

UNIVERSITY OF GHANA, LEGON  
CENTRE FOR MIGRATION STUDIES

OIL DISCOVERY, IN-MIGRATION AND INFRASTRUCTURAL CHALLENGES  
IN THE SEKONDI-TAKORADI METROPOLIS



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## DECLARATION

### Candidate's Declaration

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

Candidate's Signature:..... Date.....

Name: Jennifer Adwoa Takyiwa

### Supervisor's Declaration

I hereby declare that the preparation and presentation of the dissertation were supervised in accordance with the guidelines on supervision of dissertation laid down by University of Ghana, Legon.

Supervisor's Signature:..... Date.....

Name: Professor Alex B. Asiedu

## DEDICATION

I dedicate this work to my husband, Mr Sampson Ofori-Danso and my daughter, Nana Ama N. Ofori-Danso, who have been my source of motivation.

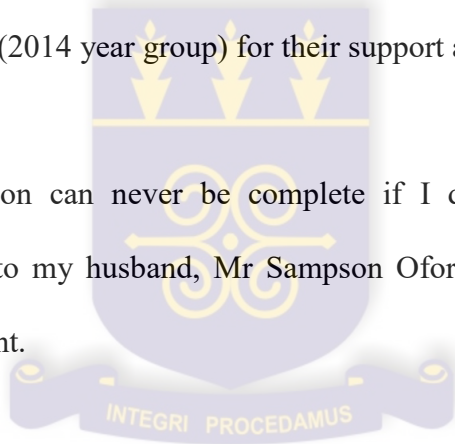


## ACKNOWLEDGEMENTS

This work became a success with the help of some important personalities. I would like to express my sincere thanks and appreciation to my supervisor, Professor Alex B. Asiedu for his intensive and cherished coaching.

It is quite a difficult task to mention all the names of the individuals who have made appreciable contributions and whose directions, support and encouragement have brought me this far, more especially towards a successful completion of this dissertation. But I would like to seize the opportunity to mention all the lecturers, staff of the Centre for Migration Studies and my course mates (2014 year group) for their support and encouragement.

My dissertation can never be complete if I do not express my heartfelt appreciation to my husband, Mr Sampson Ofori-Danso, for his support and encouragement.



Finally, I am also grateful to all the authors whose works I have made reference to in this manuscript. Thank you all.

## ABSTRACT

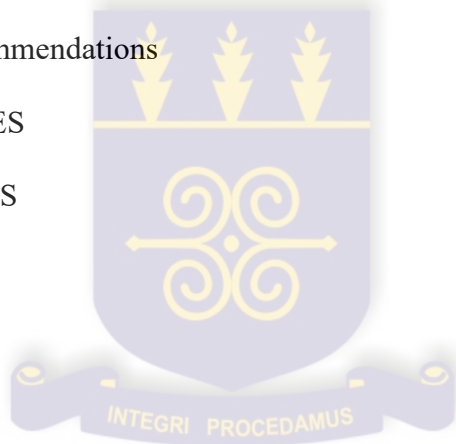
The purpose of the study was to examine the impact of oil discovery on in-migration and the consequent infrastructural challenges in the Sekondi-Takoradi Metropolis. The targeted and accessible population for the study included the residents, workers and key informants in Sekondi-Takoradi and the officials of the Sekondi-Takoradi Metropolitan Assembly (STMA). Through convenient sampling method forty (40) residents and workers in the area, representing 80% of the sample and ten (10) STMA officials and other officials of the utilities companies, representing the remaining 20%, were selected for the study. This gave a total sample of fifty (50). The research instrument used to collect the needed data for the study was the interview technique. Qualitative research approach was used for this study. It came out from the study that the oil discovery in the area had some impact on migration of people into the Sekondi-Takoradi Metropolis. The increased population in the area posed some infrastructural challenges in relation to increased demand for housing, high cost of rent, high cost of land, fall in the quality of utility services and increased traffic jam. Recommendations made at the end of the study included the need for the central government to set aside some of the oil fund for the development of the oil producing communities including the Sekondi-Takoradi Metropolis that suffer some negative consequences (such as in-migration and infrastructural challenges) of the oil find. It was also recommended that the Sekondi-Takoradi Metropolitan Assembly should adequately staff its planning department with the requisite planning officers in order to ensure speedy provision of their services to clients who want to put up buildings to address the housing deficit in the metropolis.

## TABLE OF CONTENTS

	<b>Page</b>
DECLARATION	ii
DEDICATION	iii
ACKNOWLEDGEMENTS	iv
ABSTRACT	v
TABLE OF CONTENTS	vi
LIST OF TABLES	ix
LIST OF FIGURES	x
EXPLANATION OF ABBREVIATIONS AND ACRONYMS	xi
<b>CHAPTER ONE</b>	
INTRODUCTION	1
1.1 Background to the Study	1
1.2 Problem Statement	7
1.3 Objectives of the Study	9
1.4 Research Questions	9
1.5 Significance of the Study	10
1.6 Delimitation	11
1.7 Organisation of the Study	11
1.8 Chapter Summary	12
<b>CHAPTER TWO</b>	
REVIEW OF RELATED LITERATURE	13
2.0 Introduction	13
2.1 History of Oil Exploration in Ghana	13
2.2 Theoretical Framework	17

2.2.1	Migration Systems Theory	17
2.2.2	Neoclassical Theory	22
2.3	Empirical Review	26
2.3.1	Migration Studies	26
2.3.2	The Concept of Infrastructure and its Infrastructural Challenges in Oil Producing Countries – A Global Overview	30
2.4	Conceptual Framework: Key Gaps and Unanswered Questions	39
2.6	Summary of Literature	43
<b>CHAPTER THREE</b>		
<b>THE STUDY AREA AND METHODOLOGY</b>		44
3.0	Introduction	44
3.1	The Study Area	44
3.2	Research Design	53
3.3	Population	55
3.4	Sample and Sampling Procedure	55
3.5	Data Collection Instrument	56
3.6	Data Collection Procedure	58
3.7	Data Analysis Plan	60
3.8	Summary	60
<b>CHAPTER FOUR</b>		
<b>RESULTS AND DISCUSSIONS</b>		62
4.0	Introduction	62
4.1	Findings/Discussion	62

4.2	Impact of oil discovery on migration in the Sekondi-Takoradi Metropolis	66
4.3	Oil Discovery and its Effects on Social Services/Infrastructure	68
4.2	Summary	77
<b>CHAPTER FIVE</b>		
<b>SUMMARY, CONCLUSIONS AND RECOMMENDATIONS</b>		79
5.0	Introduction	79
5.1	Summary	79
5.2	Conclusions	82
5.3	Recommendations	83
<b>REFERENCES</b>		87
<b>APPENDICES</b>		99



## LIST OF TABLES

		<b>Page</b>
Table 1	Residential Areas in STMA	48
Table 2	Demographic Information	62



## LIST OF FIGURES

<b>Figure</b>	<b>Title</b>	<b>Page</b>
Figure 1	Conceptual Framework	42
Figure 2	Map Showing Ghana (left) and Western Region (Right) showing the Study Area	47
Figure 2	Gender of Respondents	64

## EXPLANATIONS OF ABBREVIATIONS AND ACRONYMS

BECE	-	Basic Education Certificate Examination
CWSA	-	Community Water and Sanitation Agency
DVLA	-	Drivers and Vehicles Licensing Authority
ECG	-	Electricity Company of Ghana
EEZ	-	Exclusive Economic Zone
GEDAP	-	Ghana Energy Development and Access Project
GSS	-	Ghana Statistical Service
GWCL	-	Ghana Water Company Limited
NDES	-	Niger Delta Environmental Survey
OECD	-	Organisation for Economic Cooperation and Development
PCIAC	-	Petro Canada International Assistance Cooperation
SAEMA	-	Shama Ahanta East Metropolitan Assembly
SSNIT	-	Social Security and National Insurance Trust
SSSCE	-	Senior Secondary School Certificate Examination
STMA	-	Sekondi-Takoradi Metropolitan Assembly
UNCLOS	-	United Nations Convention on the Laws of the Sea
WAOFCO	-	West African Oil and Fuel Company
WASSCE	-	West African Senior School Certificate Examination

## CHAPTER ONE

### INTRODUCTION

#### 1.1 Background to the Study

It is incontrovertible that oil (referred to as black gold by Malthusian) is the most precious, usable and important source of energy in the global economy (Ross, 2006). Crude oil converted into petrol, diesel, gas etc stimulates the various modes of transportation that allow the movement of goods and services around the world. Oil production has occurred in many countries such as Saudi Arabia, United States, Iran, China, Canada etc around the globe. Due to the enormous benefits that can accrue from this industry, the discovery of oil in any location, particularly in developing countries, is greeted with great optimism. On the African continent, Libya, Algeria, Angola, Egypt, Equatorial Guinea, Democratic Republic of Congo, Gabon, Cameroun, Cote D'Ivoire and Nigeria produce some amount of oil. While some of these nations have become economically strong and self sustaining (e.g. Gabon), others (e.g. Nigeria) have been drawn into serious economic hardships and conflicts (UNDP, 2006).

Ghana started the exploration and production of oil and gas in 1896 (Boateng, 2008). However, it is Signal & Amaco Group that made the first commercial discovery in 1970 at Saltpond in the Central Region of Ghana (Ghana National Petroleum Corporation, 2006). The recoverable oil reserves were estimated at 4.9 million barrels. The production at this field began in 1978 by Agripetco, producing a total of 4,800 barrels each day (modernghanaonline, 2009). In 1985, when production decreased to 580 barrels per day, the field eventually closed down. Production however resumed in year 2000 and started producing about 600 barrels per day (GNPC, 2006). With the

involvement of private interest groups alongside a re-equipped GNPC, new discoveries of hydrocarbon (oil and gas) in commercial quantities were made by both Kosmos and Tullow Oil Companies at the Jubilee field in 2007 around Cape Three Point in the Western Region of Ghana. This Jubilee Field has reserves of about 800 million barrels of crude oil with an upside potential of about 3 billion barrels (Commerce Ghana, 2010). Indeed other discoveries have since been made and are yet to be developed. Currently, Ghana produces a total of about 110,000 barrels per day (GNPC, 2013).

However, the presence of substantial amounts of oil and gas reserves has been identified by many authors as a potentially mixed blessing for oil producing countries (World Bank, 2006). Although the discovery of oil creates a sense of hope and expectation that the oil revenue would lead to the development of local communities and countries as a whole by providing job and encouraging investments, in most cases, this dream has remained illusory as the exploration of the oil resources leads to the destruction of the environment of the local communities, movement of labour migrants (both skilled and unskilled) to the oil producing communities, increase in cost of rent, building permits issuance, road traffic jams, increase in cost of food items and energy and water supply challenges.

Evidence around the world suggests that a community's/country's benefits from its discovery of oil and gas depend on the global position of the oil-producing country in question (Bloomfield 2008; Hartzok, 2004). In most instances, local communities and oil producing nations in the global West seem to derive more blessings from the oil discovery and exploration in comparison to those in the global South. A good case in

point is Norway which used to be the poorest country in Scandinavia as at 1960s but thanks to the discovery of oil in 1969, Norway has eventually become the wealthiest country in the Scandinavia from the 1990s till date. Larsen (2006) attributes this success to Norway's ability to prevent rent-seeking and corruption which have been identified as core elements of the resource curse.

Oil and migration are interconnected in various ways around the world. According to Goldscheider (1971), migration refers to the movement of people across territorial boundaries often involving a change in their place of usual residence. It involves the detachment of their organisation of activities at one place and the movement of the total round of activities to another. Migration is again defined as a process of spatial separation between the location of a resident household or family, and one or more livelihood activities engaged by family members (Ellis & Freeman, 2005). For many households, migration might be one important aspect of their livelihood diversification. Livelihood is not synonymous with income, though income is an important part of it. Rather, livelihood refers to the resources that together with household agency, determines the living gained by the household or individuals (Ellis, 2000). Through engaging in different income generating activities, the household achieves livelihood diversification. Migration affects the livelihood of many households in different ways.

Today there is a growing recognition of the fact that migration and development is interlinked. The World Bank (2006) argues that remittances have become twice the size of international aid flows and are a more stable source of financial capital for the households involved. Migration is increasingly seen as a very important part of rural

poverty reduction in developing countries (OECD, 2005; World Bank, 2007). According to the World Bank (2007), remittances from family members are often used for investment, education and healthcare, which improve the human capital base of the household for future generations. Though there is little doubt about the positive impact of migration for the households that are involved, there is much more uncertainty about the effects for distribution of resources between households in these areas (De Haan, 1999; Ellerman, 2005; Lipton, 1984; Murphy, 2002).

Obeng-Odoom (2009), in his paper 'Oil and Urban Development in Ghana' analysed the possible implications of oil exploration on Ghanaian cities in the context of existing urban policy. The paper argues that oil would accelerate the rate of urbanisation both within and around the cities where oil will be mined, because oil discovery and drilling will make people move to the oil communities. There will be opportunities for construction activities, all scales of businesses and cheap fuel. However, these opportunities, the paper reveals, would have adverse effects on the environment and the equitable distribution of urban resources. Later studies by Edem (2011) predicted some expected impact of the oil discovery in Sekondi-Takoradi on land use patterns and growth of the city. The outcome of the population and Housing Census of the Sekondi-Takoradi Metropolis in 2010 also indicates a significant increase in population of 200,185 over the previous data realised in year 2000 (i.e. 559,548 – 359,363) ([www.stma.gov.gh/stma](http://www.stma.gov.gh/stma)). There is therefore the need to probe the figures to identify the cause or causes of this significant increase of 55.7% in the population of the metropolis.

An increment in local population as a result of in-migration for job opportunities implies extra pressures on schools, hospitals and recreational facilities. Additionally, the situation has a tendency to give rise to urban slums due to poor planning. A rise in local population particularly in Takoradi and Sekondi will necessitate provision of accommodation to cater for the teeming population. Such a situation may lead to clearing of vegetation for such projects, but not without environmental consequences. A typical example is already seen in the mining communities of Obuasi and Tarkwa where vast fertile lands have been cleared for building projects for mining workers. Meanwhile, the Western Region hosts one of the richest conserved areas, Ankasa, hence an encroachment of any scale would have negative consequences on biodiversity.

According to the Sekondi-Takoradi Metropolitan Assembly (2010), about 69% of the population of the Sekondi-Takoradi Metropolis are urban with 31% rural in the year 2000; however there has been tremendous increase in the urbanisation from 69% to 72.9% and rural decrease from 31% to 27.1% as 2010. The statistics revealed that most of the socio-economic infrastructures are densely concentrated in the core urban centres of the metropolis such as Takoradi and Sekondi with sparsely distributed facilities at the peri-urban. As a result of the discovery of the oil and gas, there is now a strong linkage with the adjoining Districts as most of the people in the Metropolis are fed by food crops from the Mpohor Wasssa East District and with the provision of a Modern Abattoir at Whindo which will also serve the adjoining Districts. Another very important facility will be the Heavy Duty Vehicle Transit terminal which will help decongest the Metropolis and Districts such as Shama and Agona West Districts and the establishment of a comprehensive mass transport system, in addition to the

protection of farm lands and protected areas due the growth in the population and pressures on existing facilities in the metropolis.

