations therein included the evacuation and treatment of associated gas from the Jubilee Field production.

Acting upon the above, President John Atta Mills sanctioned the establishment of an indigenous company to undertake the project. As a result, the Ghana National Gas Company (Ghana Gas) was formed, hence, giving true expression to government's emphasis on 'local content' in the oil and gas industry. Ghana Gas was, thus, incorporated as a limited liability company in July 2011 with the responsibility to build, own and operate infrastructure required for the gathering, processing, transporting and marketing of natural gas resources in the country. The Offshore Pipeline, the Onshore Pipeline, the Gas Processing Plant, the NGLs Export System, and the Office Complex are collectively the "Project" and are also sometimes referred to collectively as the Western Corridor Gas Infrastructure Development Project or the Ghana Early Phase Gas Infrastructure Development Project.

Impact of Oil and Gas Operations on the Wellbeing of Citizens

Oil and gas production attract people from different locations to communities closer to oil and gas production in search of employment due to higher relative salaries related to such jobs. (Gyan & Asante 2017; Obeng-Odoom, 2014). The influx of people especially workers contribute to local inflation of essential goods and services in oil areas resulting in high prices of goods and services and increase in rental charges raising the cost of living (Chindo, 2011; Akakpo, 2015). Also, migration of people into such

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

communities put pressure on social amenities, public utilities, increase insecurity, increase waste generations, among others (Akakpo, 2015).

According to Eregha and Irughe (2009), oil producing communities attracted a large number of non-indigenous people into the Niger Delta area. The influx of people especially oil workers into oil communities has led to a breakdown of traditional norms and values. Other common features of migration of people into regions due to oil discovery and production include alteration in the way of life (live, work and play). For instance, the influx of people especially expatriates have led to increased social vices such as armed robbery, fraud, prostitution and homosexuality in the Takoradi Metropolis. Further, congestion in the Metropolis is increasing at a faster rate due to the influx of both nationals and non-nationals into the area. This is caused by heavy-duty trucks belonging to oil and gas auxiliary companies which sometimes lead to traffic congestions, road deterioration, longer journeys and road accidents (Akakpo, 2015; Quayson, 2012).

Oil and Gas Operations and its Association to Social Unrest

Existing Literature have argued that countries that are dependent on crude oil and other extractive materials are likely prone to civil conflicts (Le Billon; 2001; Patey, 2017). Countries especially developing countries with valuable extractive resources such as oil and gas and other minerals have plunged such countries into civil unrest and conflicts. Countries such as Myanmar, DR Congo, Sudan, Azerbaijan and Angola are examples of conflict-prone areas as a result of exploration of natural resources. A report by the United Nations Environmental Programme (2009) showed that exploration of natural

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

resources including crude oil has stimulated about eighteen (18) conflicts in some regions from 1990 to 2010.

Conflicts in such countries are either limited to the whole country or specific areas within the country. The grounds on which some conflicts break out include but not limited to inequalities in oil revenue allocations, failure to meet demands of oil communities, poor governance, lack of transparency and accountability, corruption, etc (Akhionbare & Osuji, 2013; Darkwah 2010; Gary & Karl, 2003; Girod, 2015).The consequences of social unrest that results from oil conflicts include sexual violence, destruction of installations, kidnapping, youth agitations, inter and intra community violence, violence between communities and oil companies, loss of lives and destruction of properties (Akhionbare & Osuji, 2013; Eregha & Irughe, 2009). This was affirmed by Akhionbare and Osuji (2018) that oil exploration in the Oguta Local Government Area of Imo state in Nigeria has led to community clashes and devastating violence.

Darkwah (2010) in her work also indicated that the Niger Delta has become breeding grounds for armed gangs responsible for arms proliferation and hostage-takings in the area. Further, conflicts over extractive natural resources do not only occur within a country but also occur among countries especially countries that share borders where the resource can be located. This has created serious tensions between countries such as Uganda and the DR Congo when the two countries realised the existence of oil reserve on their shared border (Darkwah, 2010; Yav, 2007). Patey (2017) argued further that Transnational Corporation (TNCs) play a significant part in most conflicts in

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

developing countries as they support one section as against the other and use the natural resource to fuel such conflicts.

Oil and Gas Operations and its Association to Displacement and Resettlement

The extractive industry is linked to the displacement of thousands of people causing them to abandon their current place of abode. Natural disasters, conflicts, environmental changes and development are some causes of displacement. This results in some social problems such as human right issues. Countries such as Germany, Zimbabwe, Papua New Guinea and India are few countries that have experiences in mining-induced displacement worldwide (Terminski, 2013). Rew, Fisher and Pandey (2000) reported that mining is the fourth major cause of development-induced displacement. In other words, they argued that the reason for about 10% of development induced-displacement that occur in the world yearly is caused by the mining of resources of which extraction of mineral resource contributes 10.3% among other causes.

According to Cernea (2006), about fifteen million people are displaced annually as a result of large development. In the case of Africa, mining of gold, copper, bauxite and diamond are some of the cause of development induced-displacement of people which eventually lead to loss of jobs and income, homelessness, food insecurity, spiritual uncertainty and health related issues (Downing, Moles, McIntosh & Garcia-Downing, 2002). For instance, Robinson (2003) specified that mining made thirty-seven thousand (37000) people lose their place of residence in South Africa over a period of five (5) years. In the case of Zimbabwe, the development of Marange Diamond Fields led to the

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

resettlement of four thousand, seven hundred (4700) Chiadzwa people to relocate to ArdaTransau where the people moved into built houses.

Also, the development of aVle's Moatize coal mine in Mozambique forced the displacement of seven hundred (700) families to relocate to Cateme area in Mozambique. The consequences of the relocation were lack of agriculture farmlands, lack of access to power supply and potable water (Varia, 2013). Nigeria is not new to the issue of displacement as oil exploitation in the Niger Delta Region has displaced the indigenous Ogoni people as a result of environmental destruction caused by oil extraction. Lastly, the Tarkwa District of Ghana has seen about thirty thousand (30000) people displaced between the period of eight years (1990-1998) by the gold mining operation. The displacement has destroyed about fourteen (14) communities causing mass migration of the youth to urban centres (Akabazaa & Darimani, 2001).

Oil and gas exploration, development and production also cause displacement and resettlement of residents in affected communities. For example, people in Sudan were forcefully relocated to make way for the production of low-sulphur crude oil which affected their ancestral homes, lands and livelihoods. (Sudan Tribune, 2009). Risking the livelihood of people especially farmers resulting from forced settlement put pressure on them since agriculture is the main occupation in Africa. This makes it difficult to practice alternate livelihoods for affected families (Darkwah, 2010; Amadi & Tamuno-Ngo, 2018).

Oil and Gas Operation and its Association with Environmental Destruction

Natural resources play significant roles in the development of economies and the survival of human beings as they are manipulated by people

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

to provide basic materials to satisfy their needs, thus natural resource exists in the natural environment (Gutti, Aji & Magaji, 2012). Activities of man such as pollution, over-exploitation of resources and ecosystem destruction in a quest to survive create lots of adverse impact on the environment which hinders the sustainability of the environment. Petroleum exploitations have also triggered adverse environmental impacts (Kadafa, 2012; Kaku, 2018; Watts, 2001).

According to a report by United Nations Conference on Trade and Development (UNCTAD) (2007), several ways by which the environment is adversely impacted by oil and gas exploration are through gas flaring, oil spills and leakages, extensive deforestation and pollution. The costs that emanates from oil exploitation activities include ecological disturbance, bad weather, soil infertility, destruction of aquatic and wildlife habitats, erosion and conflicts between oil companies and affected communities (Darkwah, 2010; Gutti et al., 2012). Hurtig and Sebastián (2002) noted that gas flaring emits high quantities of carbon dioxide into the environment which causes air pollution. For instance, it is estimated that about 123 gas flaring sites are present in the Niger Delta region of which about 45.8 billion kilowatts of heat are released into the atmosphere every day from 1.8 billion cubic feet of gas.

The direct consequences of flared gas include fouled air, change in weather patterns and acid rain (Adeyemo, 2002; Kafada, 2012; Uyigue & Agho, 2007). Oil spillage from oil and gas activities, on the other hand, are common on oil fields which also result from blowouts and damage of pipelines and takes longer period to diminish from the environment, usually between 1 and 25 years. This kind of pollution affects waterbodies especially threatening fisheries, and other ocean species and livelihood sources of residents who

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

depend on them. For example, farming and fishing which are the main traditional economic activities of such affected communities have been made less sustainable by oil and gas exploration activities.

Women are the most affected in the sense that they can no longer grow farm produce, kill fishes and their farming lands are sinking due Chevron's pollution of their water hence leading to poverty, hunger and daily struggles. (Bayode, Adewunmi & Odunwole, 2011; Darkwa, 2010; Ozumba, 1997; Turner & Brownhill, 2005). UNCTAD (2007) reported that five thousand four hundred (5400) oil spillage cases were officially recorded in the Niger Delta Region between 2000 and 2004.

For instance, Ghana witnessed the spilling of seven hundred and six (706) barrels of hazardous substance by an upstream oil company, KOSMOS energy. This caused environment disruption of which the company was sanction to a fine by the government of Ghana (Kaku, 2018; Obeng-Odoom, 2014). The value chain of oil and gas exploitation right from its production stage, processing and distributing phase have adverse implications on the environment which aggravate into pollution and health issues (Gabriel, 2007; Idumah & Okunmadewa, 2010).

Oil and Gas Operations and its Links to other Socio-cultural Impacts

The essential implications of crude oil and gas production are the impact of such activities on the cultural practices of host communities of oil activities. Oil activities have led non-indigenous people especially oil workers with different purpose from different cultures and backgrounds to settle in oil and gas communities. This has led to the breakdown of traditional norms and values and therefore promoted social vices (Akakpo, 2015; Akhinobare & Osuji,

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

2018). Moreover, oil workers are believed to have enormous amount of oil money which attracts younger ladies into sexual promiscuity. Omorodion (2004) attested to the fact that the high salaries received by oil workers compelled them to 'purchase' women to be their sexual partners.

This is also evident in the Niger Delta Region as oil workers with substantial income tend to keep more women as their wives and concubines. According to Boohene and Preprah (2011) women have been objectified and used at the discretion of men in such communities. Obenade and Amangabara (2014) also cited that the socio-cultural impact of artisanal refinery in the Niger delta includes dropping out of school by the youth to become refiners, marketers, security personnel, among others. They went further to note that prostitution and armed robbery was the order of the day in the region. Sexual promiscuity is linked to the Outbreak of HIV/AIDS epidemic in the Niger Delta (Obenade & Amangabara, 2014; Uyigue & Agho, 2007).

Oil and Gas Operations and its Links to Loss of Livelihoods

Host communities of oil and gas activities are the most likely affected area especially those who live closer to the drilling site. The livelihoods of such communities are threatened since they are impacted by oil and gas operations. Farming and fishing which are the traditional occupations of such communities are brought to a standstill when oil activities are taking place. Agricultural farmlands are taken from the people for the installation of facilities such as pipelines, offices, camps among others without adequate compensation (Darkwa, 2010; Ikelegbe, 2005; Kortey et al., 2012).

This has led to degraded lands and forests, vegetation destruction and rendered the soil infertile. This situation is similar to other mining sectors in the

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

Wassa District of Ghana as it has experienced the worst form of land destruction as a result of mining activities in the area (Akabzaa, 2000; Akabzaa, & Darimani, 2001; Annan & Edu-Afful, 2015). Similarly, this situation is evident in Cameroon, where the construction of pipelines by three multinational oil companies has led to a wide gap of about thirty (30) metres in the forest where they hunt, gather and cultivate crops for their survival. This has threatened the traditional livelihood of the Bagyeli Ogoni Land of Nigeria (Nelson, 2002; UNCTAD, 2007).

Oil exploration activities have also affected the fishing sector as fishermen and fisherwomen are restricted from fishing at particulars areas of water bodies both on land and the sea. This is because Exclusive Economic Zones have been created with the help and protection of Maritime security to stop fishermen from that area. Furthermore, oil rigs serve as an artificial reef and safe haven to different species of fish (Nelson, 2002). Apart from these instances, oil drilling and production offshore have affected the fish population in a negative way. This is because oil spillage, chemicals and the noise emanating from oil and gas activities either make the fish go into extinction, disappear or become defected. (Badgley 2012; Ellimah, 2009; Fabi, Grati, & Puletti, 2004; Ozumba, 1997).

For example, the population of local fishes in the Philippines are disappearing and this has affected the livelihood of most fisher folks. These situations have led to the reduction of fish catch drastically, thereby threatening the sustainability of their source of income. These problems are not only dominant in host communities with oil and gas operations but other communities especially those located along the coastline are also affected. The

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

adverse effects comprise of unemployment, hunger and poverty (World Rainforest Movement Bulletin, 2009).

Impact of Oil and Gas Operations on Economic Transformation

Countries endowed with natural resources including oil and gas are believed to be blessed because the exploitation of these natural resources present the resource-rich countries with many opportunities. Potential benefits such as job creation, income and revenue generations, provision of physical infrastructure and provision of social amenities are all opportunities that resource-rich nations are deemed to enjoy if only the proceeds from their resource are effectively managed and utilised (Acquah-Sam, 2014).

The effective utilisation and management of natural resources through strong institutions, good governance, accountable and transparent leadership benefit both the national and local economies in the country. This has contributed to the success story of both Norway and Botswana. Rosser (2006) asserts that the economic development of some oil-rich nations is as a result of oil and gas discovery. For instance, the Gross Domestic Product (GDP) for Norway before the discovery of oil was not encouraging but with the discovery and production of crude oil, Norway now has the highest GDP in the world (Larsen, 2004).

Impact of Oil and Gas Operations on Employment and Investment Opportunities

Investment and employment opportunities are linked to oil and gas exploitations. Large numbers of employment opportunities have been created since the discovery and extraction of oil and gas. These employment

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

opportunities are not created in the oil and gas industry alone but also it has led to the creation of jobs in other sectors. Employment in both oil and non-oil related sectors has generated higher income for citizens, hence improved their standard of living. Akakpo (2015) reported that lots of employment opportunities in the Sekondi Takoradi Metropolis are emerging as a result of the oil and gas find. These opportunities are not found only in the oil and gas industry but also in other sectors which have been given less attention.

In other words, there are oil-related employment opportunities and non-oil-related employment opportunities. But the majority's attention is directed towards the oil-related employment opportunities due to the perception by the indigenes that oil jobs generate higher incomes as compared to jobs found in other sectors of the economy (Petrova & Marinova, 2013; Plänitz & Kuzu, 2015). Moreover, hotels, restaurants, banks and other financial institutions and insurance companies are emerging rapidly and of course, they do require qualified human resources. This means people are also getting employed in the above-mentioned areas.

Although some of these companies were in existence before the oil and gas find their numbers are increasing rapidly in the Metropolis as a result of the oil find. Investment opportunities are also linked with oil find in the sense that oil discovery increase investment by attracting people from all over the country and sometimes outside the country to invest in lucrative businesses (Akakpo, 2015).

Empirical Review

This section reviewed existing literature relating to the social, economic and cultural impact of oil and gas operations in a bid to further explain the

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

objectives of the study. This section was grouped into sub-sections in order to provide reviews of literature in relation to each objective.

Economic Impacts of Oil and Gas Industry

This section presented reviews of literature in relation to the first objective of the study. Existing literature revealed diverse results thus the need to review in a bid to provide justifications for the study's findings.

Agbogidi, Okonta and Dolor (2005) examined the socio-economic and environmental impact of oil exploration on agriculture with focus on two oil-producing communities (Edjeba and Kokori) of the Delta State, Nigeria whose main livelihood activities weremade of agriculture. One hundred (100) questionnaires were administered to animal, crop and fish farmers. Random sample was used to select the respondents. The findings of the study revealed that oil exploration and production activities have resulted in destruction of farmlands and water bodies due to oil spillage and this has led to decline in agricultural harvest and hence reduced the income earning capacity of the people significantly.

The impact of oil and gas production on the socio-economic development of the Niger-Delta Region of Nigeria with focus on the role of oil industry's operation and government was examined by Okoye, Akenbor and Enaini (2010). Chiefs and title holders in Ogba community in Rivers State made up the sample for the survey. The main data collection instrument was questionnaires and chi-square were the statistical tool used in analysing data. The findings indicated that there were no significant impacts of operators and the government on socio-economic development of the region.

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

Further, in Ghana, Boohene and Preprah (2011) did another exploratory study on the effects of oil and gas discovery on women and livelihoods. The main aim of the study was to examine the potential outcomes of oil and gas operations on women without recommending other sources of livelihood. The study was purely exploratory in nature and purposive sampling method was used. The study adopted a quantitative approach and descriptive analysis used. The data gathered were entered into IBM SPSS statistics software for analysis. It was found that women observed that their role in oil and gas production is restricted in that they do not have the requisite capacity (knowledge and skills) to engage in the industry. It was found that respondents perceived that oil and gas discovery has led to reduced fish catch, loss of livelihood and reduced income.

Manu (2011) conducted a study on the emerging oil industry in Ghana: socio-economic and environmental impact on the people of Cape Three Points. The study identified a gap and thus investigated how natural resource curse can be solved. The study was conducted using qualitative strategy and case study design of three communities. Unstructured interview, questionnaires, documentary analysis and participant observations were used to solicit data from respondents. The sampling procedure selected for the study was a purposive random sampling. The sample size was missing in the study as well as how the data was analysed. The findings of the study indicated that it was possible Ghana can escape the resource curse and that the general optimism of Ghanaians and local indigenes of Cape three points was to improve their quality of life.

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

Egyir (2012) conducted a study on the impact of oil and gas activities on fisheries in the Western Region of Ghana. The dominant aim of the study was to examine the outcomes of oil and gas activities on the declining productivity of fisheries. The survey for the study employed the use of purposive sampling method where respondents were chosen on random basis. A total of one hundred and eighty (180) respondents were selected to know their perception of the effects of oil discovery on their livelihoods. Structured interviews and questionnaires were used to solicit for information from respondents in the study area. Descriptive analysis was used to analyse information provided by key respondents. Key findings showed that oil and gas activities led to a loss in the quantity of fish caught, pollution, high cost of living, reduced incomes and loss of jobs.

A research on the risks and impacts of oil exploration and production on local communities was conducted by Owusu-Ansah (2012) in the Western Region of Ghana. The main purpose of the study was to find out whether indigenes in the host (oil) communities were deriving benefits from hydrocarbon exploration and also to define the extent to which current oil exploitation has impacted oil communities' livelihood and income. The study was conducted using qualitative method approach to address the research objectives by employing descriptive and some aspect of explanatory research design. Also, Qualitative case study methodology was also employed for investigating current phenomena.

Moreover, the population for the study was Non-governmental organisations, civil society organisation and indigenes of the oil communities targeting, farmers, fishermen, household heads, women and traders. Purposive

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

sampling was the best method in selecting respondents for the study. Structured and unstructured interviews, focus group discussion and field observation were used to gather data for the study. In analysing the data QSR NVIVO was used for coding. The study failed to indicate the sample size. It was finally concluded that oil exploitation negatively impacted host communities in the Western Region of Ghana. Similarly, additional findings demonstrated that the negative impact of oil and gas exploitations was felt significantly in the fishing industry which is the economic backbone of local communities in the western region.

