SOCIO-ECONOMIC EFFECTS OF OIL EXPLORATION AMONG HOIMA

MUNICIPALITY COMMUNITIES, UGANDA

BY

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CHAPTER ONE

1.1 INTRODUCTION TO THE STUDY

The research proposal aims at assessing the socio-economic effects of oil exploration activities on the well being of communities mainly focusing on changes in household income, prices, influx of people, road construction and economic transformation in the municipality.

Oil exploration in Uganda covers more than 20 districts but the focus is presently in 3 districts of Nwoya, Hoima and Buliisa. According to Ministry of energy and mineral development (petroleum exploration and production department update) 2016, the discovered oil and gas in the Albertine graben is 6.5 billion barrels an amount considered viable for commercial oil production, its estimated future output will be 200,000 barrels per day.

Hoima district is located in mid western Uganda was originally part of former Bunyoro district, at independence Bunyoro was a kingdom with the abolition of Ugandan kingdoms in 1967, after seven years north Bunyoro and south Bunyoro were created, the latter becoming Hoima district in 1980,Hoima municipality is 203 kilometers from kampala city located on the edge of great rift valley.

Following oil exploration and discovery in the Albertine graben, Hoima is becoming an attractive and dynamic center of economic activity and rapid development because of this it led to Hoima Town being upgraded to municipality status in 2010 through an Act of parliament. Hoima Municipal Council(HMC) was formed from Hoima town council, Busiisi sub county, some parts of Buhanika, Kitoba, Bugambe sub counties and covers a total area of 89KM2,it comprises of four divisions, sixteen ward and 143 cells.

Hoima's geographical position provides a huge potential to be a hub in great lakes region improvements in infrastructure and utilities such as railway, water, roads and in land port facilities could help exploit this position.

1.2 Background to the study

Oil has had profound impact on the world civilization than any single natural resource in recorded history.oil has become a very decisive element in defining the politics, rhetoric and diplomacy of states, all over the world the lives of people are affected and the destiny of nations are determined by the result of oil exploration.oil keeps the factors of the industrialized countries working and provides the revenues which enable oil exporters to execute ambitious national and economic development plans, the much of progress would be retarded and life itself would be unbearable if the world is deprived of oil. That's why oil has become the concern of governments, a vital ingredient of their politics and crucial factor in social economic strategies.

The oil boom presents a moment of great opportunity because the amount of revenues available for poverty reduction is substantial. on the other hand dramatic development failures that have characterized most oil dependent countries indicate that oil boom has not helped developing countries fight poverty instead it has worsened the poverty situations. In Africa oil has mainly benefited African privileged elites, oil companies and their shareholders and western industrialized countries (ACODE 2006).

Since 1970 Nigeria socio-economic and political fortune have been intricately linked with oil exploration, with petroleum oil providing about 95 percent of exports earnings and accounting for over 80 percent of government revenue as well as generating over 40 percent of GDP, it is revealing to note that oil that generate these numerous benefits to Nigeria come solely from the Niger Delta has generated massive economic and social transformation of the many parts of the

country on the one hand it has resulted into un paralleled damage to the Niger Delta environment thus inducing a multifaceted problems in the region such as abject poverty, deprivation, social conflict, occupational dislocation, ill health (Amadi and Tomuno, 2012).

Petroleum occurrence was first recorded in Uganda in the early 1920's one deep well was drilled in 1938 which encountered hydrocarbons but was not tested, several shallow wells were also drilled during 1940's and 1950's for strategic purposes, there was then a period of limited or no activity between 1940's and 1980's largely due to the Second World War and political instability in the country. A modern and consistent effort to establish the country's petroleum potential has been undertaken since 1980's.Aeromagnetic surveys undertaken during 1983 and 1992 respectively identified five sedimentary basins in the country, they are the Albertine graben, Lake Kyoga basin, Hoima basin and Moroto-Kadam basin follow up work on the ground has shown that the most prospective sedimentary basin to date is the Albertine graben. Therefore the exploitation and utilization will create durable and sustainable social and economic effects for Uganda, these resources have a potential to provide immense benefits, to the country through creation of employment generation of revenues, development of infrastructure and subsequent fast tracking social transformation of the country.

Seismic survey, further exploratory drilling, the longer-term production stage pipelines, decommissioning plans and audits are envisaged to continue in the Albertine rift area in general and in the protected areas. The exploration of oil offers tremendous opportunities for Uganda and Hoima municipality in particular; it also poses several risks if the country succumbs to the oil curse or the diversion of revenues for development through mismanagement and corruption.