The oil and gas discovery has created new settlements within the metropolis. The new developing settlements in the metropolis exhibit characteristics which are in direct contrast to the old settlements with respect to socio-economic infrastructure. They have poor roads mostly with earth drains, inadequate supply of utility services especially water, inadequate educational and health facilities, etc and therefore, residents always commute to established settlements for services such as education and health as well as commerce. These settlements are primarily dormitory settlements serving the core where almost all economic activities take place.

This is a clear indication that migration into the oil producing region will aggravate the socio-economic challenges on the metropolis and the entire Ghanaian economy as a whole. These challenges include high cost of rents and building permit issuance difficulties, severe road traffic jams and accidents, increased cost of food items, energy and water supply difficulties, conflicts, drug related issues and other social vices such as prostitution and alcoholism. Currently there is little research on the oil discovery, migration and its resultant socio-economic and infrastructural challenges in the Sekondi-Takoradi Metropolis. The paper presented by Obeng-Odoom (2009) looked at possible implications based on happenings in other oil producing economies. The current study seeks to gather empirical evidence on the subject matter. There is therefore the need to evaluate some of these challenges and suggest possible measures to curb them.

## 1.2 Problem Statement

A major challenge in oil and gas exploration and production in a community that has just discovered oil in commercial quantities is the infrastructural and social challenges it brings about (National Research Council, 1985). This may be due to the influx of people who move to the region in search of jobs. In view of this, it becomes conspicuous that neglecting the immediate and long-term environmental impacts of Ghana's oil and gas exploration and production activities will have a detrimental effect on the community in which the oil exploration and production is taking place. Previous studies have established that in projects where infrastructural challenges and management are ignored or poorly considered, the expected economic gains in the long term become unproductive or counter-productive and sometimes elusive (Ghisel, 1997; Baptiste & Nordenstam, 2009).

One significant issue that the oil discovery in Cape Three Point is gradually bringing about is the issue of migration into the Sekondi-Takoradi Metropolis. As the regional capital of the Western Region of Ghana, migration seems to be on the increase. The drilling and exploration of oil and gas in the region seems to be resulting in an influx of rural folks, urban poor and other nationals into the regional capital to seek employment. According to the 2010 Population and Housing Census, even though majority of the population of the region (63.1%) are non-migrants, 36.9% are migrants. It is important to state that 12.0% of the migrants are intra-regional in-migrants and 23.6% are inter-regional in-migrants, leaving only 1.3% as immigrants (Ghana Statistical Service, 2013). Majority of the in-migrants are found in the Sekondi-Takoradi Metropolis. For this reason, there seems to be some infrastructural

challenges with regard to transportation, housing services and water and energy supplies.

According to STMA (2010), there is also an influx of people to Sekondi-Takoradi in search of jobs and this could put a strain on available facilities and services such as, education, housing, roads, and health facilities. STMA (2010) further observes that vehicular traffic in the city has significantly increased in the past year and had impacted negatively on road safety and road expansion. It is important to emphasise that, the prevailing condition may not be solely attributed to oil discovery and migration. There is the need for an infrastructure plan for the metropolis, with emphasis on roads, airport, seaport and rail transport. In the meantime oil and gas must be integrated into all development programmes of the metropolis (STMA, 2010).

Again, anecdotal evidence shows that the metropolis is facing serious vehicular traffic as a result of influx of people and vehicles in the area coupled with the fact that the area has poor road networks among others. Also, the demand for housing services seems to be on the rise. According to the Ghana Statistical Service (2013), of the 2,376,021 people living in the Western Region, 23.5% of the inhabitants, representing 559,548 live in the Sekondi-Takoradi Metropolis alone. Houses and hotels seem to be springing up everywhere to take care of the increased housing demand in the area. Furthermore, there seems to be pressure on the water and energy supplies in the area as a result of the increased population. The question that arises is are these recent infrastructural challenges arising as a result of oil discovery and its consequent in-migration in the area of study?

It is against this backdrop that the researcher wishes to assess and evaluate the oil discovery, in-migration and its resultant infrastructural challenges in the Sekondi-Takoradi Metropolis so as to offer suggestions that will help policymakers and other stakeholders to help reduce the consequent negative impacts.

### **1.3 Objectives of the Study**

The aim of this study is to find out if oil discovery in the Western Region of Ghana has any impact on in-migration in the Sekondi-Takoradi Metropolis, and if so, whether this poses some infrastructural challenges in the metropolis. The specific objectives include the following:

- (i) To assess oil impacts on migration in the Sekondi-Takoradi Metropolis
- (ii) To ascertain whether the discovery of oil has affected social services or infrastructure in the metropolis

### **1.4 Research Questions**

The study will be guided by the following research questions:

- (i) To what extent has the oil discovery impacted on the trend of migration into the Sekondi-Takoradi Metropolis?
- (ii) How has the migration into the Sekondi-Takoradi Metropolis affected the transportation system in the metropolis?
- (iii) How does the migration into the Sekondi-Takoradi Metropolis affect the demand and supply of housing services in the metropolis?
- (iv) To what extent does the migration affect the water and energy supplies in the metropolis?

- (v) How can these infrastructural challenges be addressed by the concerned authorities in the metropolis?

### **1.5 Significance of the Study**

A study of migration and the infrastructural challenges which emerge as a result of oil discovery may play an important role in the interpretation of a concept that is known as either the “resource curse” or the “curse of natural resources”. This concept states that natural resource endowments, particularly oil, increases the cost of living and reduces the standard of living in the area because of higher population growth rate as a result of migration into this community.

Second, understanding how oil discovery impact on migration may be important for understanding economic development. Many countries with oil endowments are also developing countries. Therefore, it is relevant to relate oil discovery to migration in order to understand the pathways through which oil discovery might affect socio-economic development.

The relevance of the study also lies in the fact that the study will help various stakeholders in the oil exploration companies, communities, researchers, NGOs as well as the local authorities to devise strategies to contain the influx of people into the community.

It will also help the Sekondi-Takoradi Metropolitan Assembly to have a clear picture of future trends of migration and what can be done to better manage the growth. Local

businesses may also find the outcome of the study extremely useful for planning and predicting changes in the consumer behaviour.

### **1.6 Delimitation**

The study of oil discovery, in-migration, and infrastructural challenges as a research work could have been undertaken in a broader perspective cutting across the whole country. However, the scope of the study centres on the Sekondi-Takoradi Metropolis. Sekondi-Takoradi Metropolis was selected on the basis of it being the regional capital of the Western Region of Ghana, where oil has been discovered. This is expected to give better understanding the oil discovery, in-migration and its consequent infrastructural challenges. Three indicators have been selected to determine the outcomes. They include transportation system, demand and supply of housing and water and energy supplies. The study will be restricted to only the Sekondi-Takoradi Metropolis because at this level the study can reliably assess the impact within the limited time available for the conduct of the research.

### **1.7 Organisation of the Study**

The whole research is organised into five chapters. The introductory part is Chapter One. It covers the background to the study, problem statement, research questions, objectives of the study, significance of the study, delimitations and the final section in this chapter deals with the organisation of the study.

Theoretical and conceptual literature relevant to the study could be found in chapter two. The chapter seeks to examine the views of authors on issues such as migration, oil discovery and its impact on migration, and other conceptual framework.

Chapter three concentrates on the methodology of the study including the study area, research design, population, sample and sampling procedure, data collection instruments, data collection procedure and data analysis plan.

Chapter four deals with how data will be collected, organised and analysed during the investigation. It also discusses the findings of the research.

Chapter five has three sections consisting of the summary of the findings, conclusions and recommendations to help the country and the Sekondi-Takoradi Metropolis devise strategies to effectively and efficiently manage the impact of the oil discovery and migration on the infrastructure in the metropolis.

## **1.8 Summary**

The first chapter of this report gave an introduction to the study. It offered a general overview of oil discovery, in-migration and infrastructural challenges. The aim of this study is to find out if oil discovery in the Western Region of Ghana has any impact on in-migration in the Sekondi-Takoradi Metropolis, and if so, whether this poses some infrastructural challenges in the Metropolis. The chapter was organised into various sub-headings including the background to the study, problem statement, research questions and objectives of the study. Five questions were posed in order to meet the objectives of the study. The chapter also talked about the significance or benefits of the study, delimitation i.e. scope of the study and the organisation of the study. The next chapter concentrates on review of related literature.

## CHAPTER TWO

### REVIEW OF RELATED LITERATURE

#### 2.0 Introduction

This chapter reviews literature relevant to the study. Literature was reviewed under the following headings: History of Oil Exploration in Ghana, Theoretical Framework, Empirical Review, Oil Exploration, Migration and Infrastructural Challenges-A Global Overview and Conceptual Framework: Key Gaps and Unanswered Questions.

#### 2.1 History of Oil Exploration in Ghana

Ghana joined the league of oil producing countries in 2010. However, prospecting for oil and gas begun in Ghana as far back as 1897 (Boateng, 2008). On the basis of its geological nature, Ghana has four sedimentary basins which include the Western basin (Tano-Cape Three Points Basin), Central Basin (Saltpond Basin), Eastern Basin (Accra- Keta Basin) and Inland Voltaian Basin (Boateng, 2008). Early studies of rocks underlying the surface of most lands or soil surfaces in Ghana revealed strata of sediments. This revelation gave a high possibility that there could be the discovery of oil and gas deposit in Ghana in commercial quantities.

The history of oil and gas exploration can be classified into four distinct phases due to various factors among which science and technological advancement and political interventions feature prominently. Phase I dealt mainly with Onshore Exploration and lasted between 1896 and 1969. The second phase concentrated on Offshore Exploration and it took place between the years 1970 and 1984. These exploration activities were done by foreign companies which had the technological know-how and the resources. In 1985, the Ghanaian government saw the need to get involved in

the exploration activities by establishing the Ghana National Petroleum Corporation (GNPC) to be at the fore-front of how the nation can be represented. This mandate which is the third phase ended in 2000.

From 2001 to date, the fourth phase, the GNPC was restructured and resourced to focus more on its core function of collaborating and facilitating the search for commercial quantities of hydrocarbon deposits and subsequent extraction. The staff had to undergo retraining while modern gadgets and equipment had to be procured. To ensure that GNPC became very well empowered to carry out its functions, it was upgraded to a company status to make it semiautonomous.

Oil and gas exploration as stated in the first phase started around the onshore Tano basin after oil and gas seepages were discovered by early explorers (Khan, 1970). Though there was no proper understanding of seismic data by then, it attracted some companies who began to drill wells with the view of discovering oil and gas in commercial quantities. According to Boateng (2008), five wells (WAOFCO – 1, 2, 3, 4, 5 ) were drilled by West Africa Oil and Fuel Company within a five year period with the second sinking of wells resulting in a discovery. This was documented after it produced an estimated 5 barrels per day (5 bpd) at a total depth of 35 metres.

In 1909, a French company, Société Française de Petrole, sunk six wells at an average depth of between 12- 17 metres and this produced 7 barrels of oil per day (bpd). This progressive achievement attracted more companies such as African and Eastern Trade Corporation and Gulf Oil Company to begin the acquisition of licences to do more

exploration. By the year 1956, the Gulf Oil Company sank four wells and encountered non-commercial quantities at various depths.

More exploratory activities went on and are still ongoing in the other basins in an attempt to find oil and gas deposits in commercial quantities. Though exploratory activities started way back in the late 1890s, it was not until in the 1950s that significant strides were made towards major discoveries. During the third phase of exploratory activities, some renowned oil companies got attracted to the potentials Ghana has in becoming an oil producing country. Though offshore drilling is considered relatively dangerous and more expensive, it did not deter further search for hydrocarbons. In 1997 and 1998 for example, Hunt Oil Company and Nuevo Energy Company sank wells in the deep waters off the west coast of Cape Three Points to a depth of 252 feet and 170 feet respectively (Boateng, 2008). Other companies such as Atlantic Richfield Company Limited, Philips Petroleum, Petro Canada International Assistance Corporation (PCIAC) and Ghana National Petroleum Corporation (GNPC) did some exploratory and appraisal drillings following the progress that was made by earlier companies. In the last thirteen years, the current phase of exploration of oil and gas in Ghana, giant strides have been made and this led to the discovery of commercial quantities of oil and gas off the west coast of Cape Three Points. This time saw the inclusion of Kosmos Energy, Tullow Energy, Norsk Hydro and Gas, Hess Corporation, Anadarko and the E.O Group joining in the exploratory expedition.

In the last twenty-two years, exploration for oil and gas has changed drastically. At the time exploration started in Ghana, the only way of locating petroleum-bearing rocks either onshore or offshore was to search for the evidence of seepages on land or

water/sea surface. This is followed by sinking of wells to determine whether seepage could indeed give a clue to oil and gas deposits. With the growing demand for petroleum products worldwide, improved technology has helped to make exploration and discovery more reliable and accurate. The use of seismology, though capital intensive, led to the discovery of the “hyedua1” and “mahogany2” wells in the “Jubilee fields3” and the Deep water Tano basin where the Tweneboa and Odum wells are located.

A number of companies applied for licences and concessions for the development of the Jubilee field which started way back in 2010 for the exploration of more hydrocarbons. These include Kosmos Energy, Tullow Ghana Limited, Anadarko, Vanco, Lukoil, Hess Corporation, Vitol, Gasop, Afren and Celtique companies. In view of what the companies are specialised in, Tullow appeared to be the main company to spearhead the drilling of oil at the time. On the basis of the concessions that have been granted, Kosmos Energy Ghana Limited holds a significant share just as Tullow Ghana Limited does. By percentage composition of the Jubilee fields, Anadarko accounts for a 30.875%, Kosmos Energy 30.875%, Tullow 22.896%, Sabre Oil & Gas 1.854%, the E.O Group 3.5% and Ghana National Petroleum Company 10%. Furthermore, licenses and concessions have been granted to some companies on the basis of percentages in the Deep Water Tano basin for well development and further exploration.

## 2.2 Theoretical Framework

### 2.2.1 Migration Systems Theory

The fundamental assumption of this theory is that migration alters the social, cultural, economic, and institutional conditions at both the sending and receiving ends—that is, the entire developmental space within which migration processes operate. Whereas network theory mainly focuses on the vital role of personal relations between migrants and non-migrants, and the way this social capital facilitates, perpetuates and transforms migration processes, systems theory goes beyond this point in stressing that migration not only affects and is affected by the direct social environment of migrants, but restructures the entire societal – or “developmental” – context of the concrete spaces in which migration takes place, both at the receiving and sending end. Unlike transitional models that focus on how broader processes of development affect migration, migration systems theory draws a two-way, *reciprocal* and *dynamic* link between migration and development, and therefore seems particularly relevant for elaborating a theoretical framework, which puts migration in a broader development perspective.