A study was carried out in Kenya by Nanok and Onyango (2017) on the socioeconomic and environmental analysis of the effects of Oil Exploration on the Local community Lokichar, Kenya. The main purpose of the research was to determine the extent to which natural resource exploitation affect social, economic and environmental variables. Research design adopted for the study was a cross sectional design in which the population for the study was obtained using 0.05 level of significance developed by Cochran (1973). A sample size of three hundred and eighty-five (385) persons was obtained and a proportional sampling procedure was used for sampling the population.

Furthermore, in order to study the relationships between different factors chi-square, factor analysis and correlational analysis was utilised for the study. The study failed to identify the type of data instrument used for soliciting information or data. Dominant result for the study indicated that economic variables such as cost of land was high due to oil exploration activities in the Turkana County in Lokichar area. Also, it was discovered that health factors, school enrolment and environmental factors were strongly affected by oil exploration and the least affected were cultural norms. It was also found that the

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

cost of land was high since the beginning of oil exploration and perhaps cost of land will continue to go high as oil activities continue.

A research on the impact of oil exploitation on a Ghanaian Fishing community was conducted by Attah (2018). The purpose of the study was to examine the effects of resource extraction in terms of social, economic and environmental focusing on whether indigenous communities profited from resource exploitation activities. Qualitative single case study approach was adopted for this study to address research questions. Semi-structured interviews and questionnaires were the main research instrument for gathering data from Apyam Community in which the questionnaires were administered to define the duration of stay in the community, their ethnic groupings, educational qualification, gender, occupation and marital status. Purposive sampling was used for this study.

The study constituted Apyam Community (household representatives, fishermen, women and the youth) government agencies and management officials of companies as the population. However, the study failed to identify the number of people who constituted the population. The study revealed that oil drilling and exploitation in the study community did not yield any beneficial outcomes either socially, economically and environmentally in spite of their positive expectations. Instead, problems such as reduced fish catch levels, presence of sea weeds and extended time at sea negatively affected their fishing activities.

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

Socio-cultural Impacts of Oil and Gas Industry

This section presented reviews of literature in relation to the second objective of the study. Existing literature revealed diverse results thus the need to review in a bid to provide justifications for the study's findings.

A study conducted by Ofuoku, Emuh, and Agbogidi (2008) on the social impact assessment of crude oil on small scale farmers in oil producing communities of the central agriculture zone of the Delta State of Nigeria. Information was gathered from one hundred and twenty (120) respondents through administering of questionnaire. The research design used was descriptive research design through which data was analysed and interpreted using descriptive statistic and chi-square was used to test the hypothesis. It was concluded that problems such as noise pollution, bush burning, soil erosion, land degradation, water pollution and massive deforestation were experienced in the selected communities.

Egyir (2012) conducted a study on the impact of oil and gas activities on fisheries in the Western Region of Ghana. The dominant aim of the study is to examine the outcomes of oil and gas activities on the declining productivity of fisheries. The target population for the study constituted a portion of community members and groups representatives. The survey for the study employed the use of purposive sampling method where respondents were chosen on random basis. A total of one hundred and eighty (180) respondents were selected to know their perception on the effects of oil discovery on their livelihoods.

Additionally, structured interviews and questionnaires were used to solicit for information from respondents in the study area. Descriptive and

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

qualitative analysis was used to analyse information provided by key respondents. Key findings showed that oil and gas activities are likely to impact the livelihoods (especially the desire to get from work in oil industry due to illiteracy rate) of the community members negatively and lead to pollution of the environment.

Research on the effect of oil exploitation on socio-cultural issues in Oguta local government area in Nigeria was conducted by Osuhi (2013). Data was collected through structured questionnaire and analysed using descriptive and inferential statistics (mean, frequency distribution and percentages). Likert scale method which ranged from very serious, serious, undecided, less serious and not serious was also used to determine the extent of agreement. Three hundred and sixteen (316) respondents were selected using the cluster sampling technique from Oguta Town and Ezi-Orsu. The study revealed some of the social problems pertinent in the area and these included inter and intra-community violence, loss of livelihood source, destruction of historical sites, infant mortality and inferiority complex.

Akakpo (2015) conducted a study on social impact assessment of oil and gas exploration in the Western Region of Ghana. The study looked at social benefits and cost of oil and gas exploration as one of the study's objectives. The aim of the study was to identify the expected positive and negative outcomes through social impact assessment due to oil and gas find in the Sekondi-Takoradi Metropolis. The study relied on the mixed approach (quantitative and qualitative) and adopted a descriptive research design. The study's population constituted ninety-five (95) respondents and were sub divided into self-employed, unemployed and professionals.

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

The respondents were sampled using a multi-stage sampling method. Data was gathered from indigenes of Sekondi-Takoradi Metropolis through the use of structured questionnaires and interviews. The study failed to indicate the type of analysis used. It was revealed in the study that oil find in the Western Region of Ghana produced both positive and negative impact with negative aspect such as high cost of living, human and vehicular congestion and other social vices overshadowing the positive aspect in Sekondi-Takoradi Metropolis.

A study was carried out by Nanok, Onyango and Ouma in Kenya (2017) on the socioeconomic and environmental analysis of the effects of Oil Exploration on the Local community Lokichar, Kenya. The main objective of the research was to determine the extent to which natural resource exploitation affect social, economic and environmental variables. Research design adopted for the study was a cross sectional design in which the population for the study was obtained using 0.05 level of significance developed by Cochran (1973).

In addition, a sample size of three hundred and eighty-five (385) persons was obtained and a proportional sampling procedure was used for sampling the population. In order to study the relationships between different factors chi-square, factor analysis and correlational analysis was utilised for the study. The study failed to identify the type of data instrument used for soliciting information or data. It was discovered that health factors, school enrolment and environmental factors were strongly affected by oil exploration constituting 73.4%, 78.2% and 78.7% variance and the least affected was cultural norms which accounted for 39.1%.

It could be deduced that; several kinds of literature exist on the socio-economic impact of oil and gas industry. However, it was found that, as some

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

scholars found a positive relationship between the variables, others found no and/or negative relationships between the variables. Also, most of the literature employed inappropriate research methods whereas others failed to describe the research methods they employed in their respective studies. Additionally, little studies focused on the impact of oil and gas operations in the Western Region of Ghana, despite the prevalence of the impact of oil and gas exploration activities. In view of the above, existing literature have created a gap which the study seeks to fill by examining the perceived impact of oil and gas operation on the social and economic wellbeing of indigenes as well as indigenes satisfaction of oil and gas operations in the Western Region of Ghana.

Chapter Summary

The chapter presented reviews of literatures related to the study. It was also underpinned by the stakeholder theory and dependency theory due to its relatedness to the study's objectives and also to provide theoretical foundation for the study. Empirical reviews conducted revealed that, some host communities hold diverse perception about socio-economic impact of oil and gas operations. As such, oil and gas firms need to be mindful of perceptions that host communities have so as to make relevant reviews about their operations.

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

CHAPTER THREE

RESEARCH METHODS

Introduction

This chapter described the research methods that guided the fieldwork. The methodology of every research work gives it credibility; therefore, this chapter presented the research methods of the study as it discussed the research design, research approach, study area, population, sampling technique, data collection instrument and procedure, reliability and validity of instruments, data processing and analysis and ethical issues

Research Design

This study was conducted using the mixed approach and due to that descriptive analytical research design was the ideal design for the study. The mixed approach constituted both quantitative and qualitative approach which was employed to address the objectives of the study. The mixed approach was adopted for this study because the strength of one method could be used to write off the weakness in another method. (Creswell, 2009). Also, the combination of these two methods made available different types of information on the research topic and hence gave an accurate understanding of the research phenomenon (Kaku, 2018).

In this research, the perceived socio-economic impact and satisfaction of oil and gas operations on residents of Ellembelle district was analysed to have an in-depth understanding of the research problem. The descriptive analytical research design is ideal because this study was poised to examine the economic and socio-cultural impacts as well as resident's satisfaction of the oil and gas

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

operations in the Ellembelle District of the Western Region of Ghana. Therefore, it helped to get information on the lived experiences of the people of the Ellembelle District.

Further, the qualitative approach gave insights on essential explanations and attitudes of local residents, hence, their subjective perceptions were measured through interviews and discussions with pertinent stakeholders which allowed them to have a sense of participation in the research. Quantitative methodology, on the other hand, was utilised in this research since its main purpose was to collect and analyse data in the form of descriptive and inferential statistics (Johnson & Onwuegbuzie, 2004). This approach reduced problems associated with the generalisations of the study's outcome which can mislead findings (Creswell, 2009). Quantitatively, structured questionnaires were administered to derive adequate information.

Study Area

The Western Region is one of the sixteen (16) administrative regions in Ghana which was created from the former Western Province in 1960. Between the western part of the Ivory Coast Border and the eastern part of the Central region lies the Western Region of Ghana, and thus lies above 240 metres above sea level (Dickson & Benneh, 2001). It covers approximately ten (10) percent of the total land surface and has the longest coastline of about 192 kilometres. Cape Three points in the Ahanta West District is acknowledged as the southernmost part of Ghana and can be found in this region (Ghana Statistical Service, 2013). It is the region with most natural (renewable and non-renewable) and economic resources such as gold, manganese, bauxite, diamonds, cocoa, timber and currently, crude oil. Also, it is the largest producer of coconuts,

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

rubber and oil palm (Ghana Sekondi-Takoradi Regional of Commerce & Industry, 2010).

Agriculture as well as industry form the major economic activities of the Region of which oil and gas exploitation constitute the dominant industrial activity since its discovery in 2007 at Deepwater Tano blocks and West Cape Three Points. Ecotourists sites such as Boako waterfalls, Bia National Park and Reserve, Egambra Crocodile Sanctuary, Busua Pleasure Beach, Princess Town Beach, Fort Anthonio and Fort Fredericksburg are economic potentials being explored. Additionally, the main indigenes of this region are made up of different groups of Akans comprising of the Ahantas, Wassas, Nzemas, Sefwis and Aowins. These group of people practice similar culture in succession, inheritance and lineage organisation. There are seventeen (17) districts in the region of which Ellembelle district is one.

The Ellembelle district was carved out from the previous Nzema East District in 2008 under LI 1918 and has its district capital as Nkroful. The district is one of the fastest growing districts in Ghana due to its potential for industrial development. The district capital is located about 80 kilometres from the regional capital and can be found at the southern end of the region between longitudes 2º05’ and 2º35’ West and latitude 4º40 and 5º20 North. The Ellembelle district is bordered by the Gulf of Guinea at the south, Axim Municipality at the south, the East with River Ankobra and the West with Jomoro District (Ghana Statistical Service, 2013). It covers a total area of about 1,468 (Square kilometres) which constitute about 6.8% (Percent) of the total land mass of the Western Region. The district has one of the wettest climate zones in the West African Sub-region with a dominant rainfall season.

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

The vegetation in the northern part of the district is made up of moist rain forest which has several species of both timber and non-timber species. Three forest reserves namely, Shelter Forest Reserves, Draw River Forest Reserve and Ndumfri Forest Reserve can all be found in this district. The arability of farmlands and favourable weather conditions in this area makes the soil fertile and rich for the growth of crops such as cocoa, oil palm, rubber, among others. The coastline which is mainly of savanna vegetation is about 70km. Ellembelle district is seen as one of the social investment areas as it houses some of the beautiful beaches in Ghana. The population size of the district stood at 111,118 as of 2018 constituting almost 4% of the overall population of the Western Region. Out of the population, females constitute 51.6% whiles the males make up 48.4% of the population. It was projected that the growth rate of the district for 2018 would be 2.3% (Ghana Statistical Service, 2013).

Moreover, the district has most of its population (79.4 %) residing in the rural areas whilst the remaining population (20.6 %) resides in urban areas. Nzema is the major spoken language in the district whilst other languages such as Twi and Evalue are also spoken. The most common and major occupation engaged in the district is agriculture (farming and fishing) of which other occupations such as small-scale mining and trading are also practised. Precisely, the source of livelihood among the people in the northern belt of the district is engaged in farming such as oil palm, rubber, cocoa and cassava while the people in the coastal belt engage also engage in marine fishing and coconut farming as their source of livelihood. The district is made up of 115 settlements (Kaku, 2018).

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

Brief Description of the Communities

This study is carried out in the Ellembelle District of the Western Region of Ghana where both upstream and downstream oil and gas activities are dominant. There are also communities located few kilometres apart that are used as a case study in this research. These communities which include Sanzule, Atuabo and Asemndasuazo are termed as oil communities due to the presence of oil and gas operations in the area and can be said to be communities closest to the Oil and Gas fields (Jubilee Fields) (Ghana Statistical Service, 2013).

Atuabo which means "under the Tuatree" is a coastal community and the first community in the Ellembelle District from the Jomoro District in the Western Region of Ghana that has gained both national and international recognition due to the exploitation of petroleum in its environs. Atuabo covers a total land mass area of 1,468 square kilometres with 70.4% of the inhabitant living in rural area and 20.6% living in urban areas. This community shares boundary with other communities like Menzezor in the north, Anochie in the East and Ekabaku in the West respectively. It has a total population size of 1,584 with the dominance of males (729) over females (855) (Ghana Statistical Service, 2013).

There are few ethnic groups in this community where the Nzemas constitute 98% of the ethnicity and the remaining ethnic groups of 2% constitute Fantes and other ethnic groups. Majority of the active population are engaged in agriculture and the remaining are engaged in the private informal sector. Economic activities of this community include fishing, farming and livestock production. Farming is the dominant occupation practised by the residents. Among the major crops such as cassava, maize, cocoyam and vegetables grown,

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

coconut is overriding cash crop. Fishing is a seasonal activity that is usually practiced between the period of August and October (Ghana Statistical Service, 2013; Ablo & Asamoah, 2018; Kaku, 2018). The literacy level of the community is low although basic schools can be located in the community.

This can be attributed to inadequate teaching staff, poor performance of students during basic examination (BECE) and lack of inputs by some parents due to low incomes. The community lack other social amenities such as health facilities and pipe-borne water (USAID, 2010). Asemduazo is an island community which is not closest to the sea. It is located few kilometres from Atuabo and has the presence of Atuabo Gas processing plant situated on its land. This community has arable farmland good for coconut plantations. Farming forms the major economic activity in the area. Since this community is not located nearer to the sea a fewer section of the population engages in fishing due to the presence of smaller waterbodies in the community. Due to its smaller population size of 453, few infrastructures such as good roads and a school can be located in the Asemduazo community.

Sanzule which means “fetch water” is a community located 10km apart from Atuabo. It shares borders with Bakanta in the East and Krisan in the West respectively. The community has a flat landscape and has a coastline full of sand. The local population of Sanzule is about 1,617 of which males are 774 and females are 843 (GSS, 2000). In terms of ethnicity, Nzema is the dominant ethnic group with few Fantes in the community. Arable farmlands are common features of the community as they are fertile for the cultivation of coconuts, oil palms, cassava and some types of vegetables. Dominant farming activities

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

include the cultivation of cassava and coconut (Ghana Statistical Service, 2013; Kaku, 2018).

Also, commercial pig farming is practised in the community. Coconut oil processing is another economic activity which support most of the household in the community but the major occupation in the community is marine fishing as it is done on a larger scale. The literacy level in the community is moderate though kindergarten, primary, junior high school and National Vocational Training Institute (NVTI) exist in the community. There exists good road infrastructure, pipe-borne water and toilet facility in the community (USAID, 2010). The community lacks hospital facilities and resort to the next community, Eikwe for health services. A private oil and gas company known as ENI oil and gas company is situated in this community.

This study is centred on these three communities located in the Ellembelle district of the Western Region. The actual population size of these communities could not be determined since most of the residents were not present in the community due to the make-shift nature of the job. The main occupation of the residents in these communities has been fishing and other fishing-related activities such as fish mongering and fish processing. Other occupations such as crop farming, petty trading and animal rearing constitute a smaller percentage of economic activities in these communities. This indicates a diversified source of livelihood in these communities.

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

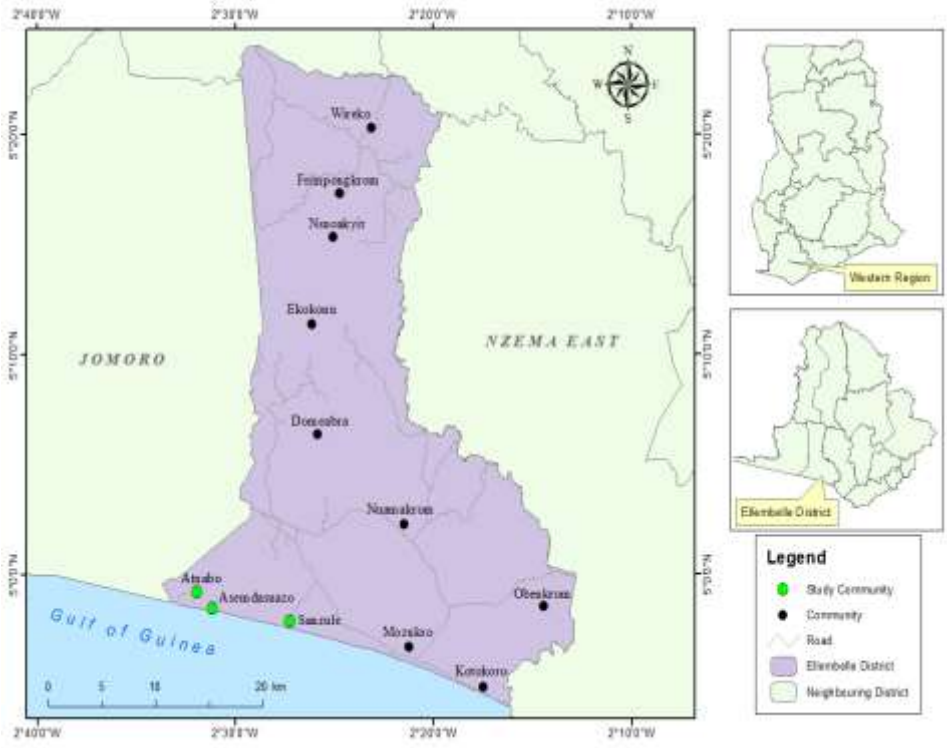

Figure 1: Map Showing the Location of the Communities under this Study
Source: Field Work (2020)

Population

Saunders, Lewis and Thornhill (2009) defines population as the study of the object (individuals, organisations, groups and events) to which they are exposed. To achieve the study's objectives, people in the Ellembelle District, especially those who have lived in the district prior to and after (or above ten (10) years) the discovery, exploration and production of petroleum formed the population because they were believed to have deep insights of the perceived social and economic impact of the oil and gas activities on their wellbeing..

Additionally, the target population drawn for the study included local residents especially (heads of families, women, youth and elderly) chiefs, representatives of various groups and other key informants who lived in the three catchment areas as they provided the study with relevant and in-depth

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

information. Specifically, the target population comprised three communities from the district namely, Atuabo, Asemndasuazo and Sanzule. The respondents who formed the target population were randomly selected from the communities by ensuring that they were engaged in either fishing, farming, trading or other related activities and had a fair knowledge about oil and gas activities. This ensured that respondents were well represented. The total population of the respondents from all the three communities in the district was three-thousand, six hundred and fifty-four (3, 654).

Sampling Procedure and Technique

Given the number of communities in the Ellembelle district, coupled with some difficulties in locating each community, attempts to cover all these communities were virtually difficult to achieve. In this regard, it was prudent for the study to choose respondents from the populations from which conclusions could be drawn about the entire population (Creswell, 2009). In this direction, the study sampled three hundred and fifty (350) members from the population using the Krejcie and Morgan (1970) sample size determination table.