Government of Uganda has made significant progress in the petroleum sector; this has been possible through investment in the human resource capacity through specialized training and

procurement of specialized equipment to collect geological, geophysical and geochemical data. These efforts led to attraction of investment for exploration and more importantly, the discovery of commercial oil and gas reserve in 2006. Investment and licensing in the sector cumulative foreign direct investment in petroleum exploration in the country since 1998 was over USD 2.4 billon at the end of 2013 and investment in the sector is expected to increase as the country enters the development and subsequently the production and refining phases of the petroleum value chain, three oil companies licensed to carryout exploration, development and production in far exploration areas, these are Tullow Uganda operations ltd, Total E & P Uganda and China National Offshore Oil Corporation (CNOOC).

In order to facilitate the development of petroleum resources in New Zealand and its Exclusive Economic Zone (EEZ), the Government has implemented a new process for allocating oil and gas exploration permits from 2012. All permits will be allocated by means of a "block offer annual competitive tender process" rather than the first-in, first-served approach known as "priority-in-time" used previously. Tenders will be evaluated on the basis of the applicants' corporate standing; technical and financial capability; risk management practices; operating experience; and proposed work programme (Ministry for Business, Innovation and Employment (MBIE – formerly MED), 2012a). The exploration blocks tendered in June 2012 included on-shore blocks (5,700 square kilometres in total) in Taranaki, the Waikato, Tasman, and the West Coast. Offshore blocks (more than 40,000 square kilometres) were offered in the Hawke's Bay, the Canterbury Basin and the Great South Basin, as well a block to the south of Wellington (Rutherford, 2012).

Over time localities where oil is actually located compared to the rest of the country tend to suffer from lower economic growth, lower per capita incomes, greater dislocations, higher

environmental and health hazards and higher levels of conflict, economically oil fails to offer long term sustainable employment alternatives at the local level but it can seriously disrupt pre existing patterns of production.

The rapid influx of people and the higher relative salaries of oil project workers inflate the local prices of key goods and services bringing about a significant increase in the cost of living for example the municipalities of Yopul in the state of Casanare, Columbia abruptly filled with migrants hoping to find employment at salaries three to four times the minimum wage, even before nearby massive oil fields at cusiana-cupiagua came on stream rents and prices increased by 300% virtually overnight. But because most created by oil industry are temporary or seasonal in nature and because the growth in jobs generally occurs only during the exploration phase, the industry actually offers comparatively few jobs overtime, thus discoveries trigger massive changes.

1.3 Statement of the Problem

There is inadequate empirical evidence or qualitative research that has been done regarding socio economic effects of oil exploration among Hoima municipality communities, many social-economic effects resulting from oil exploration activities such as, culture mix, changes in prices, changes in income, displacement, occupational dislocation, economic transformation , influx of people, construction activities have not been given serious attention and documented yet these are associated effects of oil exploration activities and they affect the well-being of the communities in terms of planning, management and development, hence necessitating the research proposal.

The available research conducted does not focus on socio economic effects that the proposal intends to address resulting from oil exploration for instance, according to the Jobs and oil living earth Uganda project (2013) baseline study report improving access to youth employment in western Uganda the main focus of the study in Hoima municipality was on access to employment.

Furthermore HOCADEO(2012) report on the baseline study on the current trends of oil exploration and social-economic implications of the emerging oil and gas industry on the livelihood security of the local communities in the Albertine region focused mainly on land ownership, employment, business opportunities, markets and access to health services, the report indicates that business opportunities from oil and gas exploration activities in the Albertine graben, local communities have not yet benefited according to HOCADEO report (2012) 70% of the study respondents believed that oil and gas exploration has not yet benefited local communities.

The rapid influx of people due to oil exploration and the higher relative salaries of oil project workers inflate the local prices of key goods and services bringing about a significant increase in the cost of living for example the municipalities of Yopul in the state of Casanare, Columbia abruptly filled with migrants hoping to find employment at salaries three to four times the minimum wage, even before nearby massive oil fields at cusiana-cupiagua came on stream rents and prices increased by 300% virtually overnight.

Therefore possession of adequately researched information is essential for assessing socio-economic effects to inform appropriate interventions among communities who are stakeholders hence necessitating the research proposal

1.4 General Objective

To assess the social economic effects of oil exploration among Hoima Municipality communities.

1.4.1 Specific Objectives

i. To establish the effects of oil surveying to changes in prices of commodities in Hoima Municipality.

ii. To examine road construction effects to economic transformation in Hoima Municipality.

iii. To ascertain the effects of collection of seismic data to influx of people in Hoima Municipality.

1.5 Research questions

i. What are the effects of oil exploration on changes in prices of commodities in Hoima Municipality?

ii. What are the effects of oil exploration on economic transformation resulting from road construction in Hoima Municipality?

iii. What are the effects that result from collection of seismic data to influx of people in Hoima municipality?