The geographer Mabogunje (1970), the founder of migration systems theory, defined a migration system as a set of places linked by flows and counter-flows of people, goods, services, and information, which tend to facilitate further exchange, including migration, between the places. Borrowing from general systems theory, he focused on the role of information flows and feedback mechanisms in shaping migration systems. He stressed the importance of feedback mechanisms, through which information about the migrants’ reception and progress at the destination is transmitted back to the place of origin. Favourable information would then encourage further migration and

lead to situations of almost organised migratory flows from particular villages to particular cities. In other words, the existence of information in the system encourages greater deviation from the most probable or random state. The state of a system at any given time is not determined so much by its initial conditions as by the nature of the process, or the system parameters since open systems are basically independent of their initial conditions (Mabogunje, 1970)

Mabogunje (1970) focused his analysis on rural-urban migration within the African continent. Portes and Böröcz (1987) and Kritiz *et al.* (1992) extended this to international migration. International migration systems consist of countries or rather places within different countries that exchange relatively large numbers of migrants, and are also characterised by feedback mechanisms that connect the movement of people between particular countries, areas, and even cities to the concomitant flows of goods, capital (remittances), ideas, and information (Fawcett, 1989; Gurak & Caces, 1992). Migration systems link people, families, and communities over space in what we nowadays call transnational communities (Vertovec, 1999). This results in a rather neat geographical structuring and clustering of migration flows, which is far from a random state, in which formal and informal subsystems operate to perpetuate and reinforce the systematic nature of international flows by encouraging migration along certain pathways, and discouraging it along others. The end result is a set of relatively stable exchanges yielding an identifiable geographical structure that persists across space and time (Mabogunje, 1970).

Network theory can already explain why, once a migration system has developed, it tends to operate relatively independently of government policy intervention.

Migration system theory adds to that, in line with Lee (1966), that migration flows and counter-flows of goods, remittances, ideas, and information tend to be geographically structured (patterned) and take the shape of spatially clustered flows. This clustered morphology of migration flows can typically not be explained by factors such as unemployment as well as income and other opportunity differentials. In emigration countries, we often see that particular regions, villages, or ethnic (sub) groups tend to specialise in migration to particular areas, cities, or even city quarters, either within the same country or abroad.

Besides the existence of much specialised migration systems at the micro-level, it is possible to identify several international migration systems at the macro-global level, in which particular regions in the developing world have specialized in migration to particular regions in the developed world. Examples are the North American migration system which links Mexico and Central American countries to the US and Canada and Euro-Mediterranean migration system, which links North African countries and Turkey to the European Union (De Haas, 2007; Kritz et al., 1992). There are clear parallels between migration system theory, world system theory and Skeldon's regionalisation of global development tiers, as they all draw on the notion of migration connecting semi-peripheral 'migration frontier' countries (Skeldon, 1997) to wealthy 'core countries'. Fawcett (1989) stressed the relevance of both national and transnational networks, which tend to be closely interwoven, blurring the distinction between internal and international migration (Martin, 1992; McKee & Tisdell, 1988). Via a process of so-called *leapfrogging*, international migration is often preceded by internal migrant moves, and returning migrants may settle in other

than their places of origin. In a process called *relay migration* (Arizpe, 1981), return migration may be followed by the migration of another family member.

The fact that the initial circumstances at both the receiving and sending ends are modified by the migration process implies that the causes and consequences of migration should not be studied separately, but as part of the same system and processes. Migration simultaneously reshapes the socio-economic “development” context at both the origin and destination, which in their turn, are likely to influence subsequent migration patterns. For example, remittances sent back to family members could alter the social and economic context in the areas of origin and encourage subsequent migration (van Dalen et al., 2005). Levitt (1998) stressed the importance of “social remittances”, which she interprets as a local-level, migration-driven form of cultural diffusion. This flow back consisting of ideas, behaviours, and identities not only plays an important role in potentially promoting immigrant entrepreneurship, family formation, and political integration. It also affects the perceptions, feelings of relative deprivation and aspirations of people, which are also likely to affect subsequent migration patterns. The influx of international remittances to migrant households can increase intra-community inequality and feelings of relative deprivation among non-migrants and may contribute to a ‘culture of migration’, in which migrating becomes the norm. As Massey (1990) pointed out, migration induces changes in social and economic structures that make additional migration likely.

This insight into the reciprocal effects of migration on the entire development context emphasises the importance of including *non-migrants* in any migration impact analysis, as migration tends to affect sending societies *as a whole*. The

methodological implication of this seems to be that the effects of migration cannot be properly understood by studying migrants alone, as is often the case, but also requires considering the wider (development) context in which migration takes place. Therefore, the very weakness of many studies on causes (determinants) and effects (impact) of migration is their tendency to focus on migrants and migration. Also in the study of transnationalism, most empirical evidence is based on case studies, which tend to sample on the dependent (transnationalism) variable and are therefore likely to be biased towards immigrants with high levels of transnational orientations (Guarnizo et al., 2003). A proper understanding of the inter-linkages and feedback mechanisms between migration and development necessitates studying entire migrant communities, including non-migrants as well as the concrete regional and local contexts and transnational spaces in which they live.

Network and migration systems theories primarily focus on the factors that cause, shape, and perpetuate migration. In particular migration systems theory is useful in describing and modelling processes of spatial geographical structuring of migration patterns, and, as a spatiotemporal model, it can be well integrated within the dynamic *transitional* models of migration-development interconnections which we elaborated on the basis of Zelinsky's and Skeldon's (1997) work. Taken together, they help us to understand how migration evolves over time and changes in its nature, magnitude, destinations, and selectivity—and is reciprocally linked to the broader process of development. This theoretical perspective is fundamentally conflicting with and superior to static and a-historical push-pull, neo-classical and structuralist approaches, which all draw on the – erroneous – sedentary notion that migration and development are substitutes rather than complements.

## **2.2.2 Neoclassical Theory**

### **2.2.2.1 Macro Theory**

This is the most well-known and oldest theory of international migration which was developed originally to explain labour migration in the process of economic development (Lewis, 1954; Ranis & Fei, 1961; Harris & Todaro, 1970; Todaro, 1976). According to this theory and its extensions, international migration is caused by geographic differences in the supply of and demand for labour (Massey et al., 1993). The wage differences cause workers to move from low-wage countries to high-wage countries. Countries with a large endowment of labour relative to capital have a low equilibrium market wage, while countries with a limited endowment of labour relative to capital are characterised by a high market wage, as depicted graphically by the familiar interaction of labour supply and demand curves. The resulting differential in wages causes workers from the low-wage country to move to the high-wage country. As a result of this movement, the supply of labour decreases and wages rise in the capital-poor country, while the supply of labour increases and wages fall in the capital-rich country, leading, at equilibrium, to an international wage differential that reflects only the costs of international movement, pecuniary and psychic.

Mirroring the flow of workers from labour-abundant to labour-scarce countries is a flow of investment capital from capital-rich to capital-poor countries. The relative scarcity of capital in poor countries yields a rate of return that is high by international standards, thereby attracting investment. The movement of capital also includes human capital, with highly skilled workers moving from capital-rich to capital-poor countries in order to reap high returns on their skills in a human capital-scarce environment, leading to a parallel movement of managers, technicians, and other

skilled workers. The international flow of labour, therefore, must be kept conceptually distinct from the associated international flow of human capital. Even in the most aggregated macro-level models, the heterogeneity of immigrants along skill lines must be clearly recognised. The simple and compelling explanation of international migration offered by neoclassical macroeconomics has strongly shaped public thinking and has provided the intellectual basis for much immigration policy. The perspective contains several implicit propositions and assumptions:

- (i) The international migration of workers is caused by differences in wage rates between countries.
- (ii) The elimination of wage differentials will end the movement of labour, and migration will not occur in the absence of such differentials.
- (iii) International flows of human capital, that is, highly skilled workers, respond to differences in the rate of return to human capital, which may be different from the overall wage rate, yielding a distinct pattern of migration that may be opposite that of unskilled workers.
- (iv) Labour markets are the primary mechanisms by which international flows of labour are induced; other kinds of markets do not have important effects on international migration.
- (v) The way for governments to control migration flows is to regulate or influence labour markets in sending and/or receiving countries.

#### **2.2.2.2 Micro Theory**

According to this theory, migration is an individual choice; this choice comes as a result of cost-benefit calculations. People move to the place where the expected discounted net returns are greatest (Sjaastad, 1962; Todaro, 1989; Todaro &

Maruszko, 1987). In this scheme, individual rational actors decide to migrate because a cost-benefit calculation leads them to expect a positive net return, usually monetary, from movement. International migration is conceptualised as a form of investment in human capital. People choose to move to where they can be most productive, given their skills; but before they can capture the higher wages associated with greater labour productivity they must undertake certain investments, which include the material costs of travelling, the costs of maintenance while moving and looking for work, the effort involved in learning a new language and culture, the difficulty experienced in adapting to a new labour market, and the psychological costs of cutting old ties and forging new ones. Potential migrants estimate the costs and benefits of moving to alternative locations and migrate to where the expected discounted net returns are greatest over some time horizon (Borjas, 1990). Net returns in each future period are estimated by taking the observed earnings corresponding to the individual's skills in the destination country and multiplying these by the probability of obtaining a job there (and for illegal migrants the likelihood of being able to avoid deportation) to obtain "expected destination earnings." These expected earnings are then subtracted from those expected in the community of origin (observed earnings there multiplied by the probability of employment) and the difference is summed over a time horizon from 0 to  $n$ , discounted by a factor that reflects the greater utility of money earned in the present than in the future. From this integrated difference the estimated costs are subtracted to yield the expected net return to migration.

In theory, a potential migrant goes to where the expected net returns to migration are greatest, leading to several important conclusions that differ slightly from the earlier macroeconomic formulations:

- (i) International movement stems from international differentials in both earnings and employment rates, whose product determines expected earnings (the prior model, in contrast, assumed full employment).
- (ii) Individual human capital characteristics that increase the likely rate of remuneration or the probability of employment in the destination relative to the sending country (e.g., education, experience, training, language skills) will increase the likelihood of movement, other things being equal.
- (iii) Individual characteristics, social conditions, or technologies that lower migration costs increase the net returns to migration and, hence, raise the probability of international movement.
- (iv) Because of (ii) and (iii), individuals within the same country can display very different proclivities to migrate.
- (v) Aggregate migration flows between countries are simple sums of individual moves undertaken on the basis of individual cost-benefit calculations.
- (vi) International movement does not occur in the absence of differences in earnings and/or employment rates between countries. Migration occurs until expected earnings (the product of earnings and employment rates) have been equalised internationally (net of the costs of movement), and movement does not stop until this product has been equalised.
- (vii) The size of the differential in expected returns determines the size of the international flow of migrants between countries.
- (viii) Migration decisions stem from disequilibria or discontinuities between labour markets; other markets do not directly influence the decision to migrate.

- (ix) If conditions in receiving countries are psychologically attractive to prospective migrants, migration costs may be negative. In this case, a negative earnings differential may be necessary to halt migration between countries

## **2.3 Empirical Review**

### **2.3.1 Migration Studies**

In the 1960s and 1970s, most thinking on migration revolved around neo-classical (economic) explanations. Rooted in Lewis's (1954) idea of dual economies, where the modern sector connects with the traditional, migration was seen as a way for countries to get rid of surplus labour – the precondition for development. Migration was considered to be governed by the economics of rational choice, namely: utility maximisation, expected net returns and wage differentials – such that individual decision-making combined with a macro-counterpart of structural determinants to drive the flow of workers from labour abundant/low wage areas to labour scarce/high wage areas. The decision to migrate, according to this model, was thus made by actors based on cost-benefit calculations.

The shortcomings of this approach became apparent when migratory flows underwent profound changes in the mid-1970s. There was a shift from national to international migration, which increased both the heterogeneity and complexity of the phenomenon – thereby raising questions about some of the assumptions made by the neo-classical model. Why, for example, do more people not move from underdeveloped areas? Likewise, why is it that some countries enjoy high rates of out-migration, while others, structurally similar, do not? In tackling such questions, it became clear that the neo-classical model, based almost entirely on economic rationale, was unable to

incorporate divergent political and cultural contexts, non-economic factors, and the increasingly heterogeneous nature of migrant societies. Thus, as international migration took precedence, new ways of thinking emerged. As Massey et al. (1998) state, this created a “variegated mosaic” of perspectives rather than any single new paradigm.

A study carried out by Stark in 1991 enriched the neo-classical explanation with one key amendment; that the rational actor was now the household rather than the individual. The dual labour market theory of Michael Piore (1979), on the other hand, placed the focus on the receiving end of migration, where outward flows of workers were caused by a permanent demand for foreign labour, and thus tied to the characteristics of advanced industrial societies. This view was closely aligned to world systems theory (Wallerstein, 1974), which classed migration as the product of the domination exerted by core countries over peripheral ones (Portes, 1978). Migration was thus seen as stemming from inequalities, an idea that Sassen (1990) took in framing migration as a global labour supply system.

The above perspectives, however, were all still driven by economic thinking. Among sociologists and anthropologists, there was a great deal of dissatisfaction with how this (largely) macro-approach portrayed migrants not as active agents but as “passive reactors manipulated by the world capitalist system” (Brettell & Hollifield 2008). This backlash resulted in a new form of theorising, along social and institutional lines, based on the articulation between sending and receiving societies. In particular, there was great interest in the concept of migrant networks, which was developed most notably by the work of Douglas Massey (1987, 1990). Massey defined these networks

as “sets of interpersonal relations that link migrants or returned migrants with relatives, friends or fellow countrymen at home” (Massey, 1990), which reduced the costs (financial and emotional) and uncertainty of migration, while acting as a new layer of social capital held by affected households and communities (Davis, Stecklov, & Winters, 2002; Curran and Rivero-Fuentes, 2003). Networks are now considered to play a central role among most contemporary investigations and explanations of migration. In the context of Mexican migration, Curran and Rivero-Fuentes (2003) found that migrant networks are more important for international moves than for internal moves, with Massey and España (1987) showing that the likelihood of men moving increases significantly when at least one member of their household had previously migrated to the United States. Massey and Espinoza (1997) also found that kinship networks play an important role in increasing the odds of first and subsequent migrations for heads of household.

In becoming one of the most important explanatory factors behind migration, networks have helped to move explanations of migration from an economic to a more cultural model. In their 1987 classic “*Return to Aztlan*”, Massey and España described migration as a dynamic social process involving six main stages:

1. Migration originates in structural transformation of sending and receiving societies;
2. Once begun, migration eventually develops a social infrastructure that enables movement on a mass basis;
3. International migration becomes more widely accessible, and it is increasingly adopted by families as part of larger survival strategies;

4. International migration is strongly disposed to become a self-sustaining social process;
5. No matter how temporary a migration flow may seem, settlement of some migrants within the receiving country is inevitable; and,
6. Networks are maintained by an ongoing process of return migration, where recurrent migrants regularly go home for periods and settled migrants return to their communities of origin.

Within this cultural model, networks are one of the mechanisms by which migration can become a self-perpetuating phenomenon (Portes and DeWind, 2007; Curran and Rivero-Fuentes, 2003) – in the sense that they explain the continuation of migration independently from the causes that led to the initial movement. This idea of *cumulative causation* was first suggested by Myrdal (1944) in relation to the increasing impoverishment of Afro-American communities in the United States. The concept was applied to migration when Massey (1990) argued that the first wave of migration changes reality in a way that induces subsequent moves through a combination of socio-economic processes and transformations. Despite increasing acceptance among migration scholars, the theory of cumulative causation is not without its problems. For example, while networks and cultural ties are expressed in the powerful ideology of return migration, little is understood about what may happen when mobility is restricted – as is the case currently with Mexico-US-Mexico migratory flows through increased border control and enforcement.

A study carried out by Likupe (2011) revealed that Black African nurses' motivation for moving to the UK can be classified into economic reasons which encompass

personal development and education, poor health care and systems, socio-political reasons and personal reasons. Expectations of nurses before they left their countries for the UK mirrored these themes.