In order to ensure that respondents had equal chances of being picked, a simple random sampling technique was adopted for this study as against other sampling methods. This technique was chosen based on the information provided by the Ellembelle District Assembly about oil and gas activities in the district and also because it gave respondents who had fair idea about oil and gas operations in their communities' equal chance of being selected, it was easy to use and considered a straight forward probability sampling procedure (Gravetter & Forzano, 2011).

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

Additionally, purposive sampling was adopted for the survey in conducting interview. This enabled the researcher to focus on specific characteristics of the selected population for the interview. It also aided the study to answer basic research questions as well as enable information-rich cases to be studied thoroughly. The above sampling techniques provided a high degree of representativeness by obtaining first-hand information from residents in the study areas.

Data Source

This research was drawn from both primary and secondary sources of data. Existing reports, news articles, internal documents, photos and magazines from government agencies such as Petroleum Commission, Ministry of Finance and Ghana National Petroleum Commission. The dominant data source for the study was the primary data through administering of questionnaires and conducting interviews with the respondents in the selected communities in the Ellembelle District. This provided in-depth knowledge and understanding of the phenomenon.

Data Collection Instruments

For the purpose of this study, data collection was based on the mixed method where two research instruments were used. Primary data collection instrument, specifically self-structured questionnaires were used to solicit information from the respondents. According to Saunders et al. (2009), structured questionnaires enables each individual to respond to the same set of questions in a predetermined order. This type of data collection instrument is

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

suitable in obtaining objective responses from respondents and hence ideal for quantitative analysis.

The questionnaire was drafted on a 1-5 measurement scale and was divided into four major (4) sections with section "A" soliciting for demographic information from respondents in relations to sex, age, marital status, and educational level, among others. Section "B" and "C" obtained information from respondents based on the objectives of the research. Items under these sections were measured on a 5-point scale with 1 representing least agreement and 5 representing highest agreement. Notably, section "B" contained items in relation to first objective on the perceived economic impacts of oil and gas operations whilst section "C" contained items in relations to the second objective on the perceived socio-cultural impact of oil and gas operations.

Finally, section "D" contained items in relations to the third objective on the perceived satisfaction of residents for the oil and gas operations. From the various sections, respondents were asked to rate their extent of agreement on a scale of 1- 5. To support the responses from the questionnaires, in-depth interviews were conducted with the help of an interview guide and responses were recorded using a recorder. Key stakeholders including community elders, chiefs and assembly members were interviewed to gain further knowledge that was not captured in the questionnaires and also to serve as a confirmatory interview.

Each interview with key stakeholders did not go beyond 20 minutes. Stakeholders were asked to elaborate and also cite instances of how the petroleum activities in their communities impacted their lives. Later they were asked to pinpoint certain specific issues that affected their well-being as a result

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

of oil and gas operations. The face to face interview helped in soliciting for valuable information that was hidden from the public eye and also to know their mindsets, opinions and attitudes that was not revealed by the questionnaire. This type of data collection was suitable for this study due to its qualitative nature.

Validity and Reliability

When conducting research, it is important that the study collects empirical findings that reflect the reality of situations. Therefore, one needs to be sure that the data answers the research questions or objectives and will be easily accessible (Saunders et al., 2009). One way to evaluate a primary source is to use the concepts of validity and reliability. For validation purposes, twenty-five (25) questionnaires were pre-tested in the study area to examine the importance and understanding of the respondents as well as the availability of information. The outcome of the pre-testing enabled the questionnaires to be reviewed thoroughly and restructured. The accuracy of the questionnaires was also determined by requesting experts' colleagues to critically examine the instrument to know their candid opinions as well as identify gaps and make inputs where necessary. This led to the achievement of both face and content validity.

Alternatively, reliability of a research instrument is the extent to which results are consistent over time and thus the results of the study can be reproduced under similar methods (Makasi, Govender & Munyoro, 2014). In order to test the reliability of the research instrument, a reliability test was conducted using the Cronbach Alpha coefficient (r). Saunders et al. (2009) specifies that the value of the Cronbach Alpha coefficient determines the reliability of the study's research instruments. For a research instrument

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

especially questionnaire to be reliable, then the coefficient should be more than 0.5. as this shows internal consistency and thus acceptable.

Data Collection Procedure

The collection of the data commenced with a permission letter signed by the Director of the Institute for Oil and Gas studies, University of Cape Coast which was attached to a questionnaire. This was done to ensure the credibility of the entire data collection exercise. After permission has been granted from the appropriate authorities, questionnaires were randomly distributed to respondents. To help in the collection of data from various respondents, research assistants from the Social Science Department of the University of Cape Coast and a translator from the selected communities were trained and engaged to assist in the administration of the questionnaires in local dialects**.** This helped in aiding most respondents who have not attained a higher level of education and therefore found it difficult to read, understand and respond to questions on their own to also participate in the survey.

To ensure timely response rate, a period of eighteen (18) days were allocated for this exercise and this was basically due to the busy schedules of residents in the selected communities. Specifically, data collection exercise took two (2) weeks from March 25, 2019, to April 7, 2019. The data were retrieved on a daily basis. Out of the three hundred and fifty (350) questionnaires distributed to the respondents, three hundred and twenty-four (324) questionnaires were retrieved from them. This obtained 92.57 percent response rate. In conducting the study, many challenges such as language barrier, interview fatigue, and resource constraints, among others were encountered.

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

Language barrier was the major challenge encountered in the field. In order to find a solution to this problem, a local resident who was born and bred in one of the communities was trained and employed to help translate the English language to their local dialect known as Nzema. Since the three communities shared similar cultures including language there was no difficulty in translating the questionnaires into Nzema in the other two communities. Secondly, there was unwillingness and reluctance on the path of some local residents especially fishermen and those engaged in other fish related activities in almost all the selected communities to either provide responses to the questionnaire or partake in the interview due to some personal reasons.

Additionally, data collection involved moving from one community to another, in this case, travelling was the only option and since some of the communities were located far apart from each other motorbike was hired and, in some instances, walking from one community to another was the only option. Being a researcher in a new environment, there was a little difficulty in adapting to the new environment in terms of food and weather condition which was extremely warm as a result of flaring of gas by upstream oil and gas companies present in the communities. The stress encountered during the collection of data brought about adverse health conditions. Lastly, resource constraint was another problem since all funds allocated for the study run out due to the high cost of living in the selected communities. Apart from these challenges, some encounters were quite an experience which made the field work a success.

Ethical Considerations

According to Buchanan and Bryman (2009) the main rules of data collection comprise: a) voluntary participation b) the right to privacy c) Free

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

and informed consent d) Anonymity and e) Confidentiality. In this study, all efforts were made to meet all the ethical rules. For instance, the data gathered for this research did not involve any confidential information to some greater extent as the privacy and personal confidentiality of respondents were respected. For the study to be free from biases, it must also be scientifically sound and accurately reported (Malhotra & Birks, 2007).

In view of this, participants especially the residents in the three communities were informed about the aim of the research and what objectives it sought to accomplish. They were encouraged to feel free to express their views as objectively as possible and they were at liberty to choose either to participate or not by seeking permission from the Ellembelle District Assembly, Chiefs, community elders, opinion leaders and other key personalities. Also, necessary rites were performed such as presenting drinks to the palace that enabled the research to be performed without any hindrance. Participants also had the option to withdraw their consent at any time without any form of adverse consequences. Anonymity and confidentially was guaranteed to the participants.

Data Processing and Analysis

Quantitative data from respondents were edited to check for consistency and differences in the responses. It was then coded using Statistical Package for Social Sciences (SPSS) version 22 to generate both descriptive and inferential statistics. Factor analysis (Kaiser-Meyer-Olkin (KMO), Bartlett's test of Sphericity, rotated component matrix and scree plot) was carried out to determine the sampling adequacy in order to evaluate the quality of indicators and hence serve as a method of data reduction. Furthermore, the descriptive

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

statistics (i.e. frequencies, percentages, means and standard deviation) was used to organize, analyse and interpret data collected from the field.

Finally, inferential statistics was used to analyse the significance of oil and gas operations on residents in the catchment areas and the results were presented in tables and figures. Qualitative data, on the other hand, was edited, transcribed and grouped into themes, and hence interpreted. These tools were prompted by the research objectives

Chapter Summary

The chapter described the methods utilised in obtaining the results of this study. Specifically, this study adopted the mixed approach method which gave relevance to the choice of qualitative and quantitative methods employed in addressing the objectives of this study. This section, therefore, presented the key elements of research methods comprising research approach and design, study area, population, sample and sampling procedure, data collection instrument, among others used in the study. The chapter discussed details of participant selection and data collection methods and instrument for the study. The data analysis technique utilised also described how themes presented in the results of this work were obtain. Also, ethical consideration as well as validity and reliability were discussed to give credibility to the study.

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

CHAPTER FOUR

RESULTS AND DISCUSSION

Introduction

This chapter constituted the socio-demographic characteristics of respondents. It also presented the results and discussion of the study's research objectives in relation to assessing the perceived socio-cultural and economic impacts of oil and gas operations on the residents. It finally discussed residents' perceived satisfaction with the oil and gas operations.

Background Information of Respondents

The first section of the questionnaire sought to obtain demographic information by analysing the specific personal characteristics of the respondents. Background information obtained included gender of respondents, age group, marital status, residency, length of stay, family type and land ownership status. Table 3 presented the distribution of background information of respondents. Table 3 showed the gender distribution of the respondents. Out of the total sample of 324 respondents, (189) representing (58.3 %) were made up of male respondents whiles (135) representing (41.7 %) were females. This indicates that the study area is dominated by males.

In relation to age of respondents, (78) of the respondents had age distribution of 18 to 25years denoting about (24.1%) of the respondents, followed by (84) respondents who had age distribution of 26 to 35 years denoting (25.9%) of the respondents. Also, (68) respondents representing (21.0%) were between the age range of 36 and 45 whiles (37) respondents were between the ages of 46 and 55 constituting (11.4%). Among the respondents,

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

the least numbers (33 and 24) in terms of age distribution was those within the age bracket of 56 to 65 and 66 years and above with percentage of (10.2%) and (7.4%) each. The results imply that the study area was dominated by young adults who are aged between 18 and 35 years followed by prime-aged adults.

Also, in relation to marital status of respondents, it was found that out of the 324 respondents, (184) respondents representing (56.8%) were married whereas (77) respondents representing (23.8%) were not married. The remaining respondents (63) were distributed between those who were divorced (18), cohabiting (31) and widowed (14) with a percentage of (5.6%,), (9.6%) and (4.3%) respectively. The results indicate that majority of the respondents are married. The family type of respondents was also indicated in Table 3. The extended family type (164) was the dominant family type with (50.6%) followed by the nuclear family constituting (160) respondents representing 49.4%; denoting that extended family is the dominant family system practiced in the study area.

Table 3 further revealed that, out of the total (324) respondents, (181) of them representing (55.9%) completed JHS/Middle school, while (85) respondents representing (26.2%) attained primary education. Also, (35) respondents representing (10.8%) attained no formal education whereas (23) respondents representing (7.1%) have attained tertiary education. It is therefore clear that the study area is dominated by JHS/Middle school graduates. This implies that, majority of the respondents do not possess the required qualification to enable them attain white colour jobs or higher positions in the industry thus making menial jobs the order of the day for them.

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

Table 3: Background Information of Respondents (N=324)

	Frequency	Percent (%)
Sex		
Male	189	58.3
Female	135	41.7
Age (years)		
18-25	78	24.1
26-35	84	25.9
36-45	68	21.0
46-55	37	11.4
56-65	33	10.2
66 and above	24	7.4
Family type		
Nuclear	160	49.4
Extended	164	50.6
Marital status		
Single	77	23.8
Married	184	56.8
Divorced	18	5.6
Cohabiting	31	9.6
Widow/widower	14	4.3
Level of Education		
No formal education	35	10.8
Primary	85	26.2
JHS/Middle school	181	59.9
Tertiary	23	7.1
Employment Status		
Unemployed	190	58.6
Self-employed	77	23.8
Employed by government	28	8.6
Employed by private individuals	29	9.0

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

Table 3: Continued

Residency		
Sanzule	152	46.9
Asemnduazo	64	19.8
Atuabo	108	33.3
Length of Stay		
Less than 10 years	17	5.2
11-20	45	13.9
21-30	88	27.2
31-40	65	20.1
41-50	47	14.5
Over 50 years	62	19.1
Total	**324**	**100.0**

Source: Field work (2020)

Table 3 further indicated the employment status of respondents. Out of (324) respondents (190) of the respondents constituting (58.6%) were unemployed whiles 134 respondents representing (23.8%), (8.6%) and (9.0%) were either self-employed, government employed or privately employed. This indicates that the unemployment rate of residents is high as this may be due limited opportunities presented by the oil and gas firms and lack of higher academic qualifications to attain better paying jobs. The table demonstrated the residential status of the respondents. (152) respondents representing (46.9%) out of the total (324) respondents are residents of Sanzule whiles (108) respondents representing (33.3%) are residents of Atuabo. (64) of the respondents representing (19.8%) are residents of Asemnduazo. This shows that residents of Sanzule represent larger respondents of the population due to their larger population.

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

Also, Table 3 indicated the length of stay of respondents in the study area. Respondents who have stayed in the study area for less than 10 years constituted (17) representing (5.2%) whiles the length of stay of respondent between 11 to 20 years were (45) representing (8.9%). Also, 14.5% have lived in the study area between the period of 41 to 50 years while 19.1% have lived in the study area for more than 50 years. Finally, 20.1% have stayed in the study area between the period of 31 to 40 years. Among the respondents, majority of them (88) representing (27.2%) have stayed longer in the study area between 21 and 30 years. This means that majority of the respondents have stayed in the study area for more than ten years, thus they are long term residents implying that they have adequate knowledge about oil and gas operations and can therefore provide relevant and reliable information to achieve the objectives of the study.

Finally, in relation to land ownership of respondents, (228) representing (70.4%) of the total respondents revealed that they own plot of land whiles (96) representing (29.6%) of the respondent revealed that they did not own plot of land in the neighbourhood. This implies land ownership in the study area the main source of livelihood for some and ancestral property for others.

Perceived Economic Impact of Oil and Gas Operations

This section presented the results of research objective 1 in relation to perceived economic impact of oil and gas operations within the Ellembelle District of Ghana. In a bid to evaluate the quality of the measures (indicators) used for the analysis, factor analysis was first carried out. Factor analysis was also used as a method of data reduction in a bid to ensure that only the quality measures were used for the analysis. This section reported key elements under

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

factor analysis comprising Kaiser-Meyer-Olkin (KMO) and Bartlett's test, rotated component matrix and scree plot respectively. The results were presented in Tables 4 and 5 and Figure 1.

Table 4: Kaiser-Meyer-Olkin (KMO) and Barlett's Test

Kaiser-Meyer-Oklin Measure of Sampling Adequacy		.901
Bartlett's Test of Sphericity	Approx. Chi-Square	2636.570
	df	66
	Sig.	.000

Source: Field work (2020)

Kaiser-Meyer-Olkin (KMO) and Barlett's test measure the strength of relationship among variables. KMO measures the sampling adequacy of variables and how suitable the data is for factor analysis. To enable satisfactory factor analysis, KMO should vary between 0 and 1 or precisely should be greater than 0.5 which is considered as the suggested minimum. According to Kaiser (1974), 0.5 is the proposed minimum which is barely accepted, values between 0.7- 0.8 are acceptable, and values above 0.9 are marvellous. The factor analysis was performed on twelve (12) variables that measured residents perceived economic impact of oil and gas operations. The KMO showed that there were significant relationships among the perceived indicators of economic impacts as the KMO measure of adequacy was .901 > 0.5,

Also, the Barlett's test was used to determine the appropriateness of factor analysis and it provided the minimum value to proceed for the factor analysis. Bartlett's test also assumes that the null hypothesis of the correlation matrix is an identity matrix. The null hypothesis was tested at 95% confidence level. The p-value (α) of .000 < 0.05 implies that the null hypothesis should be rejected thus the factor analysis is valid. From Table 2, the Bartlett test had a

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

sig. Value (α) of 0.000<0.05 thus rejecting the null hypothesis that the correlation matrix is an identity matrix. This implies that the correlation matrix is not an identity matrix thus the study passed the minimum standard required before conducting a factor analysis.

Scree Plot of Perceived Economic Factors

Figure 2 presented the eigen-values of the perceived economic factors using the scree plot. The eigen-values are the variances of the factors. The eigen-value is important for determining the number of factors to maintain. The study conducted the factor analysis on the correlation matrix thus the variances were standardised. This means that each variable has a variance of 1 with total variance also equal to the number of variables used in the analysis, in this case twelve (12).

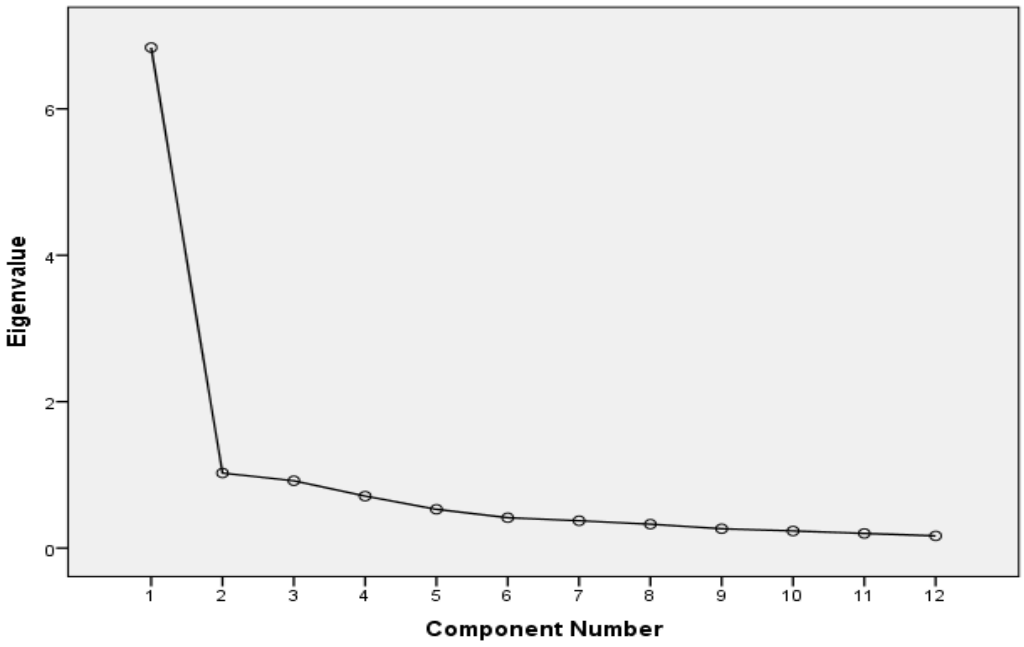

Figure 2: Scree Plot of Perceived Economic Factors
Source: Field work (2020)

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

From Figure 2, the point of interest is where the curve starts to flatten. The scree plot graphs the eigenvalue against each factor. It can be seen that the curve begins to flatten between factors 3 and 4. The study's variables were put into 2 components based on the eigen-values. This is because, after factor 2 there is a sharp change in the curvature of the scree plot. This shows that after factor 2 the total variance accounts for smaller and smaller amounts.