The divergent perspectives presented here serve to highlight the complex and multi-faceted nature of migration, which makes the phenomenon resistant to theory-building. Arango (2000) is right to point out that most existing theories tend to be partial and limited; they are useful for explaining no more than a dimension or facet of why people choose to migrate. At the same time, it should be noted that scholars have a much more complete understanding of migration today than they did fifteen or twenty years ago, benefiting from years of empirical observation to appreciate how migratory dynamics evolve and change over time. In the context of international migration, there is now a widely-accepted notion about how migrant flows develop as the situation in sending and receiving countries change.

### **2.3.2 The Concept of Infrastructure and its Challenges in Oil Producing Countries – A Global Overview**

The term infrastructure connotes the underlying structures 'base' of a society or economy that helps it to function and without which economic growth and overall development is severely hampered (Caves, 2005; Chambers, 2007). Chambers (2007) defined infrastructure as the physical structures, facilities, and networks which provide essential services within a community such as transportation, utility companies, water and communication systems as well as public facilities such as schools, hospitals, and government buildings.

Caves (2005) also attempts to distinguish different categories of infrastructure rather comprehensively as capital assets that traditionally have included public and privately owned providers of facilities and systems such as utilities (gas and electricity, water supply and sewerage, waste collection and disposal, storm-water management); public works (roads and bridges, dams and canals, ports and airports, railways, transit and other transportation services); community facilities (schools, parks, recreation, hospitals, libraries, prisons, civic buildings); telecommunications (telephone, fax, internet, radio, television, satellites, cable, broadband, multimedia); and knowledge networks (universities, research institutes, corporate research and development, government, philanthropic foundations, libraries, museums, archives).

The function and impact of infrastructure is better understood based on its spatio-temporal networks and organisation. Indeed the quality and accessibility of requisite physical, social, and economic infrastructure is a tool for measuring the development level and even the classification of a community (such as slum, village or city) by both national and international bodies (Ghana Statistical Service (GSS), 2005; Baabereyir, 2009; Owusu & Afutu-Kotey, 2010).

On the other hand the development of a society also affects its infrastructure positively or negatively. Hence, it is important that among other things infrastructures are well managed, efficient, sufficient, and accessible to all who need it and are sustainable in the long term. However due to inadequate funding, lack of maintenance, lack of improved technology and long term planning, the realisation of these goals have often been impossible in developing nations (Caves, 2005; Agyeman, 2009). Infrastructural development in urban centres, particularly in

developing nations often lags behind demand and population growth (Herbert & Thomas, 1990).

In general, the available social development indicators in the Niger Delta region of Nigeria point to inadequate, unavailable and poor quality infrastructure and social services from water to telecommunications. The long neglect of this region's development poses a great barrier to attaining socio-economic transformation and poverty alleviation (Niger Delta HD Report, 2006). A study carried out by Ugochukwu (2008) in the Niger Delta region of Nigeria revealed that some forms of developmental projects were going on in their communities. They include market stalls, cottage hospitals, road construction, and provision of borehole water. All these projects according to the Ugochukwu (2008) were being carried out by the oil companies operating in their communities. However, these facilities were not available in some communities, and where they are available do not serve the majority of the local populace.

According to O'Rourke and Connolly (2003), the Niger Delta is the richest part of Nigeria in terms of natural resources. The area has large oil and gas deposits, as well as extensive forests, good agricultural land and abundant fish resources. Despite the tremendous natural and human resource base, the region's potential for sustainable development remains unfulfilled and its future is being threatened by environmental degradation and deteriorating economic conditions which are not being addressed by present policies and actions. Nwankwo and Irrechukwu (1981) also state that fifty years of oil development have not brought significant benefits to the Niger Delta region. Resource-use decisions are being driven by a lack of development, poor

healthcare and social facilities, stagnant agricultural productivity, and rapid population growth. For the purpose of this study, infrastructure includes transportation, housing and water and energy supplies.

### **Transportation**

Physical infrastructure includes the tangible structures such as roads, airports, ports, rail ways, telecommunication and communication among others. The growth of cities together with trade and industry made it important to develop efficient and fast transport modes to link the various parts of the city as well as surrounding towns (Pacione, 2001). The underlying urban transportation structures in a city work to facilitate the movement goods and people. An efficient and sustainable transportation network ensures equitable access to necessary social amenities and facilitating business, trade and general economic growth whilst reducing environmental impacts (Caves, 2005; Williams, 2005; Agyeman, 2009).

Three main forms of transport can be observed: land, sea and air. The means of transportation particularly relevant to this study are roads (intercity and intra city links).

Intercity roads are responsible for majority of the people and goods transported within the country as it is the most developed, most accessible and cheapest. In addition, roads facilitate movement between neighbourhoods and between the city centre and its outskirts although in large metropolitan cities, travel time is longer and hence rail transport to and from the city centre is more desired (Williams, 2005).

Some roads are too narrow or poorly connected for effective public bus transport. Third world countries including Ghana usually lack a well developed and formal public transport system. They are often replaced by para-transit transport services operated by private bus companies (Pacione, 2001). Intra-city public bus transport is also poorly developed and given the increased numbers of private cars which take more space without being able to transport more people, this causes traffic congestion (Herbert & Thomas, 1990; Agyeman, 2009).

There is also the problem of increased deterioration of the roads contributing to road accidents as the roads are not well suited for cars and especially, heavy trucks. Unfortunately, intra-city road networks are often poorly constructed and poorly maintained. Other problems include environmental pollution and uncontrolled road accidents and restricted mobility (Williams, 2005).

Some of the proposed solutions to these problems include the development of sustainable public transport, urban compaction, strategic land use planning, provision of affordable energy efficient and demand oriented transportation, encouraging the use of non-motorised and rail transport (Pacione, 2001; Williams, 2005; Kenworthy, 2006).

Ugochukwu (2008) mentions that because of the terrible terrain of the Niger Delta region, the major mode of transportation is canoe and ferry, and to a lesser extent automobiles. The road networks in the region are in deplorable states, and this has worsened the hardship of the local people. Although, urban road transportation development has recently been accorded some priority attention, and less regards has

been shown for rural transportation, especially water transport, which the majority of the rural populace depend on. The author observed during the fieldwork that road transport in most parts of the Niger Delta region was hectic and terrible, and a source of misery to the people of the region. Because of the horrible and deplorable state of roads in the region, people trek long and excruciating distances before getting to their local government headquarters.

Some of the oil companies have embarked on construction of rural roads in some parts of the Niger Delta region as part of their contribution in the development of the region. However, most of the roads constructed by the oil companies lead to their oil facilities in the local communities.

### **Housing**

Housing influences a significant aspect of urban behaviour, access to amenities, quality of life, social behaviour and attachment or meaning (Herbert & Thomas, 1990).

Brand (1995) identified 6 components of a house. They are the site (the location) of the building, the structure of the building, the skin (the exterior) of the building, services (such as water supply and electrical wiring), the space plan which refers to the partitioning of the building and finally the stuff which encompasses furniture and interior decorative items.

Improper location of houses creates both environmental, health and transportation problems for both users and the general public. Urban sprawl further affects

transportation as government is forced to extend roads and amenities to the new settlements, further cutting down on the ability of government to use the limited funds to maintain existing roads and hence many governments are trying to increase inner city compaction while reducing urban sprawl (Herbert & Thomas, 1990; Williams, 2005). The facades and exterior designs of buildings also add curb appeal and value to it. However, the most important aspect in the day-to-day running of buildings is the services in a building. For example, sewage, waste disposal, water supply, power supply and transportation access which all contribute to the viability and long term value of a house. Buildings that do not have access to these important services are often not appealing to high end residential consumers and most importantly, first class residential areas usually have the best of all these components (Potter & Lloyd-Evans, 1998; Satterthwaite & International Institute for Environment and Development, Human Settlements Programme, 2002; Songsore, 2003; Baabereyir, 2009; Owusu & Afutu-Kotey, 2010). Offices often tend to be concentrated within the city centre although to a smaller extent some may be located within suburbs (Herbert & Thomas, 1990)

A careful examination of all these constituents reveal that the quality of the house, its meaning to the user, adaptability of the house between users and across time, and the quality of life of users all depends on the overall quality and functionality of all these parts (Brand, 1995; Brand, 2009).

In order to encourage low income earners and first home buyers to own a house and also reduce the development of slums, unplanned and uncontrolled suburban housing development, buildings must not only be viewed as physical objects or symbols of

personal achievement. (Brand, 1995; Brand, 2009). Housing projects, if approached properly, are tools for facilitating economic and social development by creating forward and backward linkages through the use of self help projects and affordable housing using local materials (Skotte, 2004).

Ugochukwu (2008) mentions that housing in the rural communities in the Niger Delta region is predominantly of poor quality especially in the swamps and creeks where dwellings are made up of mud walls. A survey carried out by NDES (2000) revealed that 30.4 per cent of houses in the region had mud walls, 53.8 per cent had make-shift buildings, and 46.6 per cent had a strip foundation. The flooring materials are predominantly concrete followed by mud.

### **Water and Energy Supply**

According to Ugochukwu (2008), information from the National Bureau of Statistics reveals that water in the majority of Niger Delta states comes from unsafe supply facilities, including rivers, lakes or ponds, unprotected wells and boreholes. The Bureau classifies available sources of potable water for household consumption as pipe borne, untreated pipe, borehole, protected well, unprotected well, river/lake/pond, vendor trucks and other categories. In five of the nine states in the region: Akwa Ibom, Bayelsa, Cross River, Ondo and Imo, water problems are very acute and result in supplies of unsafe water in more than 50 per cent of the cases (NDES, 2000). An NDES Report (2000) covering the states of the Niger Delta region, except Cross River State, also found that most settlements depend on untreated surface water and wells, which leads to health problems from waterborne diseases. The report revealed that poor access to adequate drinking water has had serious

implications for the general poor health, environment, economic activity and sustainable livelihoods in the Niger Delta region. The lack of potable water in rural areas, as well as severe shortages of pipe borne water in urban centres necessitates new policies that favour community involvement and participation in devising and managing water supply systems in a sustainable manner.

Ugochukwu (2008) mentions that potable water supplies (boreholes) in the Niger Delta region are provided by the oil companies operating in the region. In his study, most of the respondents voiced their outrage at government total neglect; they said most of the infrastructural facilities available in their communities were provided by the oil companies and non from the local, state or federal governments.

During floods, which in some areas last for over half the year, drinking water often becomes contaminated causing high levels of bacterial, viral, and parasitic outbreaks (Linden, 1991). Water borne diseases are also a severe problem during the dry season because water supplies are often inadequate to dilute contaminants. This shows that water related diseases exert an enormous social and economic toll on the Niger Delta region. These problems are exacerbated by the fact that both urban and rural infrastructure is poor – water supply, and sanitation levels are very low. According to the report from Rivers State Ministry of Health, between 20-25 per cent of the rural communities and 45-50 per cent of urban centres have access to safe drinking water in the Niger Delta region. The report went further to indicate that adequate sanitation is available only to 20 per cent of the residents in the region compared to the national average of 28 per cent. No municipal wastewater treatment facilities exist in the region.

In relation to electricity, Ugochukwu (2008) states that the general sources of household fuel in the Niger Delta region are electricity, kerosene, gas, charcoal, firewood, crop residues, animal wastes and others. According to Ugochukwu (2008), data from the Federal Office of Statistics of Nigeria shows that across the region, on average, only 34 per cent of people use electrical lighting; 61 per cent use kerosene or lantern. Less popular sources of lighting are gas (1.2 per cent on average), generating sets (1.5 per cent), batteries (0.2 per cent), candles (0.6 per cent), firewood (1.8 per cent) and others (1.2 per cent). The primary energy source in the region is firewood (a mean of 73 per cent), followed by kerosene (24.8 per cent) and gas (1.2 per cent).

#### **2.4 Conceptual Framework: Key Gaps and Unanswered Questions**

Recent events in Ghana show that interest in immigration issues in the country is assuming higher stakes. The country enjoys political stability, relative peace and security. More importantly, the country has discovered and is currently producing oil in commercial quantity in the south western corner. All these factors are pointers of the possibility of increase in labour migrant (immigrants and in-migrants) presence especially, in the petro-chemical industrial areas in Ghana. As such, migration research in Ghana can experience renewed interest which is likely to create sophistication in terms of themes and issues. Upon careful search through related literature, it has been identified that previous researchers' based their work on topics such as, Oil-Led Development: social, political and economic consequences (Karl, 2007), The emerging oil industry in Ghana: Socio-economic and Environmental impact on the people of Cape Three Point (Manu, 2011), The impact of oil and gas activities on fisheries in the Western Region of Ghana (Egyir, 2012) and Oil Discovery in Ghana: A Blessing or a Curse (Annan, 2011) but no particular attention

is paid to oil discovery in relation to migration and the consequent infrastructural challenges.

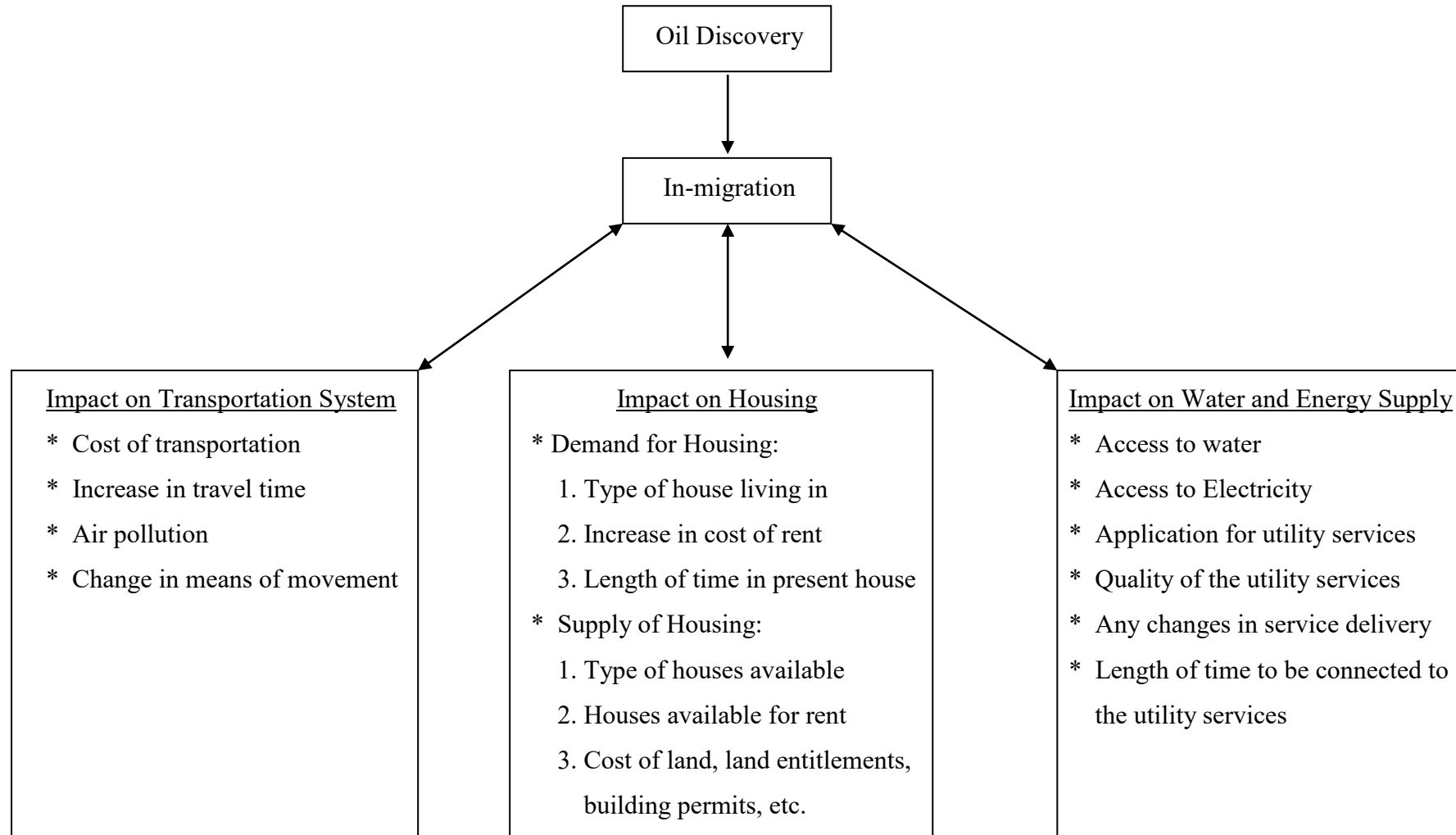
The conceptual framework for the study is built on four themes. Figure 1 shows that the first theme assesses the impact of oil discovery on migration into the Sekondi-Takoradi Metropolis. Here the researcher wishes to measure how oil discovery in the Sekondi-Takoradi Metropolis has led to in-migration in the metropolis. As shown in Figure 1, the second theme measures how migration into the Sekondi-Takoradi Metropolis is affecting the transportation system in the metropolis. Under this theme, the researcher assesses the impact on transportation in the areas of cost of transportation, increase in travel time as a result of the large number of people living in the study area, air pollution and the changes in the means of transport.

The third evaluates how the migration into the Sekondi-Takoradi Metropolis is affecting the demand and supply of housing services in the metropolis. This is also vividly illustrated in Figure 1. In evaluating the demand for housing, the study considers type of housing living in, increase in cost of rent and length of time in present home. On the other hand, the supply of housing looks at the types of housing available, the houses which are available for rent and cost of land, land entitlements, building permits and many more.

The fourth and final theme assesses the extent to which the migration affects the water and energy supplies in the metropolis. As shown in Figure 1, here the concentration on access to water, access to electricity, application for utility services, quality of the

utility services, changes in service delivery and length of time to be connected to utility services.

Figure 1: Conceptual Framework



## **2.6 Summary of Literature**

This chapter reviewed literature relevant to the study. Ghana joined the league of oil producing countries in 2010. The history of oil and gas exploration in Ghana can be classified into four distinct phases i.e. phase I to phase IV. When oil or any other resource is discovered in commercial quantities in any region of the world, it mostly results in migration. Several theories of migration have been propounded. However, for the purpose of this study only the migration systems theory was considered in detail. Migration poses some infrastructural challenges in the receiving area. The country enjoys political stability, relative peace and security. More importantly, the country has discovered and is currently producing oil in commercial quantity in the south western corner. As such, migration research in Ghana can experience renewed interest which is likely to create sophistication in terms of themes and issues. The conceptual framework for the study was built on four themes. The first theme assesses the impact of oil discovery on migration into the Sekondi-Takoradi Metropolis. The second theme measures how migration into the Sekondi-Takoradi Metropolis is affecting the transportation system in the metropolis. The third evaluates how the migration into the Sekondi-Takoradi Metropolis is affecting the demand and supply of housing services in the metropolis. The fourth and final theme assesses the extent to which migration affects the water and energy supplies in the metropolis. The next chapter discusses the study area and the methods and procedures used in carrying out the study.

## CHAPTER THREE

### THE STUDY AREA AND METHODOLOGY

#### 3.0 Introduction

This chapter describes the research perspectives, presents a critical examination of the study area, research design, population, sample and sampling techniques, data collection instruments used, data collection procedure and data analysis plan.

#### 3.1 The Study Area

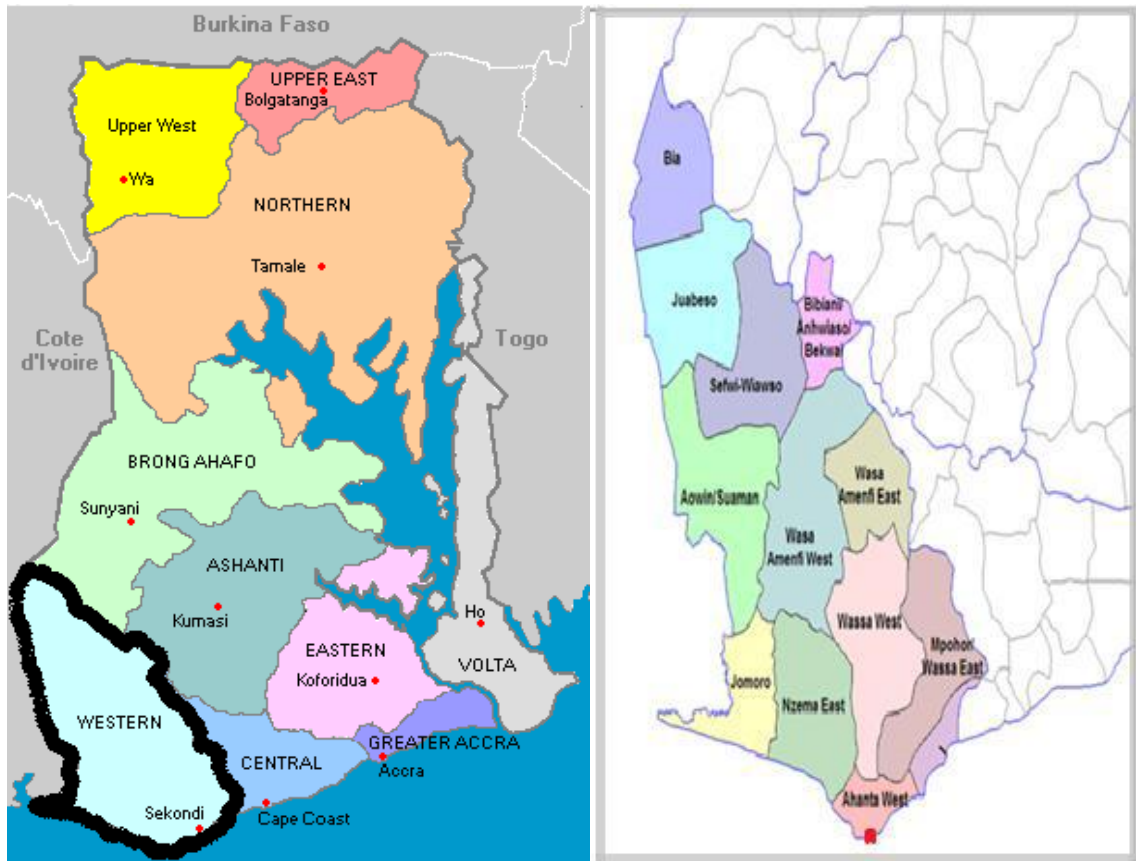
The main area for the crude oil and gas exploration and production is off the coast of the Western Region of Ghana and borders with the coast of La Cote D'Ivoire. The Western Region of Ghana covers an area of about 2,391 square kilometres representing approximately 10% of Ghana's total land area and lies in the equatorial climate zone that is characterized by moderate temperatures with an average annual rainfall of about 1,600mm (ModernGhana, 2009). The Jubilee field, which had its name assigned by the government of Ghana in commemoration of Ghana's golden jubilee celebration in 2007, is the main field of operations. It is located within the Jubilee Unit Area and approximately about 60km from the nearest coast of Ghana. Under the United Nations Convention on the Laws of the Sea (UNCLOS) of which Ghana is a signatory, Ghana claims rights within 12 nautical miles (nm) of territorial waters and a 200nm Exclusive Economic Zone (EEZ). So the Jubilee field is actually outside Ghana's territorial water but inside the 200nm Exclusive Economic Zone. The Jubilee Unit Area covers part of the Deepwater Tano and West Cape Three Points licence areas. It lies on the continental shelf offshore Ghana in water depths of between 1,100m and 1,700m and covers an area of approximately 110km<sup>2</sup>. The continental shelf has a generally regular bathymetry with isobaths running parallel to

the coast. It has its narrowest (20km wide) off Cape St Paul in the east and at its widest (90km) between Takoradi and Cape Coast in the west. The shelf drops off sharply at about the 75m depth contour. On the continental shelf, seabed sediments range from coarse sand on the inner shelf to fine sand and dark grey mud on the outer shelf. Sediments on the shelf and upper continental slope are predominantly derived from erosion of rocks from land, with smaller amounts of iron silicate sediments, and biogenic carbonate from mollusc shells. The seabed in the Jubilee field comprises soft to firm clays and silts that form a generally smooth seabed that slopes to the southwest. The Jubilee Unit Area is crossed by three submarine channels, which appear to be localized drainage points off the continental shelf. All three channels exhibit an active central gully that meanders within each channel. The figure 2 below demonstrates the locations of Jubilee field and Jubilee Unit Area.

The Western Region with a population of 2,376,021 is made up of 1,188,247 females and 1,187,774 males. In the region, about 42.4% of the population lives in the urban centres whereas 57.6% dwell in rural areas (GSS, 2010).

According to STMA (2010), Western Region is the largest producer of cocoa, rubber and coconut and one of the major producers of palm oil, with agriculture accounting for 58.1% of employment in the region. The region's rich forest resources also make it one of the largest producers of timber and wood based products. The region also has the highest concentration of individual gold mines in the country, while the nation's active bauxite and manganese mines are to be found entirely within the Western Region. In spite of these blessings, it seems the region has not benefited much from its share of the natural resources.

According to STMA (2010), Cape Three Points (Akyinkyin) is a small peninsula in the Ahanta West District of the Western region where Ghana has made the oil and natural gas discovery. Forming the southernmost tip of Ghana, it is located between the coastal towns of Dixcove and Princes Town. Cape Three Points is known as the "land nearest nowhere" because it is the land nearest a location in the sea which is at 0° latitude, 0° longitude and 0° altitude (the distance is about 570 km). It is best known for its lighthouses, the first of which was constructed in 1875 by the British as a navigational aid for trading vessels sailing through the Gulf of Guinea. It is a small fishing community but popularly known for being the Western Cape along the shores of the country. Some communities close to Cape Three Points are Princes Akatakyi, Akwalaa and Light House. The main occupation of the people in these communities is fishing. Women engage in the production of staple crops such as cassava, maize, yam and other vegetables for subsistence consumption. A number of women are also fish mongers who buy fish from the shore, smoke them and sell them to middle-women. In some few cases one would find some fisherwomen who go to sea but this practice is not common even though it is also not a taboo. The communities closer to the oil and gas exploration areas have limited social amenities (STMA, 2010). For example a visit to the communities revealed that the roads are in bad state, there is no portable water for the people, and no hospital. According to the people they were expecting that road construction for example should be part of the exploration because big trucks have started plying the road during the exploration process (STMA, 2010).



**Figure 2: Map Showing Ghana (left) and Western Region (Right) showing the Study Area**

### **Housing in the study area**

Houses in the Sekondi-Takoradi Metropolis are mostly constructed and owned by individuals and families as well as Estate Developers, such as Regimanuel Gray, State Housing Company and SSNIT. In recent times however these houses have been sold out to individuals. Even so, over 90 % of housing stock in the metropolis are constructed and owed by individuals and families. There is thus a shortage of housing stock making rent very high (STMA, 2010).

According to GSS (2013), the total housing stock in the metropolis is 60,705. The metropolis, especially in Takoradi, has very huge compound houses (54.2% of total dwelling units) with single rooms and shared toilets and bath room facilities. These

houses are often rented out to low income families with some families living in single rooms. This stock of houses could be found in communities such as Amanful, Quarters, Essikafuabantem No 1, Kwesimintsim, New Takoradi, Effiakuma, and Bakaekyir. These compound houses were built over 30-50 years ago and most of them have not seen adequate maintenance leading to poor and unsafe conditions. Another type of dwelling is separate houses which account for 16.0 % and semi-detached house 16.4%. Flat apartment also account for 11.0% while hut building are only 2.1 % (GSS, 2013).

According to STMA (2010), generally residential areas in the metropolis can be classified into four classes and they are as shown in Table 1 below:

**Table 1: Residential Areas in STMA**

<b>Residential</b>	<b>Explanation</b>
First Class	They are mostly located in land areas that are State-owned. Examples of such areas are Palm Lands Estate, Sekondi Ridge, GBC Area, Windy Ridge, Airport Ridge, Chapel Hill, Beach Road, Anaji Estate. These areas have good roads, adequate power supply and good water and sanitation services. Plot sizes are large varying from half an acre to over one acre. Population densities are generally low and range between 30-40 persons per acre. Good landscape designs as well as clean environment characterize these areas.

<p>Second Class</p>	<p>Within the metropolis, second class residential areas are found in suburbs such as New Site, Tanokrom, Aprembo Apollo, West Fijai Ridge, Effia Nkwanta, Kweikuma, Essikado, Takoradi, Bakaekyir, Sekondi, Butumagyebu Ridge, Assakae New Site, Mpatado New Site, Whindo New Site, Mpintsin Ridge, Adiembra Ridge, Adientem New Site, Ntankoful New Site and Effia New Site. These areas have fairly good roads. Utility facilities such as Water, Electricity and Telecommunications are also available. Plot sizes are smaller than what pertains in the first class residential areas and they range between 0.20 to 0.50 acres. Population densities are relatively higher and stand between 40-80 persons per acre. The environment within the Second class residential areas is fairly clean with minor floral activities.</p>
<p>Third Class</p>	<p>These are poorly serviced in terms of water, power and telecommunication facilities. Large portions of such areas are inaccessible to vehicular traffic. Plot sizes are very small and less than 0.20 acres. Examples of such areas are New Takoradi, Kwesimintsim, Aprembo, Effia, Essaman, Ekuasi, Adiembra Estate, Butumagyebu, Ketan, Ahenkofikrom, Kojokrom, Mpintsin, Essipon, Ngyiresia, Nkotompo, Ngyamoabakam. In sharp contrast to the first and second class residential areas, population densities are high and ranges between 80 to 150 persons</p>

Fourth Class	These are traditional or indigenous settlements that are poorly served in terms of basic social amenities. Such settlements are basically unplanned leading to difficulties in physical accessibility. These 4 <sup>th</sup> class residential areas include; Assakae, Whindo, Adientem, Mpatado, Anaji Fie, Eshiem, Twabewu, Sofokrom, Anoe, Ntankoful, Kansaworodo, Mampong and Diabene. The distinguishing feature between 3 <sup>rd</sup> and 4 <sup>th</sup> class residential areas is the housing type or condition as well as the population densities
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### **Transportation system in the study area**

The twin city of Sekondi-Takoradi currently has a road length of 690Km of which 381km are sealed with either asphalt or surface dressed whilst 308km is either earth or gravel roads. The city has a close to a 50/50 split between surfaced and non-surfaced roads. The current growth of the city in view of the oil find has added some new earth roads which are not captured in this report because it is not inventoried. The attendant growth of warehouses within and without the boundaries of the city is also affecting transportation within the city. In view of the above coupled with increase in the floating population into the city, and its effect on road infrastructure the need of a transport plan has been raised. The increasing traffic on the already existing corridors serving the city calls for a quick review of the current situation. The 2005 Transport plan outlined the future thrust of road transport in the city but the oil dimension calls for a quick review and a development of a transport plan that will take care of the core functions of the future growth of the city.