Rotated Component Matrix for Perceived Economic Impact

Table 5 also presented the rotated factor matrix of the study. This represented both how the variables were weighted for each factor and also the association between the variables and the factor. The study reported the result using the varimax to depict similarity in the factor pattern and factor structure matrices. The factor loadings were finally grouped into 2 components.

Table 5: Rotated Component Matrix for Perceived Economic Impact

	Component	
	1	2
Conducive business environment	.832	.169
Improved standard of living	.786	.246
Housing facilities affordability in the community	.761	.236
Increased customer base of my products	.757	.187
Market prices of goods/services	.756	.206
Enhanced market connectivity	.747	.317
Investment opportunities in my community	.711	.219
Individuals earnings	.695	.302
Increased the sales margin of products in my community	.695	.421
Improves household income of indigenous people	.666	.306
Enhanced labour salary/wages	.244	.883
Job/employment opportunities	.269	.843

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.[a]
a Rotation converged in 3 iterations.
Source: Field work (2020)

Table 5 showed the loadings of the twelve (12) variables on the two (2) factors extracted. On this basis, two factors were extracted. The higher the

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

absolute value of the loading or the closer the value to 1, the more the factor contributes to the variable. Each factor consists of all those variables that have factor loadings greater than the minimum required value of 0.3. Above all, 2 components were extracted from the twelve (12) economic variables. However, the study's analysis was based on loadings (factors) in component 1 because they all had values >0.30. Also, majority (10) of the values loaded well in component 1 as compared to component 2. This indicated that, factors (10) in Component 1 were quality measures for examining economic impact of the oil and gas operations in the area understudy.

Perceived Economic Impacts Associated with Oil and Gas Operations

This section presented the results of the study's first research objective. This objective is tasked to help in identifying the key indicators that affects the economic wellbeing of residents in the Ellembelle District. To achieve this, the study obtained responses from the respondents using structured questionnaires and interviews. The data collected were then analysed using descriptive tools such as means and standard deviations. The results are notably presented on the indicators of perceived economic impacts on residents in the Ellembelle Districts. It is to note that, the higher the mean score of an indicator, that indicator determines the impacts on residents. The results are presented in Table 6.

From Table 6, indicators with the highest means presents the highest perceived economic impacts on residents in the Ellembelle Districts and vice versa. Table 4 revealed that, housing facilities has become expensive as a result of oil and gas operations. This result obtained the highest mean of 3.83 with a standard deviation of 1.098. This could be as a result of changes in the income

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

pattern and migration in the community basically due to the presence of the oil and gas firms. This implies that there are inadequate housing facilities in the district thus the presence of the oil and gas firms have put immense pressures on the limited facilities and subsequently escalating their prices. As such, residents with low-income patterns as a result of loss of livelihood and reduction in productive activities could struggle to afford the housing facilities available.

Table 6: Perceived Economic Impact of Oil and Gas Operations

Economic factors	Mean	Std. Deviation
Housing facilities	3.8302	1.09836
Market connectivity	3.7593	1.03980
Standard of living	3.7593	1.02782
Individuals earnings	3.6975	1.02953
Increased market prices of goods/services	3.6667	1.03798
Conducive business environment	3.6636	1.06205
Sales margin increment	3.6420	1.01760
Improves household income	3.6173	1.03281
Investment opportunities	3.5741	1.13381
Increased customer base	3.5463	1.20153

Source: Field work (2020)

Moreover, rapid influx of industry workers and other people in search of greater job opportunities affect the affordability of housing facilities. This is because skilled workers or expatriates who are employed enjoy rising incomes and can afford to spend more on housing facilities, thus creating housing shortages and making it expensive and also profiteering for the property owners. This eventually affect low income earners especially indigenes who lacked the necessary skills and talents to work with the oil and gas firms. Arguably, the cost of the housing facilities and accommodation hikes in the community could negatively impact the quality of life of the residents and could also impede the

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

development of the community. One key respondent was interviewed and this was what he reported.

"The oil and gas firms are helping the landlords in this community because they are benefitting a lot, we (tenants) at the other end are suffering more. The oil workers are their target. Prior to their operations, the rent charge for a single room especially those made with woods used to cost between the range of GH10 and GH30 but now it is GH70 and above which I cannot afford."

These findings are also in line with the findings of Takyiwaa (2014), Akakpo (2015). For instance, Takyiwa (2014) conducted a research in the Sekondi-Takoradi Metropolis and found that increased population due to oil discovery in the study area caused some infrastructural challenges such as short supply of housing facilities and high cost of rent. Similarly, Kaku (2018) on his research on socio-economic effect of oil exploration among Hoima Municipality communities, Uganda found that the collection of seismic data attracted people in search of greener pastures into the Municipality which resulted in the lack of accommodation.

The result was followed by the enhancement of market connectivity through road construction which had another higher mean of 3.76 with a standard deviation of 1.040. This means that there is high market connectivity through construction of roads and market infrastructure. Arguably, the oil and gas operations have led to the construction of roads which enables residents to commute from one community to the other by linking producers to other markets, providing increased access to employment and investment opportunities, access to health and education services and most importantly providing the opportunity to connect to the outside world. Better access to

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

wider markets and different products are the positive effects of road construction. Since construction of roads are conduits to life's activities, residents enjoy its benefits as it can lead to poverty reduction. One key respondent highlighted,

"the road construction has helped us a lot, we used to walk to the neighbouring communities and even some drivers used to charge exorbitant fares because of the deplorable state of our roads, but now proper roads have been constructed which has been helpful for us especially when going to the hospital in the next town since we do not have one in our community".

This finding is in line with the findings of Hermas (2016) who found that petroleum operations in the host communities have supported the construction of roads facilities as it was evidenced in his research on an assessment of socio-economic and environmental impact of oil and gas operations of host communities under western and central coastlines of Ghana. However, the study's findings contradict the findings of Ikechukwu (2012) in his study Community Perception of Environmental and Socio-economic Impacts of Oil Exploitation: A Case Study of the Niger Delta. He found that most of the communities in the Niger Delta lacked good road networks which made life very difficult for local residents.

From Table 6, the next major indicator of perceived economic impact is the impact on the standard of living of residents. This result had a higher mean of 3.76 with a standard deviation of 1.028. This means that, residents are experiencing low standard of living because of low incomes, inability to earn better salaries and allowance from their jobs, decline in productivity and low educational level. This has made it impossible for residents to cater for their

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

dependants and afford essential things they lack to improve both their material and non-material wellbeing. This implies that community development could be affected as indigenes with low standard of living may struggle to make meaningful contributions especially financial in nature. Arguably, indigenes with low standard of living depict low quality of life and invariably a failing local economy.

This finding contradicts the findings of Akakpo (2015) who indicated that residents including those employed in the oil and gas industry and those who operate their own business in the Sekondi Takoradi Metropolis are enjoying improved standard of living by taking advantage of oil and employment opportunities and increased population.

Another determinant of perceived economic impact is the earning capacity of individuals (M=3.70; SD= 1.030). Clearly, the earning ability of residents is influenced by oil and gas operations. The loss of ancestral occupation and decline in productive activity of most residents especially fishermen and farmers have affected their earning capacity as they do not have alternate skills and talents to engage in other occupation. Some of these residents have not attained higher academic qualifications to enable them to be absorbed in higher position in the oil and gas firms. Even if they are employed by the oil and gas firms, they end up taking menial jobs which does not increase their earning capacity. This implies that most of the residents do not have the necessary skills to shift to other lucrative occupation or adopt other form of alternate livelihood to supplement their traditional livelihood and this has caused residents to experience undue hardships.

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

This is line with the findings of Attah (2018) and Agbogidi, Okonta and Dolor (2005). For instance, Agbogidi, Okonta and Dolor (2005) reported that oil exploration and production activities have resulted in destruction of farmlands and water bodies due to oil spillage and this has led to decline in agricultural harvest and hence reduced the income earning capacity of the people significantly. Similarly, Attah (2018) reported that problems associated with oil drilling and exploitation has led to reduced fish catch levels, presence of sea weeds and extended time at sea negatively affected the earning capacity of fish folks.

This is followed by prices of goods and services in the selected communities. This result produced a moderate mean of 3.67 with a standard deviation of 1.038. This means that the prices of goods and services have increased. The emergence of oil and gas operations in the study area haveled to increased prices of goods and services because oil workers with high incomes have become target customers of most goods and services and this has affected local residents because they feel the impact of higher prices and hence has affected their purchasing power. Also, the destruction and restriction of farmlands and fishing zone has led to higher prices. This implies that local residents are experiencing high cost of living and high local inflation as this has brought about increased rate of poverty and hunger which has affected the larger households.

This finding is line with Musiga (2016) who reported that the destruction of farmlands as a result of oil exploration led to a drastic increase in prices of food and other commodities in the Hoima municipality. Also, Brasier, Filteau, McLaughlin, Jacquet, Stedman, Kelsey, and Goetz (2011) conducted a research

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

on Environmental Reviews and Case Studies: Marcellus Shale Gas Development and New Boomtown Research: Views of New York and Pennsylvania Residents, found that local price inflation was high in Bradford County where there is natural gas development since rent, fuel and food prices rose as suppliers increased demands.

Additionally, conducive business environment is another moderate indicator of perceived impacts of oil and gas operations (M=3.66; SD=1.062). This means that the business environment is not conducive enough for small scale businesses. Lack of funding for small scale businesses has provided unfriendly environment for these businesses to thrive and this usually affects the growth and performance of start-ups which create wrong conditions for successful business environment. This means that wrong conditions may lead to the shutting down of small local businesses and lower the earning capacities of the small businesses. One respondent from impacted community elaborated that,

"When the oil and gas firm was constructing it facilities on our land, I knew more people will migrate into the community and also local people will be employed, so I used the little compensation I had from my land to establish a business which did not thrive because most resident were not employed"

This is also followed by sales margin of products with a mean of 3.64 and a standard deviation of 1.018. This means that irrespective of the sales that are made on products, sellers experience smaller sales margin. Due to this, the income of the sellers was adversely impacted in the sense that more goods cannot be bought and sold or more services cannot be provided. This has caused most sellers to become redundant. Other respondents reported that;

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

"the profit I get from my wares is mostly low because those (oil workers) who used to patronise my wares are either redundant or out of contract service. Now the firm provide those available with food so currently I don't make much profit as I used to"

Moreover, household income is another indicator of residents perceived economic impacts (M=3.62; SD=1.033). Clearly, oil and gas operations have affected the household income of residents in the sense that their livelihood has been destroyed by their operations which has led to the decline in their productivity. The income of families especially extended family who represent a larger proportion of the family system in the study areas have drastically reduce and this has caused struggle for their survival of their dependants.

This is followed minor indicator by investment opportunities in the sector (M=3.57; SD=1.134). Although investment opportunities are closely related to oil and gas operations, it does not positively impact the residents of selected communities. The emergence of oil and gas operations saw many investment opportunities in the study areas in the sense that more investors were willing to invest at the onset when the construction of their facilities begun but before the completion of their facilities, investment opportunities reduced. On the other hand, most investors and some businessmen do not wish to make full investment in the sense that they assume their presence in the community as temporary. One respondent highlighted that;

"we thought that with the presence of oil and gas facilities in the community, factories or estate buildings will be developed here but this did not happen".

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

Also, the communities under study have not seen any major investment opportunities in both oil related opportunities and non-oil related opportunities as compared with other urban centres who have sitings of oil and gas firms where banks, hotels, restaurants, and estate development are rampant. The oil and gas find in these communities have not experienced any rapid and significant investment in small and medium scale enterprises. This implies that local residents are going to be impacted as low investment opportunities leads to scarcity and non-accessibility of some products whose markets are both lucrative and attractive.

Lastly, Table 6 presented the least indicator of perceived economic impact of residents. Increased customer base of products was the least indicator of perceived economic impacts of oil and gas operations. This obtained a mean of 3.5463 and a standard deviation of 1.20153. The study's result indicated that there was no significant increase in customer base of products. Since petroleum development is characterised with the generation of different jobs, the focus of most jobs is to provide goods and services to the employees of these firms. Similarly, these jobs are less stable and provide fewer benefits to long-term residents. This is because the movement of significant number of employees in the oil and gas companies live in urban areas which causes them to purchase goods and services in the urban centres.

Also, most employees are made redundant by the companies due to the exhaustion of their contract causing them to look for greener opportunities elsewhere. This has reduced wider market share of product and consequently affected the growth of local businesses. This is in line with the findings of Attah (2018) who reported that in Apyam Community, small businesses especially

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

those engaged in petty trading reported reduction in business activities due to decreased spending by community members as a result in decline in fishing

From the above, it can be seen that, the major indicators of perceived economic impacts by oil and gas operations include affordability of housing facilities, enhanced market connectivity through road construction, increased market prices of goods and service, investment opportunities, improved standard of living, earning capacities of residents and increased sales margin of products.

Perceived Socio-cultural impacts of Oil and Gas Operations

This section presents the results of research objective 2 in relation to perceived socio-cultural impact of oil and gas operations within the Ellembelle district of Ghana. In a bid to evaluate the quality of the measures (indicators) used for the analysing the sociocultural impact, factor analysis was also carried out. Additionally, this section reported key element under factor analysis comprising of Kaiser-Meyer-Olkin (KMO) respectively. The results were presented in Tables 7 and Figure 3.

Table 7: Kaiser-Meyer-Olkin (KMO) and Barlett's Test

Kaiser-Meyer-Oklin Measure of Sampling Adequacy		.902
Bartlett's Test of Sphericity	Approx. Chi-Square	2804.045
	df	55
	Sig.	.000

Source: Field work (2020)

In this section, factor analysis was performed on eleven (11) variables that measured residents perceived sociocultural impact of oil and gas operations. The KMO showed that there were significant relationships among the perceived indicators of sociocultural impact as the KMO measure of

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

adequacy was .902 > 0.5. Using the Bartlett's Test, the null hypothesis was tested at 95% confidence level. The p-value (α) of .000 < 0.05 implies that the null hypothesis should be rejected thus the factor analysis is valid. From Table 7, the Bartlett test had a sig. Value (α) of 0.000<0.05 thus rejecting the null hypothesis that the correlation matrix is an identity matrix. This implies that the correlation matrix is not an identity matrix thus the study passed the minimum standard required before conducting a factor analysis. Hence Factor Analysis is considered as an appropriate technique for further analysis of the data.

Scree Plot for Perceived Socio-cultural factors

Figure 3 presented the eigen-values of the factors using the scree plot. The study conducted the factor analysis on the correlation matrix thus the variances were standardised. This means that each variable has a variance of 1 with total variance also equal to the number of variables used in the analysis, in this eleven (11).

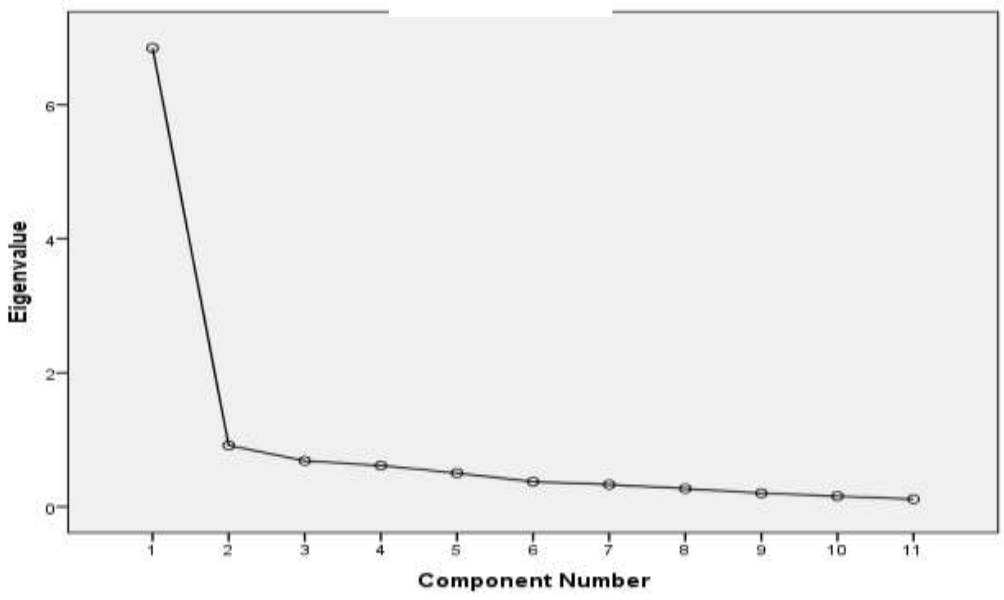

Figure 3: Scree Plot for Perceived Socio-cultural Impact
Source: Field work (2020)

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

From Figure 3, the point of interest is where the curve starts to flatten. It can be seen that the curve begins to flatten between factors 3 and 4. The study's variables were put into only one component based on the eigen-values. This is because, after factor 2 there is a sharp change in the curvature of the scree plot. This shows that after factor 2 the total variance accounts for smaller and smaller amounts. Note also that factor 3 has an eigenvalue of less than 1, so only one factor has been retained.

Rotated Component Matrix for Perceived Socio-cultural Impact

The rotated component matrix was done to assess the quality of the measures of perceived socio-cultural impact. The higher the absolute value of the loading, the more the factor contributes to the variable. The result revealed that all the variables had factor loadings greater than 0.5 thus only one component was extracted. Simply put, all the eleven (11) variables understudy were quality for the analysis hence the solution cannot be rotated. This implies that, the study's findings in terms of socio-cultural impact of the oil and gas operations were based on the 11 factors.

Perceived Socio-cultural Impacts Associated with Oil and Gas Operations

This section presents the results of the second objective the research study. This objective is tasked to help in identifying the key indicators that affects the social wellbeing of residents in the Ellembelle District. To achieve this, the study obtained responses from the respondents using structured questionnaires. The data was also collected were then analysed using descriptive tools such as means and standard deviations. The results are notably presented on the indicators of perceived economic impacts on residents in the

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

Ellembelle Districts. It is to note that, the higher the mean score of any given indicator, the higher its degree of impact on residents. The results are presented in Table 8.

From Table 8 it can be seen that the highest indicator is the threat to the ecological quality of the environment in the community. This indicator obtained highest mean of 3.74 and a standard deviation of 1.024. This implies that the operation of oil and gas companies poses danger to living organisms that is both flora and fauna. Human beings in this case, residents are also faced with the risks of the activities of oil and gas companies. This threatens the sustainability of the environment on which they depend on for survival. This finding is in line with Ofuoku, et al. (2008), Theodori (2009), Brasier et al. (2011) and Ikechukwu (2012).

For instance, a study conducted by Ofuoku et al. (2008) revealed that problems associated with oil and gas exploration included noise pollution, water pollution, massive deforestation and soil erosion as these threaten the ecological life of the environment. Similarly, Brasier, et al. (2011), found that gas development in the Bradford, Lycoming and Washington counties posed threat to the environmental quality as these threats included loss of wildlife and forest resources, water and air pollution and could substantially impact the local tourism industry.