The current capacity of our arterial roads has reduced the level of service on the roads thus increasing operating costs thus raising the cost of doing business in the metropolis. The 4 major corridors within the twin city are:

- The Effia Nkwanta Hospital – Paa Grant Road
- The Sekondi Bypass (Kwame Nkrumah Round About – Ketan Junction)
- The Kwame Nkrumah Round About. – Apremdu Road ( To Agona)
- The Kansaworodo Bypass (Nkroful – Apollo Jn.)

The current traffic levels at peak time flow is bound to increase with its attendant traffic delay problems. It is therefore an issue that needs an immediate attention and action (STMA, 2010).

## **Water and energy supplies**

### **Water**

Ghana Water Company Limited (GWCL) is responsible for the supply of potable water for domestic, institutional, industrial and commercial purposes in the metropolis. It is a state-owned organisation solely responsible for Urban Water Supply in Ghana. The scope of service is limited to urban communities having population of 10,000 and above while communities with lower populations are supplied by the Community Water and Sanitation Agency (CWSA).

The current total daily demand in the metropolis (including domestic, industrial, commercial, institutional, water for fire- fighting/control and losses) stands at 13.0 million gallons a day (mgd). This is in excess of the combined/total water production of about 7.0 mgd obtained from the two (2) Headworks at Daboase and Inchaban,

although the two Water Treatment plants have installed capacities of 6mgd and 4mgd respectively. The demand is expected to rise with the oil find in the region as companies set up in the region and more related activities occur (STMA, 2010).

The production and supply of water in the metropolis is fraught with severe constraints and challenges which the reasons are for the lower than expected level of service. These include low levels of production, lower quantities of extractable raw water during the dry season, frequent power interruptions, unplanned and uncontrolled housing development, pollution and/or contamination of raw water sources by illegal miners, limitation in extent of distribution networks resulting in long service connection pipelines, unwillingness and delays on the part of customers/consumers to pay bills promptly and illegal connections (water theft).

Plans/proposals to increase water production levels in the metropolis have been prepared by GWCL. However, the necessary funds have not yet been secured for the required capacity expansion works (STMA, 2010)

### **Electricity**

About 95% of the communities in the metropolis are connected to the National grid from the Akosombo Dam (STMA, 2010). There has also been some level of improvement and extension works had been carried out in some areas already on the supply lines. These areas include Kojokrom, Essipong, Butumagyebu, Apremdo and others. There are still few communities in the metropolis without electricity. These communities are Akromakrom, Ahanta Abasa, and newly schemed areas also require appropriate transformers to meet the needs of the communities.

Presently some areas have been identified for improvement and extension works to be carried out under ECG development jobs 2010 and the Ghana Energy Development and Access Project (GEDAP). The areas earmarked for improvement and extension of electricity within STMA include; Adiembra, New Site, Anaji, Ntankoful, Assakae, Kansaworodo, Nkroful Ridge, Mpintsin, Kweikuma, BU Ridge, Mount Zion, Lagos Town, Rebso Hills, Harmony Ridge and Anoe. It is however unfortunate to note that most of the street lights are currently not working making the city very dark during the night (STMA, 2010).

### **3.2 Research Design**

The research design for this study is qualitative. Qualitative research approach was deemed appropriate for this study. This is because relatively little research had been done on oil discovery, migration and infrastructural challenges in the Sekondi-Takoradi Metropolis. Again, qualitative approach was suitable because it would permit an in-depth exploration of respondents' views.

Furthermore, qualitative research was appropriate for this study because this is relatively an unexplored topic in Ghana. As Strauss & Corbin (1990) state, qualitative methods are useful to unveil knowledge and to facilitate our understanding on phenomenon that little is known about. Furthermore, Bailey, White & Pain (1999) stated that since validity is an essential element, the researcher should attempt to accurately represent findings.

Qualitative research method was ideal for this project, because it gave a deeper understanding of the topic and helped in obtaining an edge in knowing the relevance

well. As the data obtained through qualitative is the interviewees own responses, it helped in gaining a broader perspective about the topic. The exact responses pertaining to the literature review helped in linking the data well.

Qualitative methods provide a deeper analysis and allows for a richer and an in-depth understanding of how people make meaning of their situation or interpret phenomena (Denzin & Lincoln, 1994). Denzin and Lincoln (1994) say that qualitative research generates the socially constructed nature of reality, the intimate relationship between the researcher and what is studied, and the situational constraints that shape inquiry. They seek answers to questions that stress how social experience is created and given meaning. In contrast, quantitative studies emphasise the measurement and analysis of casual relationships between variables, and not processes. As further maintained by Patton (2002), if the researcher uses a quantitative research approach, she would be constrained by its requirements of standardised measures and pre-determined response categories to which numbers would have already be assigned.

The goal of qualitative research is to understand the research topic more explicitly, from the perspective of the interviewee, and to understand how and why they have arrived at this perspective. Cooper and Schindler (2006) adds that, qualitative research methodology largely depends on recounting, understanding and explaining complex or interrelated phenomena, namely, the methodology is to understand multi-dimensional, dynamic picture of a subject of study.

### **3.3 Population**

The population or universe of research may be viewed as the total number of all units of the phenomenon to be investigated that exists in the area of investigation, that is, all possible observation of the same kind. It represents the portion of the universe accessible to the investigator, and covers the total set of individuals, objects or experiences with familiar characteristics (Kumekpor, 2002; Twumasi, 2001). For this study, the targeted and accessible population included the residents, workers, and key informants in Sekondi-Takoradi and the officials of the Sekondi-Takoradi Metropolitan Assembly.

### **3.4 Sample and Sampling Procedure**

The sampling strategy incorporates the population, the universe, the acknowledged sample and data, where the universe establishes the possible respondents of that proportion of the number of units, chosen for the investigation. It involves a careful survey of a chosen proportion of the units concerning a phenomenon, so that knowledge gained from the study by the part will be extended to the whole. Sampling therefore, is the use of definite procedures in the selection of a part for the express purpose of obtaining from its description or estimates certain properties and characteristics of the whole (Kumekpor, 2002).

To gather sample for the study, the convenient sampling method was used, where the population was sub-divided into smaller groups of two. This included the residents, workers and key informants of Sekondi-Takoradi and the STMA officials. In this regard eighty percent (80%) of the sample, constituting forty (40) respondents were conveniently selected from the residents and workers in the area and twenty percent

(20%) of the sample, representing ten (10) respondents came from the STMA officials and other officials of the utilities companies. Therefore, fifty (50) respondents became the sample for the study.

### **3.5 Data Collection Instrument**

The main instrument used was the open-ended interviews, developed by the researcher. Many scholars have argued that this approach is an effective way of obtaining good descriptive substance and more conceptual ideas (Padgett, 1998; Gall, Gall & Borg, 2007; Kumekpor, 2002). It also makes interviewees more comfortable since it allows them to feel part of the study; it establishes participants as experts on the subject and encourages them not only to tell their story but also to share their ideas, observations and concerns (Padgett, 1998; Gall, Gall & Borg, 2007).

Additionally, to ensure a systematic interview process, a semi-structured interview protocol was used in collecting data for this study. An “interview guide approach” proposed by Patton (2002) was created by the researcher to answer the research questions. According to Padgett (1998), an interview guide contains an initial set of questions that are to be discussed during the interview. Given that this study employed multiple groups, interview guide helped to maintain consistency in data collection and enhanced comparability of responses between the groups – individuals, key informants and focus groups.

According to Kvale (2007), interviews are one of the major approaches in collecting data in qualitative research. Kvale (2007) further states that an interview is a conversation that has a structure and a purpose determined by one party, the

interviewer. He also states that an interview is a professional interaction that goes beyond the spontaneous exchange of views as in everyday conversation; it becomes a careful questioning and listening approach with the purpose of obtaining thoroughly tested knowledge. Besides, compared to other methods, interviews are relatively economical in terms of time and resources (Silverman, 2006).

Apart from interview being economical, the researcher also believed that interview was the best method for her study since she was interested in hearing what the participants felt about the oil discovery, migration and infrastructural challenges in the Sekondi-Takoradi Metropolis, and also believed that this was the right method to achieve that. According to Silverman (2006), in order to decide which method is appropriate for the research questions, one should ask oneself what one is interested in, and the researcher is more interested in what her participants have to say rather than what they were doing.

For this study, the researcher chose to use semi-structured interviews because this form of interview ensured that the researcher obtained all the information needed without forgetting questions and at the same time gave the participants freedom to respond and illustrate concepts. This is because with semi structured interview, the researchers know most of the questions to ask but they cannot predict the answers (Morse & Field, 1995). Another advantage with semi structured interviews is that it allows the researchers to stay open to new and sometimes unexpected issues that emerge during the interview (Georgescu, 2009).

### **3.6 Data Collection Procedure**

Primary data were sought in order to get the needed information and to achieve the objectives set for the study. The data was gathered through the interviews with the participants.

In order to collect primary data for the study, the researcher sought permission from the STMA officials and the people in the study area. Participation was entirely voluntary. Interviews were conducted over a definite period of time. For the Sekondi-Takoradi Metropolitan Assembly official participants, the interviews were conducted at their offices. The research site for individual participants varied and participants were met in places which they proposed. The researcher met with some participants in their homes; others at their workplace, shops, local market centre, barbering/beauty shops, internet cafes and restaurants. Prior to the interviews, the researcher arranged with individual and key informant participants as to where they felt comfortable for the interview to be held. The rationale behind this was to ensure that participants were relaxed and comfortable, while giving them a high sense of confidentiality that would boost honest responses to interview questions. Interested potential participants were asked preliminary questions to ascertain their qualification for the study. The researcher described and read the aims and purpose of the research to potential participants, addressed all questions and concerns and obtained informed consent, prior to the interview. The interviews were conducted in English and Twi depending on which group of participants were being interviewed.

The interviews were carried out in the form of conversation and lasted for almost a week. The semi-structured interviews carried out with the participants concentrated

on the key objectives of the study. The semi-structured process allowed the researcher to probe answers and build on responses. This approach was appropriate and aligned to the reasons stated by Saunders, Lewis and Thornhill (2007), that “...where it is necessary for you to understand the reasons for the decisions that your research participants have taken, or to understand the reasons for their attitudes and opinions, it will be necessary for you to conduct qualitative interview”. Thus the researcher managed to capture participants’ perspective of the oil discovery, migration and infrastructural challenges in the Sekondi-Takoradi Metropolis. The focus areas of the interviews were to:

- Obtain, in the participants’ own words, their knowledge of the oil discovery and its impact on the trend of migration into the Sekondi-Takoradi Metropolis
- Obtain participants’ views on the transportation challenges facing the people of Sekondi-Takoradi Metropolis as a result of migration into the region
- Elicit from the participants’ their views about how the migration into the Sekondi-Takoradi Metropolis was affecting the demand and supply of housing services in the metropolis
- Understand the participants’ views about the extent to which the migration affected the water and energy supplies in the metropolis
- Obtain suggestions from participants on the measures or remedies to curb the negative implications or effects of the oil discovery and its consequent migration.

The researcher was conscious and mindful of non-verbal communication during the interviews. The researcher observed levels of appreciation of the subject matter from

the different or divergent perceptions. In all, the researcher interviewed all the fifty (50) participants sampled for the study.

### **3.7 Data Analysis Plan**

To easily reduce the whole bulk of data into analysable units, data was gathered for the un-coded questions and arranged in sequence. They were grouped in accordance with similar responses, and finally coded in words. After the research data had been grouped into its constituent parts, the nature of the material was studied to identify its relevant features and their correlation. Then discovering the pattern of responses, the researcher expanded on its social implications and used it to highlight the research problem. The analysis of data was in the form of examining and categorising. The researcher captured the data manually.

### **3.8 Summary**

This chapter described the research perspectives, presents a critical examination of the study area, research design, population, sample and sampling techniques, data collection instruments used, data collection procedure and data analysis plan. It gave an in-depth analysis of the study area in terms of housing demands, transportation system and water and energy supplies conditions pertaining in the area of study. Qualitative research approach was deemed appropriate for this study. The main instrument that was used was the open-ended interviews. Participation in the interview was entirely voluntary. Interviews were conducted over a definite period of time. The researcher met with some participants in their homes; others at their workplace, shops, local market centres, barbering/beauty shops, internet cafes and restaurants. To easily reduce the whole bulk of data into analysable units, data was

gathered for the un-coded questions and arranged in sequence. The analysis of data was in the form of examining and categorising. The researcher captured the data manually. The next chapter of the dissertation concentrates on the presentation and discussion of results.

## CHAPTER FOUR

### RESULTS AND DISCUSSION

#### 4.0 Introduction

The chapter presents the data gathered from the interview. Data were presented in relation to the objectives of the research. Basically, the data represent respondents' views about oil discovery, in-migration and infrastructural challenges.

#### 4.1 Findings/Discussion

**Table 2: Demographic Information**

Demographic		Frequency	Percentage
<b>Category of Respondents</b>	Residents and Workers	40	80
	Key Informants	10	20
	<b>Total</b>	<b>50</b>	<b>100</b>
<b>Age</b>	20 – 30	8	16
	31 – 40	15	30
	41 – 50	14	28
	51 – 60	13	26
	<b>Total</b>	<b>50</b>	<b>100</b>
<b>Educational Qualification</b>	Masters Degree	9	18
	First Degree	38	40
	Higher National Diploma	22	18
	SSSCE/WASSCE	20	10
	BECE	8	6
	No Education		8
	<b>Total</b>	<b>50</b>	<b>100</b>

Source: Field Report, 2014

Table 2 shows that the respondents were categorised into two; residents and workers in the Sekondi-Takoradi Metropolis and key informants. Out of the sample of fifty (50) respondents, forty (40), representing 80% were residents and workers and ten (10) of them, representing 20% were key informants. The key informants were the officials of the utility companies and the Sekondi-Takoradi Metropolitan Assembly who provided information for the study. These sample categories were carefully chosen in order that accurate information would be provided for the study in order to generalise to cover the entire population under study.

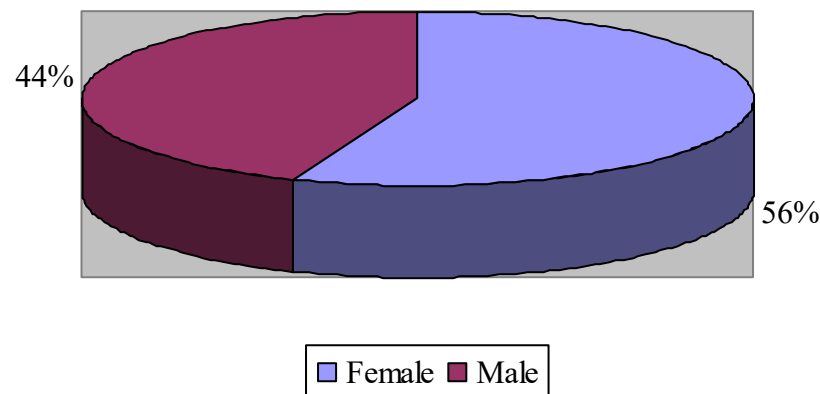
It is important to emphasise that respondents who were residents and workers were sampled from five different communities in the Sekondi-Takoradi Metropolis. The communities included Windy Ridge, Airport Ridge, Kweikuma (Esikafoammantem), Adiembra Estate and Anaji Fie communities.

The ages of respondents ranged from 20-30, 31-40, 41-50 and 51 - 60. Table 2 shows that the majority of the respondents fell within the range of 31-40 which represents 30% of the total sample size. The next range of age is 41-50 which represents 28% followed by 26% for the age range 51-60 and 16% of age range 20-30. In summary, the study indicated that respondents selected for the study were all from the working class and for that matter would be in the position to provide the needed information for the study.

The educational backgrounds of the respondents ranged from no education to Masters Degree. Out of the total number of fifty (50) respondents, twenty (20) respondents, representing 40% had First Degree, followed by nine (9) respondents each,

representing 18% who had Masters Degree and Higher National Diploma respectively. The rest are five (5) respondents, representing 10% were SSSCE and WASSCE graduates, three (3) respondents, representing 6% were BECE graduates and four (4) respondents did not have any formal education. It is obvious from the above statistics that majority of the respondents were literate enough to provide the needed information for the project.

Figure 3 shows that the number of respondents is made up of 28 females representing 56% of the total participants and 22 males, representing 44% of the total respondents. The results as indicated by figure 1 shows a fair representation of both sexes in the study. This is because anecdotal evidence available suggests that there are more females than males in the municipality.



**Figure 3: Gender of Respondents**

Source: Field Report, 2014

In terms of the marital status of respondents, six (6) respondents, representing 12% were single, twenty-eight (28) respondents, representing 56% were married and eight (8) respondents, representing 16% were divorced. Two (2) respondents, representing 4% were separated and four (4) respondents, representing 8% were widowed. Respondents came from different and divergent background in terms of their marital

status and the pieces of information they would provide would be representative enough for generalisations.

On the issue of employment, respondents ranged from business-people, judges, traders, farmers, IT specialists, production superintendents and artisans. Others are workers with Ghana Statistical Service, engineers, managers of utility companies and a planning officer with the Sekondi-Takoradi Metropolitan Assembly. There were, however, some few unemployed people who took part in the study.

It was revealed from the study that majority of the respondents had dependents. Dependents ranged from one (1) to as many as eight (8) including extended family members, especially parents.

The study also revealed that the married respondents interviewed were married before moving to the Sekondi-Takoradi Metropolitan Area. However, a few of them some married after moving to settle in the metropolis. In terms of ethnic groups, there were only few indigenous people among the respondents. Most of the respondents were not born in Sekondi-Takoradi but rather came to settle in the metropolis from different parts of the country. Apart from the few indigenes that took part in the study, the respondents came from, Axim, Komenda, Wenchi, Anfoega, Bawku, Prampram, Ajumako Bisiase, Half Assini, Cape Coast, Nyankomase and many more. They were made up of Ga-Adangme, Ewe, Akans and tribes of northern Ghana origin. Some came with their parents and others came to settle in the metropolis with their families.

## **4.2 Impact of oil discovery on migration in the Sekondi-Takoradi Metropolis**

### **4.2.1 Responses from Residents and Workers**

It was also revealed from the study that the respondents had lived in the Sekondi-Takoradi Metropolis between two (2) years and fifty (50) years. One (1) respondent even mentioned that she was born in Takoradi and had lived there for the past 48 years even though she is not an indigene. The key informants in particular have all worked in the area for not less than ten (10) years. This indicates that all the respondents had lived in the area long enough to provide the necessary information in relation to oil discovery, in-migration and the consequent infrastructural challenges if any.

Information provided by the respondents also revealed that some of the respondents were in the Sekondi-Takoradi Metropolis because of the search for jobs. Others were in the metropolis because of job postings whilst some were there because of the need to be closer to their families. When probed further, majority of the respondents believed that they would like to settle elsewhere such as Accra, Kumasi. Others however, were nostalgic wanting to settle in their hometowns.

Respondents were further asked the reason for their migrating into the Sekondi-Takoradi Metropolis. The responses show that some went there because of job postings and others went to the area in search of job opportunities. However, some of the respondents mentioned that they never migrated because they were born in the area whilst others mentioned that they needed to come with their parents at very tender age. There were a few others who mentioned that they moved to the area because of education. It is imperative to emphasise that of all the responses, the most

significant was the quest for job opportunities. Out of the sample of forty (40) resident and worker respondents, eighteen (18) representing 45% stated that they migrated to the area because of job hunt.

It is again important to mention that the respondents who mentioned that they migrated in search of job stated that they needed to move to the area around the time they moved because of imminent opportunities as a result of the oil discovery in commercial quantities in 2007 and subsequent production which began in 2010.

#### **4.2.2 Responses from Key Informants**

Ten (10) key informants were interviewed for the purposes of this study. The key informants were officials of the utilities companies, DVLA and the Sekondi-Takoradi Metropolitan Assembly officials. The respondents ranged from District Engineers, Managers and Planning Officers. The experiences in the work were more than ten (10) years. This means that there were in good position to provide the needed information for the study.

Interviewees were first asked to provide a brief history about the Sekondi-Takoradi Metropolitan Assembly. Information some of them provided indicates that the Sekondi Takoradi Metropolitan Assembly (STMA) started as Sekondi Town Council in 1903, under the Town Council Ordinance No. 26, until 1946 when Takoradi was brought into the administrative area of the Council. Respondents stated that in June 1962, Sekondi-Takoradi was elevated to the status of a city and is currently one of the Six (6) metropolises in Ghana. In 1994 the name of the Assembly was changed to Shama Ahanta East Metropolitan Assembly [SAEMA] through an LI 1316. The name

was later reverted to STMA again in 2008 through an L.I 1928 after Shama was carved out to attain the status of a District.

Objectives for the units where key informants were sampled ranged from electricity supply, water supply, land use management, development control, building permit issuance, receiving of complaints in respect of the land use, advising the public and the assembly and drivers and vehicle licences. Respondents were asked about the workload of their various units six years ago. Their responses suggested that the workload six years ago was not very demanding. The respondent from the Electricity Company of Ghana stated that six years ago, the population served was around fifteen thousand (15,000) with a staff strength of twenty-six (26). The official from the STMA mentioned, for example, that they had three planners (staff) handling the activities of their unit which reduces the workload. The demand for their services then, was also not too high. Again, the official from the DVLA stated that an average of 2,600 vehicles were registered per annum before the oil discovery in the region.

### **4.3 Oil Discovery and its Effects on Social Services/Infrastructure**

#### **4.3.1 Responses from Residents and Workers**

Respondents sampled for the study lived in different communities in the Sekondi-Takoradi Metropolitan Area. Notable among the communities include Windy Ridge, Airport Ridge, Kweikuma, Anaji Fie and Adiembra Estates. Most of the respondents were living in government buildings, rented apartments and family houses. Very few people (3 out of 40) were living in their own houses. The study revealed that the government buildings were put up by the state but the rented apartments were mostly put up by real estate developers even though some individuals have also put up the

houses for rentals. Respondents had been living in their present places of residence between two (2) years and forty-eight (48) years. When probed further about the number of houses they had stayed in within the metropolis, majority of the respondents had apparently not stayed in more than one (1) house in the metropolis. When asked why, those living in rented premises mentioned that they could not afford to move out of their present houses since the cost of renting new houses had suddenly increased. Others were living in their own houses and in government buildings and for that matter did not find the need to move to different houses.

Respondents were asked about the cost of rent for single room, chamber and hall and self contained apartments before the discovery of oil in the region in 2007 and subsequent production in 2010. The figures they provided ranged from GH¢10.00 to GH¢20.00 for a single room, GH¢30.00 to GH¢50.00 for a chamber and hall and GH¢80.00 and above for a two-bedroom self contained houses.

Respondents were again asked about the current cost of rent for single room, chamber and hall and self-contained apartments. The figures provided by the respondents varied significantly. This is because they mentioned that this was dependent on the community one lives in. The monthly rental ranged from GH¢40.00 to GH¢150 for a single room, GH¢150 to GH¢200 for a chamber and hall and GH¢300 and above for a two-bedroom self contained houses. Some of the respondents even mentioned that some two and three bedroom self-contained houses went for rentals in the region of GH¢500 and above per month. This shows that the cost of rent in the area is significantly high.

When respondents were probed further to find out when the cost of rent started increasing, majority of them mentioned that it started from 2007 when oil was discovered in commercial quantities in the Western Region of Ghana. They were of the opinion that the in-migration resulted in a shortfall in the supply of houses and this motivated landlords to increase rent in order to offer their houses to the highest bidders. Majority of the respondents believed that there were serious housing and accommodation challenges in the area due to now influx of people in the metropolis. Some of the respondents emphasised that decent accommodation in Takoradi these days are the preserve of the privileged.

In terms of the hospitality services, most of the respondents believed that even though the quality of hospitality services in the area have improved tremendously, the costs of these services are just unbearable. Some stated that because of the high demand, especially as a result of expatriates and other businesspeople, there is a shortage of these services, especially hotel services in the area. They mentioned that before the discovery of oil in the region, one could count the number of hotels in the metropolis. However, after the discovery of oil and subsequent production, several hotels have sprung up and continue to spring up in the metropolis. Some of the landlords have even resulted to pulling down their houses to put up hotels and guest houses to take advantage of the high demand for these services. For these reasons, the costs of these services are astronomically high, majority of the respondents mentioned.

Respondents were again asked about the cost of land, land entitlement and building permits. Majority of the respondents mentioned that the cost of land is just escalating. The minimum amount mentioned was GH¢4,000 per plot and the maximum amount

mentioned was GH¢12,000 per plot. One of the respondents stated that he acquired a plot of land in 2007 for GH¢400 but a plot in the same area now goes for GH¢4,000, that is 900% increase since 2007. In terms of land entitlement there was a general agreement amongst all the respondents that it was very difficult to acquire land entitlement these days if you do not pay huge sums of money for it. They mentioned that this was not the case before the discovery of oil in the area. Same thing was said by the respondents about the acquisition of building permits. However, the Metropolitan authorities vehemently disagreed to this claim.

In order to elicit information on the traffic jam in the metropolis, respondents were first asked the means of transport they used in the metropolis. Majority of the respondents used commercial transports (mini bus and taxi) to commute within the metropolis. Only few of the respondents used their own cars.

Majority of the respondents mentioned that their means of movement was relatively unhampered before the discovery of oil in commercial quantities in the area. Most of them believed that before 2007, there was rarely vehicular and human traffic in the metropolis. One could go to work and return from work without encountering and heavy traffic. Also, they stated that transport fares before 2007 was very low and affordable. Taxis charged fixed amounts throughout the metropolis. Most of the respondents opined that for a distance of between 5kilometres and 10 kilometres, they paid GH¢2.00.

However, they believed that this situation had changed significantly after the oil discovery and production in the region. Some mentioned that transport fares have

increased and continued to increase in the metropolis. Some mentioned the fact that because of the in-migration, many people have acquired commercial vehicles and some have even converted their private vehicles into commercial to take advantage of the booming transport business in the metropolis. For this reason, most of the respondents were of the opinion that traffic jam had become the order of the day in the metropolis. The peak periods mentioned by the respondents were 6:00am to 9:00am and 4:00pm to 6:00pm. Most of the respondents believed that the current traffic situation was affecting them negatively in terms of arrival at work early or home early to prepare of the next day. Some respondents believed that productivity was being affected. It is significant to note that most of the respondents attributed to current traffic jam in the area to the influx of people in the metropolis as a result of oil discovery and production.

When respondents were asked about the effect of this traffic jam on the metropolis and the nation at large, some of the respondents were of the opinion that it would affect the metropolis and the nation at large to the extent that productivity of the entire metropolis will slow down significantly since most workers would not get to work on time. Respondents generally advised the authorities concerned to expand the roads and build interchanges in the metropolis.

On the issue of supply of water and energy, respondents were first asked whether they had access to water and electricity in their houses. Almost all of them responded in the affirmative. Respondents believed that before the oil discovery, the numbers of clients served by the utilities companies were relatively low. They also opined that it took them a maximum period of one week to be connected to these services prior to

the oil discovery in the area. When they were asked how long it took them now to register and to be connected to these amenities after registration, their responses were divergent. Some mentioned two weeks and others mentioned one month after registration, especially for electricity. However, majority of the respondents did not have any idea because this was done by the landlords or the estate developers before they (respondents) moved into their houses.

Majority of the respondents were not satisfied with the quality of services rendered by the utility companies in recent times. Majority of them stated that the services of the electricity and water companies were nothing to write home about. According to them, water would not flow regularly and power outages made life unbearable for them. They were however quick to add that these challenges started about two years ago. Majority of the respondents stated that the quality of services some years ago were better than the current ones. When asked how the quality of services provided by the utility companies affected them, majority of them mentioned that this affected their businesses; their goods went bad, electrical gadgets got destroyed and all these retarded their progress as everything about the home and work depends to a large extent on water and electricity.

Respondents were again asked about the reasons for the change in the quality of services of the utility companies in recent times. There was almost unanimity on this question as they mentioned that this was due to increased demand as a result of rapid population growth, poor long term planning on the part of the city authorities, poor management. Some also mentioned that these companies have been overwhelmed by

the demands of these services as a result of population growth which was a consequence of the oil find.

#### **4.3.2 Responses from Key Informants**

When respondents were asked if the workload of their individual units had increased, they were unanimous in their answer. They answered in the affirmative stating that their workload had increased significantly. The ECG official for example mentioned that the current population they serve is 45,000 (i.e. an increase of 200%), however, the workforce has marginally increased to only fifty (50). This was putting a lot of pressure on the workforce, he stated. The District Head of the Ghana Water Company Limited also stated that, generally there has been a workload increase of about 30%. The official at the planning department of the STMA also stated that out of the three staff, two passed on and the workload was now solely on one person. For years now there had not been replacement yet. The unit now needed a minimum of five (5) planning officers, he mentioned. All the respondents attributed the increase in workload to the increase in the population of the metropolis with its consequent increased demand for their services. The DVLA official stated that currently, the workload of his outfit has more than doubled. As at the end of 2013, a total of 6,236 cars were registered in that year under review compared to 2,619 in 2007. Some of the respondents attributed these change to the oil production in the region which was encouraging people into the region especially the capital and putting pressure on utility services and land (industrial, commercial and residential). For instance, plans underway to construct King City Project by Estate developers were putting a lot of pressure on the planning officer attached to the STMA. The official from the Electricity Company also mentioned that this change could be attributed to increase in

demand for meters as a result of creation and expansion of already existing buildings, springing up of new buildings or sites so as to accommodate the increased number of people and businesses within the metropolis. He opined that the introduction of the prepaid metering system is another contributing factor for this change because it had its own challenges. The DVLA official stated that the challenges they faced were as a result of increased number of vehicles into the metropolis.

Respondents were again asked about the processes involved in securing services from them. The Electricity Company of Ghana official, for example stated that an applicant needed to buy an application form for two cedis (GH¢2.00), complete and attach site plan, any form of ID and submit to the Customer Relation Officer (ECG). The client would be scheduled for inspection after which would be given quotation (bill). The light will be connected same day after payment (Same Day Connection) provided the payment was made before twelve mid-day. The official from the Ghana Water Company Limited for example stated that applicant needed to write a formal application letter to the company with an attached site plan requesting for water. Inspection team will be deployed to determine the distance from the pipe to the site. A bill covering the cost will be prepared for the applicant. The company will prepare a requisition for the materials from the company's stores after payment then installation will take place. From then the client would receive bills at the end of every month. The planning officer of STMA, for example also mentioned that according to the L.I 1630 (1996) and the Local Government Act 462, Cap 84 (1945) requires everyone to own a land through the following processes;

- acquire a piece of land and have title
- submit the drawing or site plan

-the land should conform to the planning scheme of the area

-letter issued to clear land title. Inspection of land and then recommendation permit to the committee for approval, refusal or deferment.