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

Table 8: Perceived Socio-cultural Impact of Oil and Gas Operations

	Mean	Std. Deviation
Threatens quality of ecological life	3.7377	1.02402
Loss of livelihoods	3.7130	1.01430
Resource related disputes	3.6142	1.99344
Education and social amenities	3.6111	1.03649
Access to quality drinking water	3.5926	1.10196
Threatens safety of indigenous people	3.5833	1.13043
Increased incidence of social vices	3.5494	1.02024
Promote good moral standards	2.4630	0.14648
Exposure to health hazards	2.3395	0.17594
Participation in decision making processes	2.2531	0.24075

Source: Field work (2020)

The result is followed by loss of livelihoods of residents in these communities. This obtained a higher mean of 3.71 and a standard deviation of 1.0143. This means that the commencement of oil and gas activities has negatively impacted on the livelihood of the residents as their ancestral occupation (fishing and farming) has been affected. This has resulted in most of the residents especially fishermen losing their livelihood as they experience low fish catch. On the other hand, farmers also suffer from the impact of the operations of oil and gas activities as their lands have largely been used for the construction of oil facilities without adequate compensation

Also, gas flaring and other adverse related activities of the oil and gas companies has made agricultural land infertile thus resulting in a decline in agricultural produce yield especially their staple food such as cassava. s One respondent indicated that:

"*my husband and my eldest son used to bring lot of fish for me to process so that I can earn some form of income, but since they started drilling petroleum*

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

at sea, sometimes they either catch seaweed (sargasum) or bring nothing home. This has affected my livelihood in such a way that I can no longer support my husband in taking care of the family"

Another respondent confirmed;

"farming was what I used to do to cater for my family, but now my land has been used for the laying of pipelines which has rendered me jobless".

This finding is in line with Osuhi (2013), Dowkpor (2015), Adewunmi and Odunwole (2011) and Ikechuku (2012). For instance, Adewunmi and Odunwole (2011) reported that oil and gas pollution threaten ocean species and farmlands leading to poverty and hunger. Additionally, Ikechuku (2012) in his findings reported that the destruction of the environment has led to a shift in occupation pattern of many indigenes which has affected their livelihoods in adverse ways.

The next indicator obtained a higher mean is the 3.61 and a standard deviation of 1.9934. Though the use of natural resources is often associated with conflicts, this study's result revealed that there have been high resource related disputes since the emergence of oil and gas operations. This is experienced on both onshore and offshore. There have been clashes among fishermen due to 'no-go- area' that has been created by the navy. This is because, majority of the oil and gas firms carry out their activities onshore thus restricting the numerous fishermen from operating freely is a way in which the oil and gas facilities on shore are being protected.

On the other hand, land which serves as a source of livelihoods to farmers and ancestral property of families has been the main source of disputes in the selected communities. This is because oil workers or expatriates with high

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

income are ready to offer higher prices for any piece of land and landowners on the other hand are ready and willing give out their lands to the highest bidder. This has brought about tension, hostility and resentment among leaders, family members and other sections of the communities. For instance, a respondent who has lived in the area of study almost all his life testified that:

"Previously, when we need a land to farm on, we used to present one bottle of schnapp or other drinks to elders of the palace, then they demarcate a piece of land for us to farm on, but now with the emergence of oil and gas operations in the neighbourhood the land is given to the one who has more money, this has brought about tension and disputes among residents and the traditional council"

Another respondent indicated:

"The activities for oil and gas firms has impacted families to some extent in the sense that some large acres of lands which are ancestral properties used to belong to some families in the neighbourhood but ever since the commencement of their operations there have been rivalries among family members because some family members have sold the family property and bolted with the money".

Moreover, Table 8 the next major indicator for the perceived impact of oil and gas operations is the provision of educational facilities and other social amenities. This indicated that since the emergence of oil and gas activities there has been improvement in both educational facilities and other social amenities. The result had a mean of 3.611 and standard deviation of 1.0365. Clearly, this shows an improvement in educational facilities such as the renovation of a nursery block, the construction of girl's dormitory, teachers' quarters, school

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

canteen and provision of toilet facilities. This implies that the emergence of oil and gas operation has improved the quality of education to some extent. The provision of social amnesties such as the toilet facilities has made life easier since some facilities that were lacking are now made accessible. Respondent from one of the communities reported that;

"The gas firm in our community has been able to construct a canteen for the nursery school and is now completing a dormitory for the vocational school here. This will help the community a lot".

Another respondent also reported that;

"*we used to have one toilet facility in this whole community which was a death trap to us, especially the children but since the operation of oil and gas firms, a new, bigger and modernised toilet facility has been constructed for us"*

Though the operation of oil and gas firms has contributed a lot of educational facilities, some respondents were of the view that these firms have not made any significant contribution to education. Another respondent reported that;

"We went to a gas firm in this community and we pleaded with them to build a fence for the lower primary school in this community and up to today nothing has been done, even the children in this community has to compete with other children from the urban centres for scholarship awards, which is impossible because these children are exposed to low quality education. The children from this community cannot meet the cut-off point which is unfair"

The finding by Akakpo (2015) contradicts the result of this study as he argued that oil and gas discovery has improved educational facilities in the

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

Sekondi Takoradi Metropolis as some scholarship scheme has been introduced to public educational facilities in the Metropolis.

Another indicator is the increased access to affordable, improved drinking water as indicated by Table 8. This result reported a mean of 3.60 and a standard deviation of 1.1020. This means that the provision of basic necessities by the oil and gas companies serves as social indicator when it comes to the perception of residents. In this case, the study's findings revealed that few pipe-borne waters have been provided by oil and gas companies for the selected communities, but are insufficient to meet all the needs of residents since the provision of one pipe borne water serves the needs of about three surrounding villages.

Also, some communities do not have access to pipe-borne water and still rely on boreholes and smaller water bodies to meet their needs. This implies that oil and gas operation has made some contribution to providing affordable drinking water. This was confirmed by one respondent who claimed that;

"we have heard that pipe borne water has been provided by some oil and gas companies but this is not so in our community. We still depend on boreholes and the river we have in this community"

This is confirmed in the study of Ikechuku (2012), Brown and Tari (2010), however, this finding contradict the findings of Ikechuku (2012) who reported that most of the communities in the Niger Delta lacked Portable drinking water as water shortage was a major problem, instead water from polluted ponds, streams and rivers is the only water source they can depend on.

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

Further, Table 8 indicates that the activities of oil and gas activities poses threats to the safety of the indigenous communities. This result reported a mean of 3.58 and a standard deviation of 1.1304. Clearly, residents are of the view that in the case of an unforeseen circumstances, they do not have anywhere to go since their located closely to the oil and gas onshore receiving facilities. For instance, most residents are of the view that if there should be an explosion in any of the gas facility, they may be exposed to some dangers. Also, with an upsurge in social vices especially theft and armed robbery in the communities under study, respondents feel that they are unsecured. This implies oil and gas operation has made respondent feel insecure in their own community because of growing social vices. This does not only threaten their safety, but also their survival.

This finding with a study by Akakpo (2015) who found that oil discovery in the Sekondi-Takoradi Metropolis has led to growth in social vices such as armed robbery, fraud, prostitution and homosexuality which has increased insecurity among the residents. Additionally, Table 8 indicates increased social vices as a result of oil and gas activities. This obtained a mean of 3.55 with a standard deviation of 1.0202. Specifically, social vice is on the increase due to most of the residents especially the youth being unemployed. Most unemployed youth without alternate livelihood find it lucrative to indulge in criminal activities such as theft and armed robbery. This has put pressure on the youth to engage in any unlawful activity that may help in their survival. This is confirmed by some respondents who indicated that;

"theft has become order of the day in this community because some (thieves) assume that there are a lot of oil money and goodies over here. They

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

come from outside the community which disturbs us a lot and sometimes we feel unsafe in our own homes."

This finding is in line with studies carried out by Akakpo (2015), Brasier et. Al (2011), Brown and Tari (2010) and Ikechuku (2012). For instance, Akakpo (2015), indicated that influx of people into oil communities in the Takoradi Metropolis has led to increased social vices and increased insecurity among folks. Also, Brasier et. al (2011) reported that natural gas development brought about change in their way of life as the influx and diversified mix of people into the counties and led to increase in drugs and alcholism and gang related issues. Ikechuku (2012) reported that some traditions have been thrown away as people chase oil and oil money and this has led to diminished cultural identity of people in some oil communities especially Aboh community.

Further, the table revealed a minor indicator of the perceived socio-culural impact by the emergence of operations to be the promotion of good moral standards in the selected communities. This result obtained a low mean of 2.4630 with a standard deviation of 0.1465. This means that the activities of oil and gas operations has led to a decrease of moral standard in the community in the sense that there is lack of discipline in the society and the rate at which respect was accorded to authority or leaders in position has decreased. This has led to a breakdown of traditional norms and values in the selected communities. Akakpo (2015) in his study reported that oil and gas activities has led to a breakdown of traditional norms and values in the Takoradi Metropolis.

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

Another least indicator is the health hazards that the oil and gas activities pose. The table indicated that communities are faced with health hazards due to operations in the sector. The result obtained the lowest mean of 2.3395 with a standard deviation of0.1760. This means that although the oil and gas operations pose some health hazards, they do not have immense impact on the residents' well-being. Some residents attribute the heat from gas flaring activities to the cause of skin diseases such as skin rashes and some conditions such as insomnia (lack of sleep) due to warm weather during the evening in the communities. One respondent claimed:

"the heat coming from the gas facilities is unbearable. My children are the ones who suffer because their skin is sensitive to the warm weather. They end up with either fever or heat rushes all over their bodies, but, because we don't have any place to go, we try to cope with it.

Similarly, one respondent complained that

"*in the evening, we come and sleep at the beach because the heat in our rooms is unbearable and even the air is polluted so u can easily catch cold and coughs".*

This is in line with the findings of Brown and Tari (2010), Ikechukwu (2012). For instance, Ikechukwu (2012) reported that impact of oil exploitation on the health of the inhabitant in the Niger Delta comprised of malaria from gas flare and pollution of waterbodies, various skin conditions from the release of harmful chemicals into the atmosphere, respiratory disease as a result of inhaling poisonous substances and dysentery caused by oil production related activities.

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

Finally, table 8 indicates the engagement of indigenous people in decisions regarding the social well-being. This also obtained lowest mean of 2.2531 with a standard deviation of 0.2408. Residents are of the view that they are not highly included in decision-making regarding their social-wellbeing. They rather presume that traditional authority and leaders represent them and that the outcome of most decisions are either unknown to them or partially revealed to them. This leads to lack of transparency in their traditional system.

From the above, it can be seen that, the major perceived socio-cultural indicators which influences residents well-being include threat to the quality of ecological life of the environment, loss of livelihoods, resource related disputes, improvement in education facilities and other social amenities, provision of affordable drinking water, the safety of the environment and the increase in social vices. On the other hand, the minor socio-cultural indicators that residents place emphasis on when determining perceived socio-cultural impacts include: promotion on good moral standards, health hazards and engagement in decision making.

Perceived Residents Satisfaction of Oil and Gas Operations in the Ellembelle Districts

This section presents the study's discussion in relation to the third objective on residents perceived satisfaction of oil and gas operations in the Ellembelle District in the Western region of Ghana. The results are displayed in Table 9 and figures 4-11 and discussed thereafter.

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

Table 9: Perceived Residents' Satisfaction with Oil and Gas Operations

	VD F (%)	D F (%)	Un F (%)	S F (%)	VS F (%)
Willingness to improve operations to protect environmental quality and promote health and safety of indigenous people	208(64.2)	59(18.2)	22(6.8)	22(6.8)	13(4.0)
Preferential treatments regarding the provision of good drinking water, educational and health facilities	153(47.2)	83(25.6)	69(21.3)	14(4.3)	5(1.5)
Understand residents' needs relating to decisions to improve earning capacity	142(43.8)	114(35.2)	61(18.8)	5(1.5)	2(0.6)
Adequate support in the sustenance and creation of both existing and alternate livelihoods	140(43.2)	140(43.2)	21(6.5)	18(5.6)	5(1.5)
Good employee attitude	179(55.2)	85(26.2)	35(10.8)	21(6.5)	4(1.2)
Appealing nature of operation protects the environment	155(47.8)	119(36.7)	37(11.4)	11(3.4)	2(0.6)
Quality of life not affected	21(6.5)	26(8.0)	31(9.6)	172(53.1)	74(22.8)
Create more employment avenues	78(24.1)	119(36.7)	66(20.4)	31(9.6)	30(9.3)

Very Dissatisfied = VD, Dissatisfied = D, Uncertain = Un, Satisfied = S and Very Satisfied = VD

Source: Field work (2020)

From Table 9, respondents were asked whether they were satisfied with the willingness and readiness of oil and gas firms to enhance their operations in order to protect environmental quality and promote the health and safety of indigenous people. The study revealed that, majority (208) of the respondents' representing 64.2% were very dissatisfied with this statement, 18.2% dissatisfied, 6.8% remained uncertain, 6.8% were also satisfied and finally 4.0% were very satisfied with this statement. This implies that, for the community to feel dissatisfied with the operations of oil and gas firms, hence,

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

the oil and gas firms should be willing and ready to improve upon their operations to meet needs of residents.

The result was also presented in Figure 4. This was done to provide a pictorial view of the respondents' level of satisfaction in relation to the willingness of the oil and gas firms to improve upon their current operational activities.

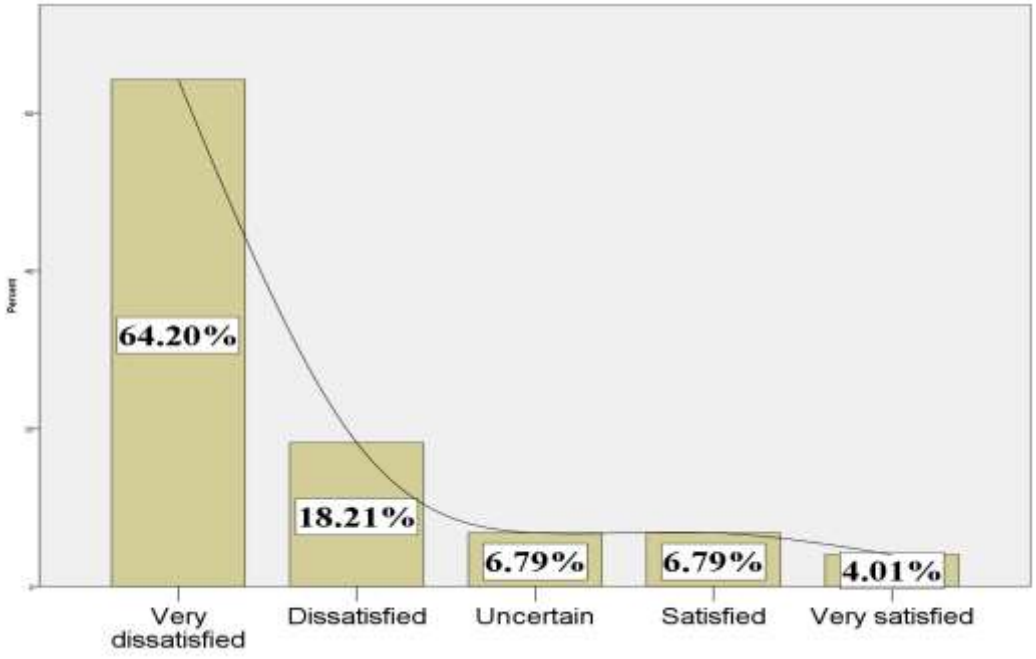

Figure 4: Respondents' Perceived Satisfaction with Willingness and Readiness of the Oil and Gas Firms to Improve Ecological Quality, Health and Safety Needs
Source: Field work (2020)

Also, Table 9 revealed that majority (153) of the respondents representing 47.2% established that they are very dissatisfied with the kind of preferential treatment the community receives regarding the provision of good drinking water, educational, health facilities, among others from oil and gas firms as compared to other communities. This was followed by 25.6% who are dissatisfied, 21.3% remained neutral, 4.3% were dissatisfied while 1.5% are very satisfied. The result was also presented in Figure 5.

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

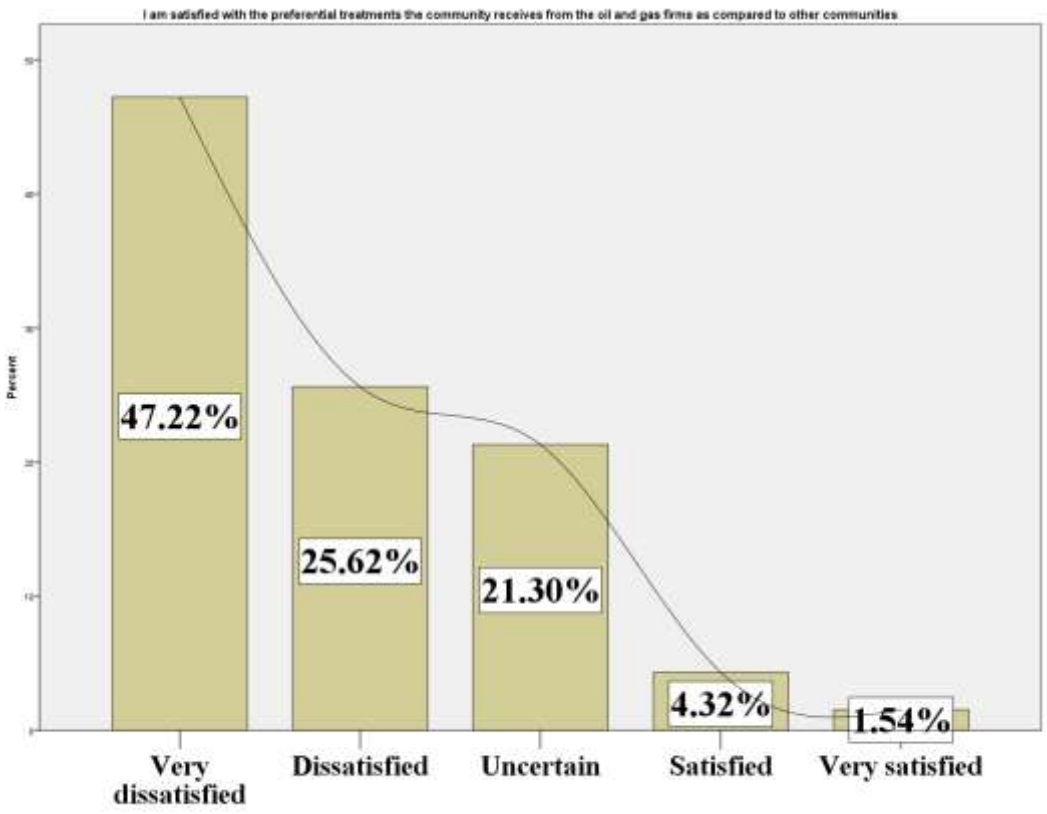

Figure 5: Perceived Satisfaction with Preferential Treatments in Provision of Social Amenities
Source: Field work (2020)

The implication of the study's result is that the kind of special treatment given to residents in the affected communities is low as compared to other communities as this is essential to satisfying residents. Thus, concentrating on other reasons, could lead to dissatisfaction if care is not taken.

Moreover, respondents were asked if they are satisfied because the oil and gas firms fully understand their needs to improve their earning capacity, majority (142) of them representing 43.8% were very dissatisfied with this statement, 35.2% were dissatisfied, 18.8% remained neutral, 1.5% were satisfied and finally, 0.6% were strongly satisfied. This implies that, residents are dissatisfied with the operations of oil and gas firms because they do not fully

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

understand the needs of the residents relating to decisions to improve their earning capacity. Another respondent reported that;

*"we feel dissatisfied with their operations because they do not see the significance of our needs to improve our ear*ning capacity *when we present it to them, though they can do more for us".*

It is to note that, the result was also presented in Figure 6.

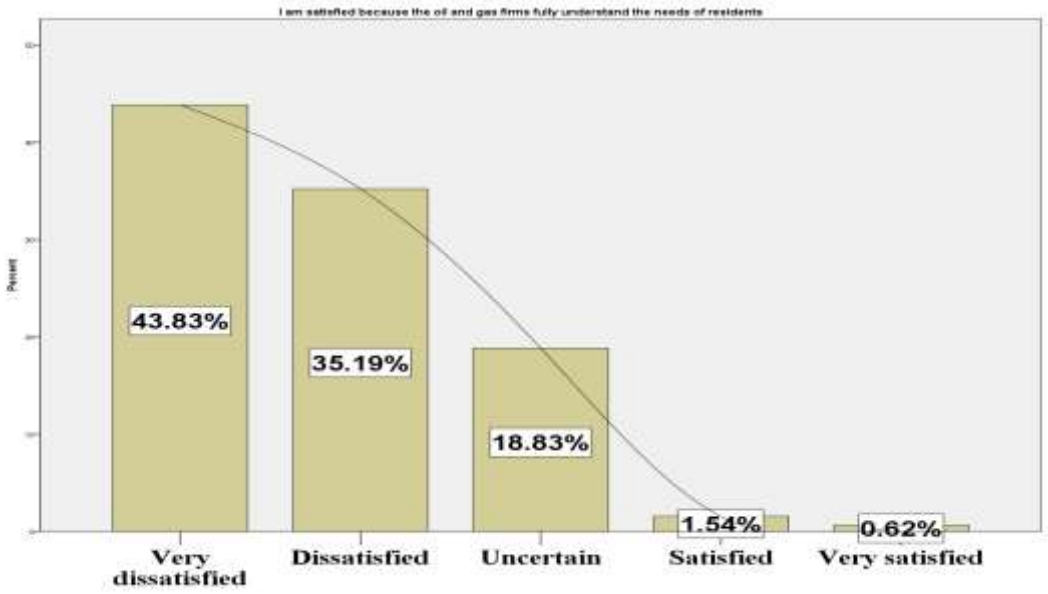

Figure 6: Perceived Satisfaction with Oil and Gas Firms' Ability to Identify the Residents' Needs to Improve Earning Capacities
Source: Field work (2020)

In relation to whether respondents are satisfied with assistance they receive from oil and gas firms in the sustenance and creation of both existing and alternate livelihoods, majority (140) of the respondent were representing 43.2 % respectively were both very dissatisfied and dissatisfied. This was followed by 6.5% who remained neutral, 5.6% were satisfied and finally 1.5% were very satisfied. This implies that, the magnitude and kind of support that oil and gas firms extend to the affected communities regarding their livelihoods

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

determines the level of satisfaction of residents towards their operations. Some respondents said that;

"*the livelihood assistance we get from these petroleum firms are not adequate and does not always commensurate with what we need, which is difficult for us".*

The result of this statement was presented in Figure 7.

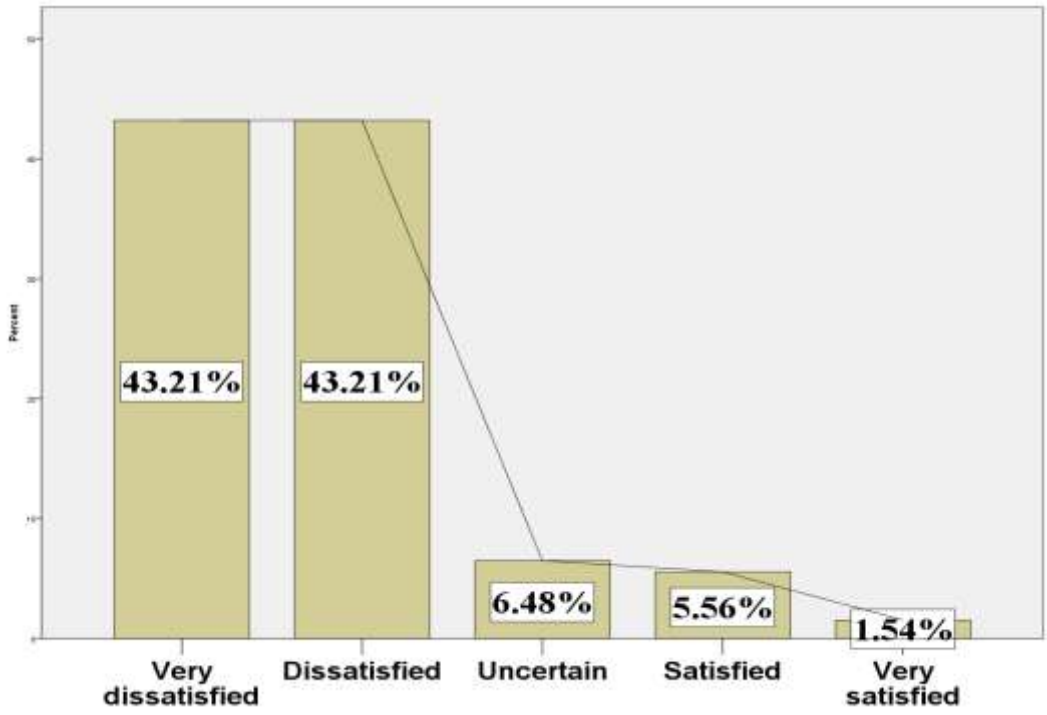

Figure 7. Perceived Satisfaction with the Livelihood Assistance Received from Oil and Gas Firms
Source: Field work (2020)

In relation to respondents' perception on the statement, " I am satisfied because the employees of oil and gas firms have the capacity to build trust and confidence among resident", majority (179) of the respondents representing 55.2% were very dissatisfied with this statement, 26.2% were dissatisfied, 10.8% remained unbiased, 6.5% were satisfied while 1.2% were very satisfied. This shows that resident perceive the operations of oil and gas firms to be

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

unsatisfactory when employees of oil and gas firms are incapable of building trust and confidence among residents. The result was presented in Figure 8.

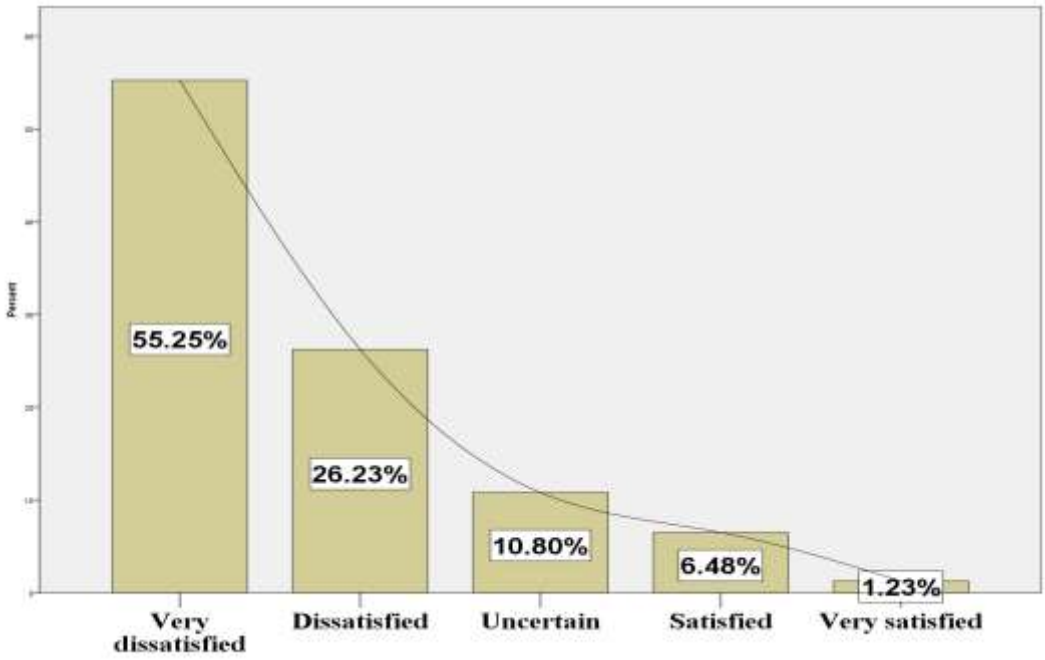

Figure 8: Perceived Satisfaction with Attitudes of Employees of Oil and Gas Firms
Source: Field work (2020)

Also, majority (155) of the respondents representing 47.8% were very dissatisfied with the statement, "The appealing nature of the operation of oil and gas firms to protect the environment make me satisfied". This was followed by 36.7% who were dissatisfied, 11.4% remained uncertain, 3.4% were satisfied and finally 0.6% were very satisfied. The implication of this result was that, the manner in which oil and gas firms conducted their operations was not attractive enough to create conducive environment for other businesses to thrive, therefore, residents feel dissatisfied with their operations. One respondent reported that;

"The way and manner in which these firms carry out their activities is not good at all because there are ways in which they can mitigate the adverse

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

effects of their activities but they do not; for instance the production of gas in this community has made my land infertile causing massive destruction to my coconut farm. This makes me feel dissatisfied on how they carry out their activities".

It is to note that the result was presented in Figure 9.

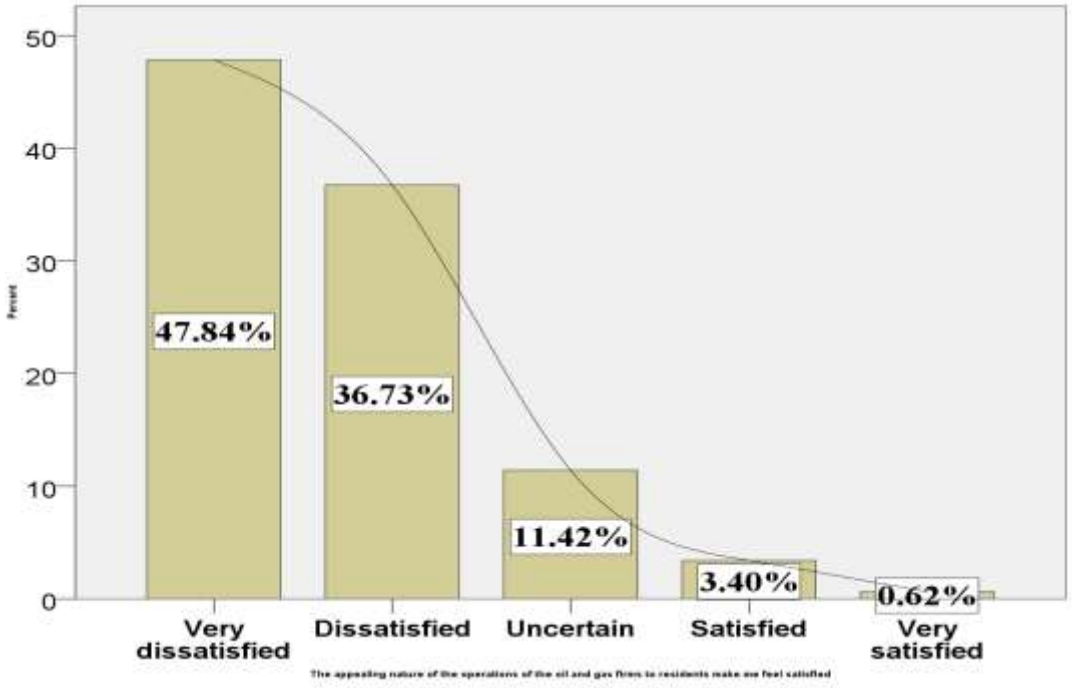

Figure 9: Perceived Satisfaction with Appealing Nature of Oil and Gas Operations
Source: Field work (2020)

Furthermore, in terms of respondents on the statements, "The physical operations of the oil and gas firms do not affect the quality of life of residents", majority (172) of the respondents representing 53.1% were satisfied with this statement, 22.8% were very satisfied, 9.6% were uncertain, 8.0% were dissatisfied while 6.5% were very dissatisfied. This implies that, residents perceived that the operations of oil and gas firms have affected both their material and non-material wellbeing. The result was graphically displayed in Figure 10.

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

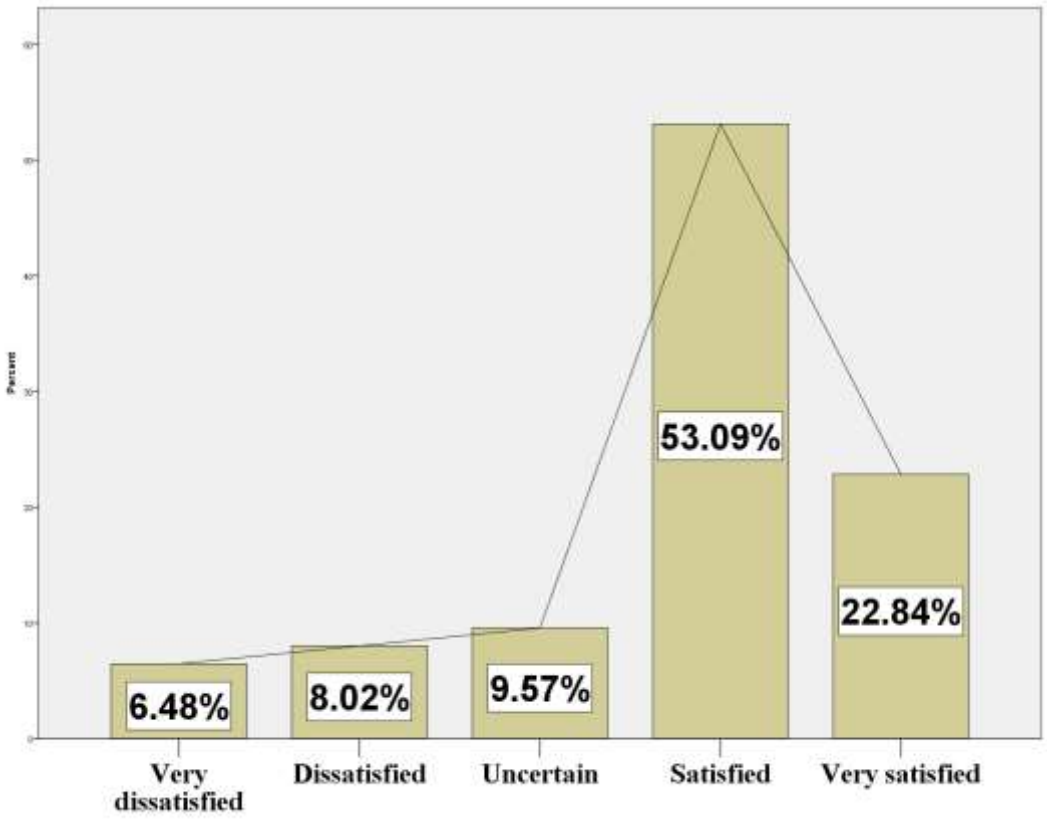

Figure 10: Perceived Satisfaction because Oil and Gas Operations Promote Quality of Life
Source: Field work (2020)

Table 9 also revealed that, majority (119) of the respondents representing 36.7% were dissatisfied to the statement, ".... The existence of the oil and gas firms create more employment avenues for residents", this was followed by 24.1% who were very dissatisfied with this statement, 20.4% were uncertain thus remained neutral, 9.6% were satisfied while 9.3% were very satisfied. This implies that, limited opportunities in terms of employment and other related investment opportunity are created by oil and gas firms since the emergence of their operations in their communities, therefore, residents feel dissatisfied with the operations of oil and gas firms. This finding was also presented in Figure 11.

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

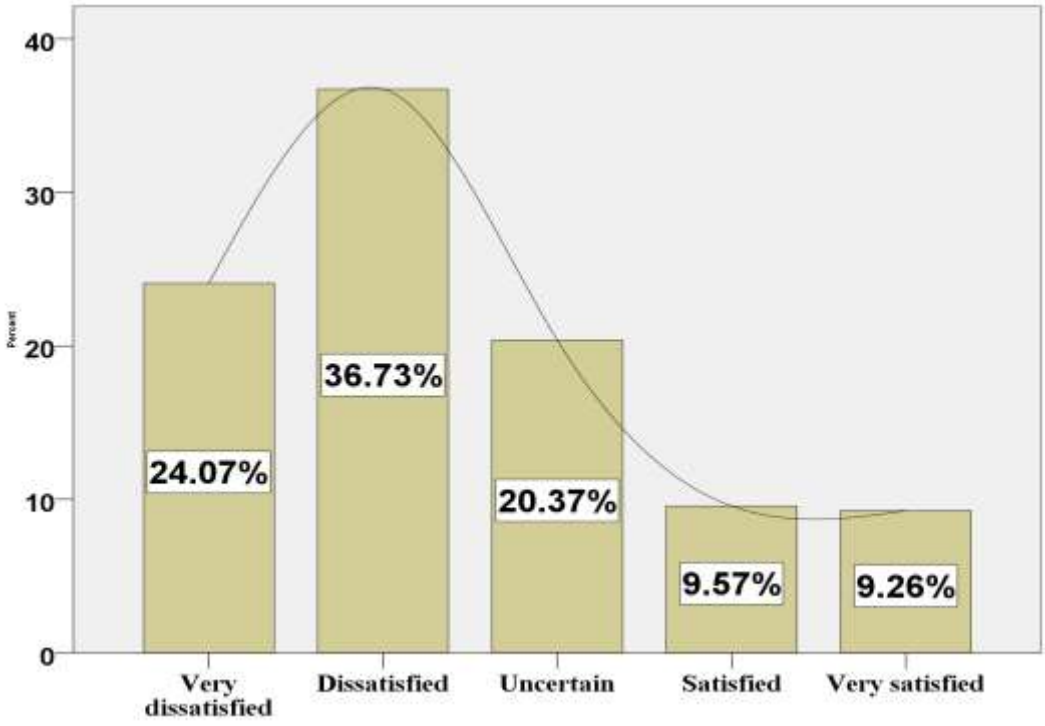

Figure 11: Perceived Satisfaction with Job Opportunities provided by Oil and Gas Firms
Source: Field work (2020)

The findings of Biesok and Wyród-Wróbel (2011), Agi (2016), Khadka and Maharjan (2017), confirm the level of satisfaction of residents towards oil and gas firms. For instance, these findings are in line with Khadka and Maharjan (2017) who confirmed that residents of Yemen had low satisfaction towards oil and gas companies has created little or no opportunities in terms of employment. Also, Agi (2016), found that perceived satisfaction is based on transparent operations, adherence to community participation and transparent partnerships without exposing indigenes to issues of which could affect quality of life.

From the above, residents generally have low satisfaction towards oil and gas operations because their needs are not really understood by the firms, there are limited opportunities in both oil and non-oil sectors, there is no

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

improvement in their well-being and finally are not willing improve upon their activities.

Chapter Summary

This chapter presented the results and discussion of the study's data in relation to the objectives. The chapter also presented key demographic features of the respondents in relation to sex, age, marital status, educational qualification and length of stay in the respective communities. Specifically, the chapter presented discussion in relation to residents perceived economic and socio-cultural impact of the oil and gas operations. Finally, the chapter discussed the various factors that make them feel satisfied with the oil and gas operations. The next chapter presents the study's summary, conclusions and recommendations.

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Introduction

This chapter presents the summary of the main findings, conclusions drawn from the findings and recommendations for policy consideration and suggestions for further research.