When asked about how long the process took, most of the respondents answered that it depended on the client's submission of relevant documents and payments required to be supplied with the services. The respondent from the Water Company for example stated that it depended on the payment and distance from the site to the end of the pipe. However, averagely it takes about two weeks for it to be installed after payment. The planning officer of the STMA mentioned an average of 90 days. This shows that the period varies depending on the specific authorities.

Respondents were again asked the number of people they attended to in a day. Their responses showed that the number ranged from five (5) for Ghana Water Company Limited to eighty (80) for Electricity Company Limited. Respondents were further asked about the gender, class and the nationality of the people they attend to on daily basis. All the respondents mentioned that they attended to all the types of clients. However, the ECG respondent stated that their office received averagely more women than men because there were more women in the country than men, also women were more influential and patient thus impress on the officers to attend to them whiles they wait patiently.

Finally, respondents were asked to give a general comment and their observations. They stated that landlords apply for conversion of their houses into stores, hotels, restaurants, recreational centres etc. Ghanaians do not have the skills to work at the oil

industries so most are engaged in oil-related services like plumbing. There is increase in number of vehicles, population, banks, hospitality services, sex worker (both internal and international), crime rates etc. within the metropolis as a result of the oil discovery. Majority of the respondents were of the opinion that the economy was growing because migrants move into the metropolis with capital, create employment opportunities, lodge in hotels and spend money. Cost of accommodation has increased. A two to three bedroom self contained in areas like Chapel Hills, Sekondi Ridge, etc ranged between 2000 and 2500 dollars a month, they stated. Those in the hospitality services are also making it big. Currently, about 125000 barrels of oil are produced daily.

#### **4.4 Summary**

The chapter presented the data gathered from the interview. Basically, the data represent respondents' views about oil discovery, in-migration and infrastructural challenges. Respondents were categorised into two; residents and workers in the Sekondi-Takoradi Metropolis and key informants. The number of respondents was made up of 28 females representing 56% of the total participants and 22 males, representing 44% of the total respondents. Respondents provided information regarding the reasons for the movement of people into the Sekondi-Takoradi Metropolis. They also gave information in relation to previous state of affairs regarding housing, transportation and water and energy supplies. They again provided information regarding the current state of affairs in relation to the housing, transportation and water and energy supplies. It came out from the study that the current state of affairs is worse than the previous state. They generally linked the current state to the in-migration in the area as a consequence of oil discovery and

production in the region. Next is chapter five, which concentrates on the summary of key findings, conclusions drawn from the study and the recommendations made to various stakeholders.

Year End Exchange Rates:

2007: \$1 = GH¢1

2014: \$1 = GH¢3.20

## CHAPTER FIVE

### SUMMARY, CONCLUSION AND RECOMMENDATIONS

#### 5.0 Introduction

The study looked at oil discovery, in-migration and infrastructural challenges in the Sekondi-Takoradi Metropolis. This chapter presents the summary of the whole study, discusses the conclusions arrived at based on the responses elicited from the respondents and provides recommendations in improving the infrastructural challenges in the Sekondi-Takoradi Metropolis.

#### 5.1 Summary

##### **In-migration**

It came out from the study quite a sizeable number of people have moved to settle in the area of study due to job hunt. The job hunt is predominantly informed by the oil discovery in the area of study, being the regional capital of the Western Region. A sizeable number of respondents (45%) believed that the reason for people migrating into the Sekondi-Takoradi Metropolis was to search for job opportunities as a result of the oil discovery in the region.

##### **Housing**

There is a general shortfall in the supply of houses in the Sekondi-Takoradi Metropolis. Respondents believe that this is as a result of in-migration that the area has recorded in recent times. They are of the opinion that landlords are motivated to increase rent in order to offer their houses to the highest bidders. The cost of rent has increased significantly as a result of the pressure on the current insufficient housing supply available. In some instances the cost of rent has more than doubled compared

to the period before the oil discovery and production. For example, the cost of single room before oil discovery and production was between GH¢10.00 and GH¢20.00 per month. However, because of the influx of people in the area, cost of single room now ranges between GH¢40.00 and GH¢150.00 per month. This represent an increase of 300% for the minimum rent and an increase of 650% for the maximum rent for single room within a period of 6 years (2007 to 2013). There was an average increment of over 500% for the other types of housing.

Another critical finding is that the hospitality industry, especially hotel business is also booming and the quality has also improved. However, these services are not sufficiently provided to take care of the increased demand and for this reason, the fees charged are generally very high. Some landlords pull down their houses to put up hotels and guest houses to take advantage of the high demand for these services.

With respect to the cost of land, land entitlement and building permits, it has been noted that these costs are just escalating. For example the costs of land in some cases have increased by approximately 900% since 2007. Another finding was that there is a general difficulty in the acquisition of building permits and the processing of land documents as a result of workload increase. For this reason, clients offer huge sums of money in order to acquire these documentations. However, the Metropolitan authorities vehemently disagreed to this claim.

## **Transportation**

Majority of the respondents in the study area used commercial transports (mini bus and taxi) to commute within the metropolis. Only few of the respondents used their own cars.

One critical finding was that before the oil discovery and production in the study area, respondents' movement in and out of the metropolis was relatively unhampered. The finding is that there was relatively low vehicular and human traffic in the metropolis prior to the discovery of oil. It has also been discovered that transport fares before 2007 was very low and affordable. Taxis charged fixed amounts throughout the metropolis. This fixed amount covered a distance of between 5kilometres and 10 kilometres. However, the situation is not the same after the oil discovery and its subsequent in-migration. Transport fares have increased and continue to increase in the metropolis. Many people have acquired commercial vehicles and some have even converted their private vehicles into commercial to take advantage of the booming transport business in the metropolis. For this reason, traffic jam had become a common phenomenon in the metropolis. The traffic situation is severer between 6:00am to 9:00am and between 4:00pm to 6:00pm. This situation, according to the respondents, was affecting them negatively in terms of arrival at work early or home early to prepare of the next day. Productivity of the entire metropolis has slowed down significantly since most workers do not get to work on time. Respondents generally advised the authorities concerned to expand the roads and build interchanges in the metropolis.

Another important finding was that before the discovery of oil in the region in 2007, the Drivers and Vehicle Licencing Authority registered an average of 2600 vehicles a year. However, after the discovery of oil and subsequent production, vehicle registration has more than doubled. In 2013, a total of 6,236 vehicles were registered. This perfectly explains the current increase in the traffic situation in the regional capital.

### **Water and Energy Supply**

All the respondents were connected to water and electricity. Respondents believed that before the discovery of oil, the numbers of clients served by utilities companies were relatively low and for that matter were provided with quality services. However, majority of the respondents mentioned that with the oil discovery, it now took them between two weeks and one-month to register and to be connected to these amenities after registration. There was a sizeable number of respondents who did not have any idea because this was done by the landlords or the estate developers before they (respondents) moved into their houses. This claim was, however, contended by the utilities companies. They mentioned that even though they had some challenges with the supply of these services as a result of increased workload, it did not take them more than one-week to provide these services.

### **5.2 Conclusion**

From the analysis of the data, the following conclusions were reached. An assessment of the responses from the residents and workers shows that oil discovery in the Western Region of Ghana continues to push a lot of people into Sekondi-Takoradi, the regional capital. As a result of this Sekondi-Takoradi Metropolis is facing serious

infrastructural challenges with respect to increased housing demands, high cost of rent, high cost of land, pressure on the relevant authorities, poor quality of water and electricity services and many more.

It also came out from the study that landlords are converting their houses into stores, hotels, restaurants, recreational centres and many more in order to meet increased demands for these services. Another significant finding was that there was increase in number of vehicles, population, banks and hospitality services. Again, there is a general perception of increased sex workers (both internal and international) and crime rates within the metropolis as a result of the oil discovery.

### **5.3 Recommendations**

Based on the findings from the study, the following recommendations are being suggested to appropriate authorities to improve upon the situation in Sekondi-Takoradi Metropolis:

- (i) The Sekondi-Takoradi Metropolitan Assembly should adequately staff its planning department with the requisite planning officers in order to ensure speedy provision of their services to clients who want to put up buildings to address the housing deficit in the metropolis.
- (ii) The utility companies, including Ghana Water Company Limited and the Electricity Company of Ghana, should engage more hands to meet the current workloads of their respective institutions. Understaffing would continue to make sure that there would always be a backlog of which clients and potential clients would continue to be dissatisfied with their service quality and provision.

- (iii) Dilapidated road network is one major problem the local inhabitants have had to contend with over the years. For any economic project to succeed, the roads in the Sekondi-Takoradi Metropolis have to be given a face-lift by getting them tarred and interchanges constructed to ease the current traffic situation in the metropolis. This in no small way will boost the tourism development of the metropolis as a whole.
- (iv) The traffic directors within the metropolis should be adequately educated on effective traffic control. The traffic lights should also be functional to prevent traffic jam. The authorities should consider using traffic lights that are powered through the national grid and also through the use of the sun energy (solar) to ensure that the traffic lights are not always out of order.
- (v) The Central Government should set aside some of the oil fund for the development of the oil producing communities including the Sekondi-Takoradi Metropolis that suffer some negative consequences (such as immigration and infrastructural challenges) of the oil find.
- (vi) The various stakeholders must adopt strategies that would discourage workers from migrating into the Sekondi-Takoradi Metropolis because of the oil discovery and production. A resource abundant mostly pulls poorly paid workers from other regions of the country, or from other countries. The number of available jobs for the local citizens is lessened by the migrants and this mostly result in social tension. Temporal migration limitation can help reduce these tensions that would increase the oil gains for local peoples.
- (vii) Environmental and housing conditions must be improved by increasing the housing stock to eliminate overcrowding which put much pressure on the inadequate housing stock in the metropolis. To this end real estate developers

should be incentivised to build affordable houses in the catchments area of the metropolis to ease the pressure.

- (viii) Access to land continues to be an important consideration for households and businesses, particularly in the Sekondi-Takoradi Metropolis. Delays in land registration and titling create bottlenecks in access to land and in site development. Reforms to address this constraint could include systematic land titling and customary boundary demarcation through implementation of the Land Act and Land Use Planning Act. Implementation could be facilitated through the development of one-stop-shop for land administration.
- (ix) It is evident that many of the problems that arise in the institutional setup are to a large extent caused by lack of coordination and dialogue resulting in the shirking of responsibility many a times bringing about poor performances. This clearly suggests the need for an effective collaboration and co-ordination among stakeholders such as the Sekondi-Takoradi Metropolitan Assembly, Ghana Water Company Limited, Electricity Company of Ghana Limited, Traditional Authorities, Real Estates Developers, Environmental Protection Agency and the Ministry of Energy to ensure the successful management of the STMA. For this to be realised, effective dialogue procedures should be established through periodic meetings, seminars on the state and progress of the activities in the metropolis. This can provide a conducive platform for deliberations of pertinent issues as well as discussing and finding solutions to identified challenges relating to the management of the metropolis.
- (x) The central government can progressively provide comprehensive economic and social services and infrastructure in support of transformation of the metropolis' economy. Other essential services such as a health post, police

stations and post offices must be expanded in the area to facilitate socioeconomic development.

- (xi) Finally it is recommended that future researches must be carried out to examine the social (i.e. poverty, inequality, crime, prostitution and many more) and environmental problems engendered by the oil boom in the area of study.

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**APPENDIX A**

**UNIVERSITY OF GHANA, LEGON**

**CENTRE FOR MIGRATION STUDIES**

**Oil Discovery, In-migration and Infrastructural Challenges in the Sekondi-**

**Takoradi Metropolis**

**INTERVIEW GUIDE FOR RESPONDENTS**

**SECTION A**

**A. Background Information**

- (a) Can you tell us about yourself?
  - (i) Probe for current background information e.g sex, age, marital status, employment, ethnic group, educational level, dependents (i.e. children, extended family members)
  - (ii) Probe for background information before migrating e.g. age, marital status, ethnic group, employment, educational level, dependents (i.e. children, extended family members)

**B. Migration History**

- (a) Where were you born? If not Sekondi-Takoradi, then find out where.
- (b) How long have you lived in Sekondi-Takoradi?
- (c) Did you come to Sekondi-Takoradi alone or with other relatives and friends?
- (d) Why did you choose to settle in Sekondi-Takoradi? Probe for networks, employment opportunities, etc.
- (e) Given a chance, would you like to settle elsewhere?

**C. Reasons for Migration**

- (a) What was your intention for migrating to Sekondi-Takoradi? Probe for the first, second and third important factors. Rank about three of them.
- (b) Why did you have to move to Sekondi-Takoradi around the time you moved?

**D. Information on Housing**

- (a) Where do you stay/live? Probe in which suburb of Sekondi-Takoradi.
- (b) Do you own the house you live in? Find out whether it was built by estate developers or by him.
- (c) How long have you lived in your present residence?
- (d) How many houses have you stayed within the metropolis?
- (e) Have you any idea about the current cost of rent? Probe from single room, chamber and hall, self-contained, etc.
- (f) Is there any change in cost of rent? Find out when they started experiencing the change and what accounted for the change. Any accommodation challenge?
- (g) What about the hospitality services? Is it affordable and available?
- (h) What can you say about the cost of land, land entitlement and building permits?

**E. Information on Traffic Jam**

- (a) By what means do you commute within the metropolis?
- (b) Is there any change in your means of movement?
- (c) What might have accounted for such change?
- (d) Does this affect you? How?

- (e) How do you think this will affect the metropolis and the nation at large?
- (f) Any suggestions on the way forward?

**F. Water and Electricity Supply Information**

- (a) Have you access to water and electricity in your house?
- (b) How long does it take to register and to be connected to these amenities after registration?
- (c) What do you have to say about their services? Comparing situations before and after 2010.
- (d) How do their services affect you?
- (e) Have you any idea about the reasons for the change in their service delivery in recent times?
- (f) General Comments

**APPENDIX B**

**UNIVERSITY OF GHANA, LEGON**

**CENTRE FOR MIGRATION STUDIES**

**Oil Discovery, In-migration and Infrastructural Challenges in the Sekondi-**

**Takoradi Metropolis**

**KEY INFORMANT INTERVIEW GUIDE**

**A. History of the Metropolis**

- (a) Brief introduction about yourself
- (b) History about the Metropolitan Assembly (date, transformations, etc.)
- (c) Objectives for this unit
- (d) What can you say about the workload here six years ago.

**B. Contemporary Information**

- (a) Has the workload changed currently? How?
- (b) What in your opinion accounts for this change?
- (c) What are the processes involved?
- (d) How long does it take one to go through these processes?
- (e) Averagely, how many people do you attend to in a day?
- (f) Who are they? E.g. men, women, migrants, non-migrants, rich, poor, elite, illiterate, foreigners, etc.
- (g) General comments

Areas to go to:

1. Water and Electricity companies
2. Building permits (Metropolitan Assembly)
3. Rent charges (Real Estate Companies and Landlords)
4. DVLA (Licensing Office)