Summary

The purpose of the study was to examine the perceived economic and socio-cultural impacts as well as resident's satisfaction of the oil and gas operations in the three selected communities in the Ellembelle District of the Western Region of Ghana. Specifically, the following objectives were developed to:

1. Assess the perceived impact of oil and gas operations on the economic livelihood of residents in the Ellembelle District of the Western Region.
2. Assess the perceived impact of oil and gas operations on the socio-cultural livelihood of residents in the Ellembelle District of the Western Region.
3. Assess perceived residents' satisfaction with the oil and gas operations in the Ellembelle District of Ghana.

The study employed the mixed method approach and the descriptive analytical research design due to the purpose of the study. Structured questionnaire was used to solicit for data from a randomly sampled 350 respondents in the target population. However, 324 out of the total (350) questionnaires were reliable for the study and hence obtained a response rate of

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

92.57 percent. Additionally, confirmatory interviews were conducted with some key stakeholders in the study area to confirm the responses obtained by the questionnaire. Data obtained was processed using IBM Statistical Package for Social Sciences (SPSS) version 22 and analysed using descriptive tools such as means, standard deviations, frequencies and percentages. Also factor analysis was carried out on the indicators to determine the sampling adequacy of the perceived factors. The findings were presented in tables and figures and discussed in Chapter four. The next section presents the summary of key findings of the study.

Key Findings

This study provided an overview and pertinent discussion on the perceived socio-economic impacts of oil and gas operations within academic literature. The findings of this study have brought to bear relevant information that could inform policies. The following were the major findings of the study:

In relation to the first objective on the perceived economic impacts of oil and gas operations, the study found that majority of the residents held negative perception about the impact of oil and gas operations on their economic wellbeing. This is because majority of residents agreed that oil and gas operation has brought about housing shortages, reduced standard of living, and lower income earnings. This implies that, economic wellbeing of citizens is positively impacted when housing facilities are made affordable, their standard of living is raised and individuals earn higher incomes. On the other hand, the study found that customer base for products was the least impacted by oil and gas operations.

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

With regards to the second research objective on the perceived socio-cultural impacts of oil and gas operations, the study found that majority of the respondents held negative perception about oil and gas operations on their socio-cultural wellbeing in the Ellembelle District of Ghana. This is because majority of the respondents agreed that the commencement of oil and gas operations in the district has resulted in threats in the safety and quality of ecological life, loss of livelihood, high resource related disputes and increased social vices. This implies that, the socio-cultural wellbeing of residents has been negatively affected by the oil and gas operation and this has affected their quality of life and hence restricted development in their communities.

Finally, the third research objective focused on the perceived satisfaction of residents towards oil and gas operations in the Ellembelle District of Ghana. The study found that majority of the residents were not satisfied with the operations of oil and gas firms in their communities. This is because most residents perceived that oil and gas firms are not willing to improve upon their operations to meet their health and safety needs, are not given preferential treatment in terms of the provision of social amenities and support, are not ready to understand their need. This has heavily impacted their quality of life and does not create more opportunities for them to take advantage of. Thus, any improvement in oil and gas operations in the community will lead to improved satisfactions of residents in the district.

Conclusions

This study provided an overview and relevant literature on oil and gas operations on perceived economic and socio-cultural wellbeing within academic literature. It has brought to bear significant information that could

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

inform policies in relation to economic and socio-economic wellbeing of residents in the Ellembelle District in the Western Region of Ghana who are experiencing the direct, indirect and induced impacts of oil and gas operations. Based on the findings of the study, the following conclusions have been drawn:

The study concluded that resident perceive their economic wellbeing not to commensurate with the key elements. The perceived economic quality of life of residents is primarily centred on its ability to afford housing facilities, improve standard of living, increase market connectivity, take advantages of investment opportunities, thrive in business environment and enjoy increment in sales margin and household income. These elements are the success indicators to achieve economic wellbeing and thus are of keen interest to all stakeholders especially the impacted communities. The study's result supports previous empirical studies that indicated that, residents mostly have negative perception of oil and gas discovery if its nature does not meet the requirement of the listed key indicators. This implies that considering the economic wellbeing without opaque content could change the perception of residents and in turn positively affect their overall quality of life.

Secondly, the study concluded that, residents could have positive perception towards oil and gas operation if its purpose is to meet their expectations. Thus, residents expect oil and gas operations to improve their perceived socio-cultural wellbeing by improving their livelihoods, educational and social amenities, moral standards and safety. Moreover, the residents agreed that with the commencement of operations of oil and gas firms in their communities, their environmental quality will be protected, health hazards from the operations will be reduced to the barest minimum and they will be

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

effectively engaged in the decision-making process involving their wellbeing. The study's result support previous empirical studies that indicated that, residents could have positive perception of oil and gas operations on socio-cultural wellbeing if these key requirements are met.

Finally, the study concluded that, the perceived residents' satisfaction with oil and gas operation to be generally unsatisfactory. The overall efficiency of oil and gas operation is dependent on the perceived satisfaction of residents. The study's results are in line with empirical studies that indicate that stakeholders' satisfaction with the operations of oil and gas firms is relevant. Failure to satisfy residents could result in resentment towards the operation of oil and gas firms.

Recommendations

The following recommendations were made depending on the strength of the research findings and the conclusions made. The following recommendations made include;

1. Oil and gas firms should be mandated by the Government of Ghana and the traditional authorities to enter into formal negotiations such as Community Development Agreements (CDAs) with host communities to ensure that host communities derive utmost benefits from the activities of these firms. CDAs are considered as an integral part of promoting sustainable community development by defining investor commitment to issues such as local employment, impact mitigation and benefit sharing. Also, they are seen as investments that create essential wealth and strengthen local economy

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

2. Government authorities and oil and gas firms should adopt more microeconomic strategies such as the Sustainable Alternative Livelihood Programme to make the local economic system more purposeful and also sustain residents in these communities
3. Oil and gas firms being key stakeholders should be encouraged to adopt Sustainable Livelihood agreement as part of their employment agreement so that any form of alternate livelihood provided by them can be deemed as another source of income to the residents of the host communities.
4. The operations of oil and gas firms should be periodically reviewed in a bid to make the operations more innovative and generally acceptable. The periodic review could be done on yearly basis to meet changing trends. This would help obtain maximum satisfaction of residents with the oil and gas operations.
5. Finally, training and workshop programmes should be organized to sensitize residents on the positive and negative economic impacts of oil and gas operations such as local economic shocks. This could help reduce subjective negative perception and ensure constant interaction between authorities and the local residents.

Suggestions for Further Research

Although the study provided useful insights into the perception of residents in the hydrocarbons industry context, the results cannot be generalized to the entire oil and gas industry in Ghana. This is because, the study focused on perception of residents in only three communities (Sanzule, Asemduazo and Atuabo) and thus their perception does not reflect the general state of affairs

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

across other oil and gas firms. The study therefore recommends that future research should be conducted on a broader scale by including other oil and gas firms in the industry and country and also, the perceived environmental impacts of oil and gas activities in the Ellembelle District of Ghana.

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

REFERENCES

Ablo, A. D., & Asamoah, V. K. (2018). Local participation, institutions and land acquisition for energy infrastructure: The case of the Atuabo gas project in Ghana. *Energy Research and Social Science*, *41*, 191-198.

Acquah-Andoh, E., Gyeyir, D. M., Aanye, D. M., & Ifelebuegu, A. (2018). Oil and gas production and the growth of Ghana's economy: An initial assessment. *International Journal of Economics and Financial Research*, *4*(10), 303-312.

Acquah-Sam, E. (2014). Economic effects of oil and gas production and activities. *Educational and psychological measurement*, *30*(3), 607-610.

Adeyemo, A. M. (2002). The oil industry extra-ministerial institutions and sustainable agricultural development: A case study of Okrika LGA of rivers state. *Nigerian Journal of Oil and Politics*, *2*(1), 60-78.

Adusah-Karikari, A. (2015). Black gold in Ghana: Changing livelihoods for women in communities affected by oil production. *The Extractive Industries and Society*, *2*(1), 24-32.

Agbogidi, O. M., Okonta, B. C., & Dolor, D. E. (2005). Socio–economic and environmental impact of crude oil exploration and production on agricultural production: A case study of Edjeba and Kokori communities in Delta State of Nigeria. *Global Journal of Environmental Sciences*, *4*(2), 171-176.

Agi, M. E. (2016). *Linking host community satisfaction to operational performance in the oil and gas industry*. Unpublished Doctoral dissertation, Brunel University London.

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

Agrawal, A., & Gibson, C. C. (1999). Enchantment and disenchantment: the role of community in natural resource conservation. *World Development, 27*(4), 629-649.

Akabazaa, T., & Darimani, A. (2001). *Impact of mining sector investment in Ghana: Study of Tarkwa mining region*. Draft Report Prepared for SAPRI.

Akabzaa, T. M. (2000). *Boom and dislocation: The environmental and social impacts of mining in the Wassa West district of Ghan*a. Accra: Third World Network.

Akakpo, G. S. (2012). Social impact assessment of oil and gas exploration in the western region of Ghana: A case study of Sekondi/Takoradi Metropolis. *Regional Maritime University Journal, 2*, 44-62.

Amadi, E. C., & Tamuno-Ngo, T. (2018). A Review of oil exploitation and exploration and sustainable community development in Kula Kingdom of Rivers State. *International Journal of Innovative Environmental Studies Research, 6*(1), 4-9.

Amoasah, G. (2010). *The potential impacts of oil and gas exploration and production on the coastal zone of Ghana: An ecosystem services approach*. Unpublished master's thesis, Wageningen University, Wageningenur.

Annan, N., & Edu-Afful, F. (2015). *Confronting the oil curse: State-civil society roles in managing Ghana's oil find*. SAIIA Occasional Paper.

Aratuo, I. Z. (2012). *Ghana's oil industry: The state of craters and local frontier communities.* Unpublished Doctoral dissertation, University of Ghana.

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

Aryeetey, E., & Asmah, E. (2011). *Africa's new oil economies: Managing expectations in foresight Africa*. Retrieved from http://www.brookings.edu.

Attah, A. (2018). *The impact of oil exploitation on a Ghanaian fishing community*. Unpublished doctoral dissertation, Cardiff University.

Aubell, H. S. J., & Mensah, H. K. (2007). *Natural resource exploitation, environment and poverty: Linkages and impact on rural households in Asutifi District in Ghana*. Unpublished master's thesis, HøgskoleniAgder.

Babalola, J. B. (2010). Education, Technology and innovation for global competitiveness: Evidence from Ghana and Nigeria. *Journal of Capital Development in Behavioural Sciences*, *6*(2), 62-88.

Badgley, C. (2011). *Fishing and the offshore oil industry: A delicate imbalance*. Retrieved from http://www.iwatchnews.org/fishing-and-offshore-oilindustry-delica.

Balasubramanian, K. (2010). *Supply chain management in oil downstream distribution business: a perspective on IT alternatives and issues*. Retrieved from: http://www.infosys.com.

Bank of Ghana (2009). *Bank of Ghana annual report*. Retrieved from: https://www.bog.gov.gh/publications/annual-report.

Baran, P. (1957). *Political economy of growth*. New York: Review Press.

Bayode, O. J. A., & Adewunmi, E. A. (2011). Environmental implications of oil exploration and exploitation in the coastal region of Ondo State, Nigeria: A regional planning appraisal. *Journal of Geography and Regional Planning*, *4*(3), 110-121.

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

Biesok, G., & Wyród-Wróbel, J. (2011). Customer satisfaction-Meaning and methods of measuring. *Marketing and Logistic Problems in the Management of Organization (June)*, 23-41.

Blank, R. M. (2008). Presidential address: How to improve poverty measurement in the United States. *Journal of Policy Analysis and Management: Association for Public Policy Analysis and Management*, *27*(2), 233-254.

Boateng, S. K. (2010). *Addressing the challenges facing the fishing industry*. Retrieved from http://news.myjoyonline.com/news

Boohene, R., & Peprah, J. A. (2012). Correlates of revenue among small scale women fish processors in coastal Ghana. *Journal of Sustainable Development*, *5*(10), 28-39.

Bradshaw, T. K. (2007). Theories of poverty and anti-poverty programs in community development. *Community Development*, *38*(1), 7-25.

Bradshaw, T. K., King, J. R., & Wahlstrom, S. (1999). Catching on to clusters. *Planning*, *65*(6), 18-21.

British Broadcasting Corporation (BBC) news Africa (2011). *Ghana profile*. Retrieved from http:/www.bbc.co.uk/news/world-africa

Bryson, J. M. (2004). What to do when stakeholders matter: Stakeholder identification and analysis techniques. *Public Management Review*, *6*(1), 21-53.

Buchanan, D., & Bryman, A. (2009). *The Sage handbook of organisational research methods*. Sage Publications Ltd.

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

Cavaye, J., & Ross, H. (2019). Community resilience and community development: What mutual opportunities arise from interactions between the two concepts? *Community Development*, *50*(2), 181-200.

Cernea, M. M. (2006). Development-induced and conflict-induced IDPs: Bridging the research divide. *Forced Migration Review*, *261*, 25-27.

Chima, C. M. (2007). Supply-chain management issues in the oil and gas industry. *Journal of Business and Economics Research (JBER)*, *5*(6), 27-36.

Chindo, M. I. (2011). Communities perceived socio-economic impacts of oil sands extraction in Nigeria. *Journal* of *Studies* and *Research* in *Human Geography*, *5*(*2)*, 69-77.

Cochran, W. G., & Rubin, D. B. (1973). Controlling bias in observational studies: A review. *Sankhyā: The Indian Journal of Statistics, Series A*, 417-446.

Coudouel, A., & Hentschel, J. (2000). *Poverty data and measurement*: *World bank, poverty reduction strategy sourcebook*. Retrieved from http://www.worldbank.org/poverty.

Creswell, J. W. (2009). Mapping the field of mixed methods research. *Journal of Mixed Methods Research*, *3*(2), 95-108.

Cunningham, A. B. (1989). *Indigenous plant use: balancing human needs and resources*. Oxford: Oxford University Press.

Dah, F. K., & Sulemana, M. (2010). *The contribution of oil to the economic development of Ghana: The role of foreign direct investments (FDI) and government policies*. Retrieved from http://www.diva-portal.org/smash/get/diva2:331510/fulltext01.pdf

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

Darby, M. R. (1996). *Reducing poverty in America: Views and approaches*. Thousand Oaks: Sage Publications.

Darkwah, A. K. (2010). *The impact of oil and gas discovery and exploration on communities with emphasis on women*. Unpublished master's thesis, University of Ghana.

David, P. A. (1997). *Path dependence and the quest for historical economics: One more chorus of the ballad of QWERTY*. Oxford: Nuffield College.

Donaldson, T., & Preston, L. E. (1995). The stakeholder theory of the corporation: Concepts, evidence, and implications. *Academy of Management Review, 20*(1), 65-91.

Downing, T. E., Moles, J., McIntosh, I., Garcia-Downing, C. (2002). *Indigenous peoples and mining encounters: Strategies and tactics*. International Institute for Environment and Development-World Business Council for Sustainable Development, Working Paper no. 57, April 2002, pp. 20

Ebegbulem, J. C., Ekpe, D., & Adejumo, T. O. (2013). Oil exploration and poverty in the Niger delta region of Nigeria: A critical analysis. *International Journal of Business and Social Science, 4*(3), 279-287.

Effiong, J. (2010). *Oil and gas industry in Nigeria: The paradox of the black gold*. London: Emerald Group Publishing Limited.

Egyir, I. K. (2012). *The impacts of oil and gas activities on fisheries in the western region of Ghana*. Unpublished master's thesis, Universitetet i Tromsø.

Ellimah, R. (2009). *Ghana, oil, development, Exxon, and the Chinese*. Retrieved from crossedcrocodiles.wordpress.com/category/ghana-oil.

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

Eregha, P. B., & Irughe, I. R. (2009). Oil induced environmental degradation in the Nigeria's Niger-Delta: The multiplier effects. *Journal of Sustainable Development in Africa*, *11*(4), 160-175.

Etzioni, A. (1996). The responsive community: A communitarian perspective. *American Sociological Review*, 1-11.

Eyiah-Botwe, E. (2015). Assessing housing project end-users satisfaction in Ghana: A case study of SSNIT Housing Flats in Asuoyeboa-Kumasi. *Civil and Environmental Research*, *7*(3), 13-23.

Fabi, G., Grati, F., Puletti, M., & Scarcella, G. (2004). Effects on fish community induced by installation of two gas platforms in the Adriatic Sea. *Marine Ecology Progress Series*, *2*(73), 187-197.

Fanchi, J. R., & Christiansen, R. L. (2017). *Introduction to petroleum engineering*. New Jersey: John Wiley.

Flora, C. B., & Flora, J. L. (1993). Entrepreneurial social infrastructure: A necessary ingredient. *The Annals of The American Academy of Political and Social Science*, *529*(1), 48-58.

Fontaine, C., Haarman, A., &Schmid, S. (2006). The stakeholder theory. *Edlays Forum for Social Economics*, 44(3), 234-250.

Food and Agriculture Organisation Report (2004). *The state of food and agriculture*. Accra, Ghana: FAO

Freeman, R. E. (2010). Divergent stakeholder theory. *Academy of Management Review*, *24*(2), 233-236.

Freeman, R. E., Harrison, J. S., & Wicks, A. C. (2007). *Managing for stakeholders: Survival, reputation, and success*. Yale University Press.

Friedman, M. (2017). *Price theory*. New York: Routledge.

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

Gellert, P. K., & Lynch, B. D. (2003). Mega-projects as displacements. *International Social Science Journal*, *55*(175), 15-25.

Ghana. Statistical Service (2013). *2010 population and housing census: National analytical report*. Accra: Ghana Statistics Service.

Girod, D. (2015). *Explaining post-conflict reconstruction*. Oxford: Oxford University press.

Ghana National Petroleum Corporation (2011): *Ghana National Petroleum Corporation* Retrieved from http://www.gnpcghana.com

Gravetter, F. J., & Forzano, L. A. B. (2011). Research methods for the behavioural sciences. *Stamford*, 147-148.

Gutti, B., Aji, M. M., & Magaji, G. (2012). Environmental impact of natural resources exploitation in Nigeria and the way forward. *Journal of Applied technology in Environmental Sanitation*, *2*(2), 95-102.

Gyan, S. E., & Asante, R. K. (2017). Mapping out the role of labor migrants in Ghana's oil and gas economy. *Migration and Development in Africa: Trends, Challenges, and Policy Implications*, 183.

Harrison, J. S., & Bosse, D. A. (2013). How much is too much? The limits to generous treatment of stakeholders. *Business Horizons*, *56*(3), 313-322.

Harrison, J. S., Bosse, D. A., & Phillips, R. A. (2010). Managing for stakeholders, stakeholder utility functions, and competitive advantage. *Strategic Management Journal*, *31*(1), 58-74.

Harrison, J. S., Freeman, R. E., & Abreu, M. C. S. D. (2015). Stakeholder theory as an ethical approach to effective management: Applying the theory to multiple contexts. *Revista Brasileira De Gestão De Negócios*, *17*(55), 858-869.

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

Harrison, J. S., Freeman, R. E., & Abreu, M. C. S. D. (2015). Stakeholder theory as an ethical approach to effective management: Applying the theory to multiple contexts. *Revista Brasileira De Gestão De Negócios*, *17*(55), 858-869.

Heller, P. R., & Heuty, A. (2010). Accountability mechanisms in Ghana's 2010 proposed oil legislation. *The Ghana Policy Journal*, *4*(1), 50-67

Hermas, A. (2016). *Assessment of socio-economic and environmental impacts of oil and gas operations: A case study of the host communities under Western and Central coastlines of Ghana*. Unpublished dissertation, Kwame Nkrumah University of Science and Technology, Kumasi.

Hurtig, A. K., & Sebastián, M. (2002). Geographical differences in cancer incidence in the Amazon basin of Ecuador in relation to residence near oil fields. *International Journal of Epidemiology*, *31*(5), 1021-1027.

Idumah, F. O., & Okunmadewa, F. Y. (2013). Oil pollution and technical efficiency of food crop farmers in the Niger Delta region of Nigeria. *Journal of Development and Agricultural Economics*, *5*(12), 519-526.

Iheriohanma, V. I. (2016). *Environmental impact assessment of oil and gas industry in Niger Delta, Nigeria: A critical environmental and legal framework assessment*. Unpublished master's thesis, Dalhousie University Halifax, Nova Scotia.

Ikechukwu, M. (2012). *Community perception of environmental and socio-economic impact of oil exploration: A case study of Niger Delta*. Niger.

Ikejiaku, B. V. (2009). The concept 'poverty' towards understanding in the context of developing countries 'poverty qua poverty'. *Journal of Sustainable Development*, *2*(2), 3-13.

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

Ikelegbe, A. (2005). Engendering civil society: Oil, women groups and resource in the United States. *Journal of Policy Analysis and Management: The Journal of the Association for Public Policy Analysis and Management*, *27*(2), 233-254.

Integrated Social Development Centre (2009). *Concerns of Western Region on the oil find*. Retrieved from http://www.isodec.org.gh/press_release.php?idprelease=44.

Johnson, R. B., & Onwuegbuzie, A. J. (2004). Mixed methods research: A research paradigm. *Educational Researcher*, *33*(7), 14-26.

Kadafa, A. A. (2012). Environmental impacts of oil exploration and exploitation in the Niger Delta of Nigeria. *Global Journal of Science Frontier Research Environment & Earth Sciences*, *12*(3), 19-28.

Kadafa, A. A. (2012). Oil Exploration and Spillage in the Niger Delta of Nigeria. *Civil and Environmental Research*, *2*(3), 38-51.

Kaku, A. (2018). *The socio-economic impact of oil and gas discovery in the Ellembelle District of Ghana*. Unpublished doctoral dissertation, University of Ghana, Legon, Ghana.

Karlsen, A., & Lindeløv, B. (2005). Towards understanding proximity, distance and diversity in economic interaction and local development. *Issues on Economic Interaction and Local Development*, 307-332.

Kellert, S. R., Mehta, J. N., Ebbin, S. A., & Lichtenfeld, L. L. (2000). Community natural resource management: promise, rhetoric, and reality. *Society and Natural Resources*, *13*(8), 705-715.

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

Khadka, K., & Maharjan, S. (2017). Customer satisfaction and customer loyalty. *Centria University of Applied Sciences, Business Management, 3*(7), 56-68.

Krejcie, R. V. & dan Morgan, DW (1970). *Determining sample size for research education and psychological measurement.* New York, USA: Pearson Education.

Larsen, E. R. (2004). *Escaping the resource curse and the Dutch Disease? when and why Norway caught up with and forged ahead of its neighbors*. New York, USA: Pearson Education.

Le Billon, P. (2001). The political ecology of war: natural resources and armed conflicts. *Political Geography*, *20*(5), 561-584.

Lee, D., & Neves, B. (2009). *Rural poverty and natural resources: Improving access and sustainable management.* Food and Agriculture Organisation of the United Nations (FAO), Rome, Italy.

Legido-Quigley, H. (2003). *The South African old age pension: Exploring the role on poverty alleviation in households affected by HIV/AIDS*. Paper submitted to the 4th International Research Conference on Social Security: Social security in a long-life society.

Leke, A., Lund, S., Roxburgh, C., & van Wamelen, A. (2010). *What's driving Africa's growth*. Retrieved from https://www.mckinsey.com/featured-insights/middle-east-and-africa

Lewin, G. (2003). Managing the downstream oil supply chain: A customer-led strategy. *World Energy*, 22-25.

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

Makasi, A., Govender, K., & Munyoro, T. (2014). The effects of corporate social responsibility on corporate brand positioning. *Mediterranean Journal of Social Sciences, 5*(20), 25-97.

Malhotra, N., & Birks, D. (2007). *Marketing research: An applied approach* (3rd ed.). London: Pearson Education.

Manu, D. A. K. (2011). *The emerging oil industry in Ghana: Socio-economic and environmental impact on the people of Cape three points*. Unpublished master's thesis, Norwegian University of Life Sciences.

Mariki, S. W., Shechambo, F., & Salehe, J. (2003). *The contribution of environmental goods and services to Tanzania's economy: with reference to poverty reduction*. IUCN-EARO, Nairobi.

Mayhew, S. (2015). *A dictionary of geography*. Oxford: Oxford Press.

Miles, S. (2012). Stakeholder: Essentially contested or just confused? *Journal of Business Ethics*, *108*(3), 285-298.

Millennium Ecosystem Assessment (2015). *Ecosystems and human well-being*. Washington, DC: Island Press.

Milupi, I. D., Somers, M. J., & Ferguson, J. W. H. (2017). *A review of community-based natural resource management. Applied Ecology and Environmental Research, 15*(4), 1121-1143.

Ministry of Energy (2010). *Local content and local participation in petroleum activities-policy framework*. Accra: Ministry of Energy.

Morrill, R. W. (1971). The geography of poverty in the United States. *Academy of Political and Social Science*, 26–47.

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

Nanok, J. K., & Onyango, C. O. (2017). A socio-economic and environmental analysis of the effects of oil exploration on the local community in Lokichar, Turkana County, Kenya. *International Journal of Management, Economics and Social Sciences (IJMESS)*, *6*(3), 144-156.

Notten, G., & De Neubourg, C. (2011). Monitoring absolute and relative poverty: "Not enough" is not the same as "much less". *Review of Income and Wealth*, *57*(2), 247-269.

Obenade, M., & Amangabara, G. T. (2014). The socioeconomic implications of oil theft and artisanal refining in the Niger Delta Region of Nigeria. *International Journal of Science and Research*, *3*(7), 2390-2394.

Obeng-Odoom, F. (2014). Measuring what success and failure in Ghana's oil industry. *Society and Natural Resources*, *27*(6), 656-670.

Obeng-Odoom, F. (2014). *Oiling the urban economy: Land, labour, capital, and the state in Sekondi-Takoradi, Ghana*. London: Routledge.

Obeng-Odoom, F. (2015). Africa: On the rise, but to where? *Forum for Social Economics*, *44*(3), 234-250.

Ofuoku, A. O. U., Emuh, F. N., & Ezeonu, O. (2014). Social impact assessment of crude oil pollution on small scale farmers in oil producing communities of the central agricultural zone of Delta State, Nigeria. *Asian Journal of Agriculture and Rural Development*, *4*, 233-241.

Okoye, E. I., Akenbor, C., & Enaini, S. O. (2010). Oil and gas production and the socio-economic development of the Niger-Delta region of Nigeria. *International Journal of Sustainable Development*, *3*(5), 90–104.

Oliver, R. L. (2010). *Customer satisfaction*. Wiley International Encyclopedia of Marketing.

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

Olowa, O. W. (2012). Concept, measurement and causes of poverty: Nigeria in perspective. *American Journal of Economics, 2*(1), 25-36.

Omorede, C. K. (2014). Assessment of the impact of oil and gas resource exploration on the environment of selected communities in Delta State, Nigeria. *International Journal of Management, Economics and Social Sciences*, *3*(2), 79-99.

Omorodion, F. I. (2004). The impact of petroleum refinery on the economic livelihoods of women in the Niger Delta region of Nigeria. *JENDA: A Journal of Culture and African Women Studies*, *6*, 1-15.

Owusu-Ansah, M. (2012). *Risks and impacts of oil exploration and production on local communities in the western region of Ghana*. Unpublished master's thesis, Saint Mary's University, Halifax Nova Scotia.

Ozumba, G. O. (1997). *Nigeria government and politics*. Lagos: Vitalis Books.

Parmar, B. L., Freeman, R. E., Harrison, J. S., Wicks, A. C., Purnell, L., & De Colle, S. (2010). Stakeholder theory: The state of the art. *Academy of Management Annals*, *4*(1), 403-445.

Patey, L. (2017). *A belated boom: Uganda, Kenya, South Sudan, and prospects and risks for oil in East Africa.* Oxford Institute for Energy Studies.

Peprah, J. A. (2011). Women, livelihood and oil and gas discovery in Ghana: An exploratory study of Cape Three Points and surrounding communities. *Journal of Sustainable Development*, *4*(3), 185-197.

Petrova, S., & Marinova, D. (2013). Social impacts of mining: Changes within the local social landscape. *Rural Society*, *22*(2), 153-165.

Plänitz, E., & Kuzu, D. (2015). *Oil production and the transformation of livelihoods of communities in Ghana*. Ghana Press.

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

Quayson, F. A. (2012). *Oil City? The role of Sekondi–Takoradi in Ghana's emerging oil industry.* Unpublished master's thesis, Norges teknisk-naturvitenskapelige universitet, Fakultet for samfunnsvitenskap og teknologiledelse, Geografisk institutt).

Rahman, M. (2004). *Oil and gas: The engine of the world economy*. OPEC Speeches, 1 Vienna Austria 10–11.

Reed, M. S. (2008). Stakeholder participation for environmental management: A literature review. *Biological Conservation*, *141*(10), 2417-2431.

Rew, A., Fisher, E., & Pandey, B. (2000). *Addressing policy constraints and improving outcomes in development-induced displacement and resettlement projects*. Unpublished report, Refugee Studies Centre, University of Oxford.

Robinson, W. C. (2003). *Risks and rights: The causes, consequences, and challenges of development-induced displacement*. Occasional Paper.

Rosser, A. (2006). The political economy of the resource curse: A literature survey. Brighton: IDS

Sachs, J. D., & Warner, A. M. (2001). The curse of natural resources. *European Economic Review*, *45*(4-6), 827-838.

Sameti, M., Esfahani, R. D., & Haghighi, H. K. (2012). Theories of poverty: A comparative analysis. *Kuwait Chapter of Arabian Journal of Business and Management Review*, *33*(835), 1-16.

Saunders, M., Lewis, P., & Thornhill, A. (2007). *Research methods for Business Students* (4th ed.). London, England: Pearson Education Limited.

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

Songorwa, A. N. (1999). Community-based wildlife management (CWM) in Tanzania: Are the communities interested? *World Development*, *27*(12), 2061-2079.

Steiner, A., & Oviedo, G. (2004). *Indigenous knowledge and natural resource management*. Indigenous knowledge local pathways to global development: Marking five years of the World Bank Indigenous Knowledge for Development Program, 30-33.

Sudan Tribune (2009). *South Sudan villagers, environment suffer from oil boom*. Retrieved from http://www.sudantribune.com/spip.php?article26231.

Takyiwa, J. A. (2014). *Oil discovery, in-migration and infrastructural challenges in the Sekondi-Takoradi Metropolis*. Doctoral dissertation, University of Ghana, Legon, Ghana.

Tantalo, C., & Priem, R. L. (2016). Value creation through stakeholder synergy. *Strategic Management Journal*, *37*(2), 314-329.

Terminski, B. (2013). *Development-induced displacement and resettlement*: *The state in Sekondi-Takoradi, Ghana*. Routledge.

Theodori, G. L. (2009). Paradoxical perceptions of problems associated with unconventional natural gas development. *Journal of Rural Social Sciences*, *24*(3), 7-15.

Turner, T. E., & Brownhill, L. S. (2005). Nakedness and power. *Canadian Dimension*, *39*(2), 28-35.

United Nations Development Programme (2006). *Human development report 2006: Beyond scarcity: power, poverty and the global water crisis*. New York, USA: Sage Publications.

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

United Nations Conference on Trade and Development (2007). *World investment report: Transnational corporations, extractive industries and development.* Geneva, United Nations.

United Nations Environmental Programme (2009). *From conflict to peacebuilding: The role of natural resources and environment*. UNEP.

United State Agency for International Development (2006). *Issues in poverty reduction and natural resource management*. Washington, DC: USAID.

Uyigue, E., & Agho, M. (2007). Coping with climate change and environmental degradation in the Niger Delta of Southern Nigeria. *Community Research and Development Centre Nigeria (CREDC), 1*, 30-41.

Varia, N. (2013). *What is a house without food? Mozambique's coal mining boom and resettlements*. Human Rights Watch.

Watts, M. (2001). Petro-violence: Community, extraction, and political ecology of a mythic commodity. *Violent Environments*, 189-212.

Williams, M. (Ed.). (2014). *The end of the developmental state?*. Routledge.

World Bank. (2002). *World Bank annual report 2002: Main report (English)*. Washington DC; World Bank.

World Bank (2009). *World Bank annual report 2009: Main report*. Washington DC, USA: World Bank.

World Bank (2014). *LAC poverty and labour brief: Social gains in the balance-A fiscal policy challenge for Latin America and the Caribbean*. Washington DC, USA: World Bank.

World Bank (2018). *World Bank annual report 2018: Main report*. Washington DC, USA: World Bank.

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

World Resource Institute (2005). *The wealth of the poor. Managing ecosystems to fight poverty*. Washington, DC: WRI.

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

APPENDICES

APPENDIX A

UNIVERSITY OF CAPE COAST

INSTITUTE FOR OIL AND GAS

QUESTIONNAIRE ***Reference number……***

CITIZENS PERCEPTION OF THE SOCIO-ECONOMIC IMPACT OF OIL AND GAS OPERATIONS IN THE ELLEMBELLE DISTRICT

This is a project carried out in partial fulfilment for the award of a Master of Philosophy degree in Oil and Gas Resource Management from the Institute for Oil and Gas, University of Cape Coast. Information provided in this questionnaire shall be used solely for academic purposes and handled with maximum confidentiality. Respondents are therefore encouraged at their best assist the researcher with the requested information and to do so with much confidence. Thank you.

SECTION A: DEMOGRAPHICS

1. Age……
2. Gender of respondent
    a. Male
    b. Female
3. Marital status
    a. Single
    b. Married
    c. Divorced
    d. Cohabiting
    e. Widow/Widower
4. Level of education
    a. No formal education
    b. Primary
    c. JHS/Middle School
    d. Tertiary
5. Employment status

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

a. Unemployed
b. Self-employed
c. Employed (Gov't)
d. Employed (Private)

6. Are you Ghanaian?
   a. No
   b. Yes
7. Which region do you come from?.....
8. Residency?
   a. Sanzule
   b. Asemnda
   c. Atuabo
9. How long have you lived in this neighbourhood? .....
10. Number of people in your household …….
11. Family type
    a. Nuclear
    b. Extended
12. Do you own a house/plot of land in this neighbourhood?
    a. No
    b. Yes
13. Current mode of accommodation?
    a. Owned with title deed
    b. Owned without title deed
    c. Owned by government
    d. Rented
    e. Others

SECTION B: PERCEIVED ECONOMIC IMPACTS OF OIL AND GAS OPERATIONS

On a scale of 1-5 indicate the extent of agreement with the following statement

#	***Indicators***	1	2	3	4	5
B1.	Oil and gas operations improves household income of indigenous people					
B2.	Individuals earnings are influenced by the oil and gas sector					
B3.	Oil and gas operations have increased the customer base of my products					
B4.	The sector has increased the sales margin of products in my community					
B5.	The sector has brought about investment opportunities in my community					

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

B6.	The sector has provided indigenous people with job/employment opportunities					
B7.	The sector has enhanced labor salary/wages					
B8.	The sector has created conducive business environment					
B9.	The sector has increased market prices of goods/services					
B10.	The sector has improved standard of living					
B11.	The sector has made housing facilities affordability in the community					
B12.	The sector has enhanced market connectivity by improving road and market infrastructure					

SECTION C: PERCEIVED SOCIO-CULTURAL IMPACTS OF OIL AND GAS OPERATIONS

On a scale of 1-5 indicate the extent of agreement with the following statement

	Indicators	1	***2***	***3***	***4***	***5***
C1.	The emergence of oil and gas operations engage indigenous people in decisions regarding the social well-being					
C2.	The emergence of operations has promoted good moral standards in my community					
C3.	My community has benefitted from the provision of education and other social amenities					
C4.	The emergence of operations has led to the loss of livelihoods					
C5.	The emergence of operations has increased access to affordable, improved and quality drinking water					
C6.	The emergence of operations has increased incidence of social vices					
C7.	My community has experienced resource related disputes as a result of the emergence of operations					
C8.	Oil and gas operations in my community threatens the quality of ecological life of the environment					
C9.	My community is exposed to health hazards due to operations in the sector					
C10.	Oil and gas operations threaten the safety of indigenous people in the community					

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

SECTION D: RESIDENTS PERCEIVED SATISFACTION WITH THE OIL AND GAS OPERATIONS

On a scale of 1 – 5, please rate your level of satisfaction with the Oil and Gas operations in your community. **With 1 – very dissatisfied, 2- Dissatisfied, 3- Uncertain, 4- Satisfied and 5 – very satisfied**

	Factors	***1***	***2***	***3***	***4***	***5***
1	I am satisfied because the oil and gas firms fully understand the needs of residents relating to decisions to improve their earning capacity					
2	I am satisfied because residents get adequate support from the oil and gas firms in the sustenance and creation of both existing and alternate livelihoods					
3	I am satisfied because the oil and gas firms fully understand the needs of residents in terms of the provision of social amenities					
4	I am satisfied because residents get adequate support in terms of livelihood sustenance from the oil and gas firms					
5	I am satisfied because the employees of the oil and gas firms have the capacity to build trust and confidence among residents					
6	The appealing nature of the operations of the oil and gas firms helps to protect the environment					
7	I am satisfied because the physical operations of the oil and gas firms do not affect the quality of the life of residents					
8	I am satisfied because the existence of the oil and gas firms create more employment opportunities for residents					

THANK YOU FOR YOUR PARTICIPATION

Digitized by Sam Jonah Library

© University of Cape Coast https://erl.ucc.edu.gh/jspui

APPENDIX B

Table 3.1

Table for Determining Sample Size of a Known Population

N	S	N	S	N	S	N	S	N	S
10	10	100	80	280	162	800	260	2800	338
15	14	110	86	290	165	850	265	3000	341
20	19	120	92	300	169	900	269	3500	346
25	24	130	97	320	175	950	274	4000	351
30	28	140	103	340	181	1000	278	4500	354
35	32	150	108	360	186	1100	285	5000	357
40	36	160	113	380	191	1200	291	6000	361
45	40	170	118	400	196	1300	297	7000	364
50	44	180	123	420	201	1400	302	8000	367
55	48	190	127	440	205	1500	306	9000	368
60	52	200	132	460	210	1600	310	10000	370
65	56	210	136	480	214	1700	313	15000	375
70	59	220	140	500	217	1800	317	20000	377
75	63	230	144	550	226	1900	320	30000	379
80	66	240	148	600	234	2000	322	40000	380
85	70	250	152	650	242	2200	327	50000	381
90	73	260	155	700	248	2400	331	75000	382
95	76	270	159	750	254	2600	335	1000000	384

Note: N is Population Size; S is Sample Size *Source: Krejcie & Morgan, 1970*

Digitized by Sam Jonah Library