1.6 Hypotheses of the study

i. Oil surveying and mapping leads to changes in prices of commodities.

ii. Road construction results into economic transformation.

iii. There are no significant effects between collection of seismic data and influx of people.

1.7 Conceptual Framework

Figure 1: This study will be conceptualized on the conceptual framework below;

Oil exploration activities

A- **Seismic studies (independent variable)**

-Surveying and mapping
-Collecting seismic data
-Area zoning

Socio-economic effects

B-Exploratory well drilling

-Building roads -Clearing vegetation -Levelling the drilling area -Casing	-culture mix -economic transformation -Displacement -occupational dislocation -change in prices

Source: Adopted from Kisembo (2009) and modified by the researcher.

The independent variable is oil exploration activities with the following activities seismic studies and exploratory well drilling with the following dimensions, surveying and mapping, collecting seismic data, area zoning, building roads, clearing vegetation, drilling, casing and well completion all the listed affect the dependent variable the social economic effects on the well being of communities leading to culture mix, economic transformation, displacement, prices, occupational dislocation, influx of people.

1.8 Significance of the study

- The findings of the study will be of help to the Government of Uganda, Hoima municipality, the Ministry of Energy and Mineral Development in making clear policies on how oil companies and individuals are to handle demands of the local community, concerning issues such as jobs, culture mix, health, displacement and peaceful co-existence.

- The study findings will also enable other stakeholders, for instance the civil society charged with accountability and strengthening participatory mechanisms intervene in the 'paradox of plenty' and the windfall revenue phenomenon' which is likely to lead to the 'oil curse' (negative effects of oil; resource utilization leading to economic stagnation, environmental degradation and increased poverty).

- As a student of Executive Masters in Business Administration in Oil Governance and Management, I am hopeful that the research findings will to a large extent enhance my career in research and enable me to have a practical approach in analysing issues resulting from oil exploration, as the course requires

- The study will also be useful to other researchers in the field of mineral exploration and to those who would wish to expound on the area of mining to obtain a foundation in the form of literature review.

1.9 Justification of the study

Petroleum geologists have determined that the Mputa and Waraga oil fields in Buseruka Hoima have volumes of between 100 and 300 million barrels of oil. In the Waraga field, a maximum of 12,050 barrels of oil can be produced per day. According to Hardman's Chief Executive Officer, the great news is the fact that flow tests from all the zones have exceeded the expectations of productivity. Additional recent exploration findings by Tallow oil partners in Area 3A have revealed the existence of up to 500 million barrels of oil at the Kingfisher well in Hoima. According Reuben Kashambuzi, the commissioner for petroleum Exploration and production, production is now possible as the issue of commercial capacity has been settled.

1.10 Scope of the Study

1.10.1 Geographical Scope

The study will be in Hoima municipality focusing in two Divisions of Kahoora and Mparo respectively focussing on social, economic effects of oil and gas exploration activities on the wellbeing of communities.

1.10.2 Time Scope

The study will look into consideration the time when serious oil exploration activities started in 2006 under Hardman resources up to 2014.

1.10.3 Content Scope

The study will focus on assessing how the people have been affected by oil exploration activities since 2006 when serious oil exploration began in the Albertine graben. The focus will be in the local communities within Hoima municipality in the two divisions of Kahoora and Mparo respectively.

1.11 Operational definitions

Oil Exploration

This is the most important in the oil industry involved with finding oil fields and bringing oil up from the ground, this detective work requires looking for clues, search for underground or under water oil and gas reservoirs, careful observation of ground conditions, taking notes of different information and the evaluation of survey data. This is the job of geoscientists who are experts on rocks, they look for places where there might be oil, and they look for signs that may indicate the presence of hydrocarbons underground and responsible for determining the best places to drill.

They start examining the shapes of different underground layers, advanced technologies and special tools like aerial photography, satellite pictures,nanorobots,3 and 4 dimensions are used to measure variations in the earth's gravity and magnetic fields to help in identifying crude oil fields, this is an expensive activity this information is supplied to economists and financial planners to make decisions whether or not to drill exploratory well, initial drilling is followed by the production phase which is the actual extraction of oil from the ground ,the cost of drilling an exploratory well costs between 1-5 million dollars.

The majority of the world's oil and gas reserves are located in emerging economies that now have the opportunity to invest further in the development of technologies and infrastructure that would enable them to exploit their mineral wealth efficiently while providing a platform for economic diversification.

OIL

Accumulation of hydrocarbons, three conditions of oil formation, source rock, rock cap, and porous rock, crude oil is an organic liquid substance often found below the earth's surface it is made up of thousands of molecules composed of different hydrogen and carbon atoms such

compounds are called hydrocarbons. Hydrocarbons contain different proportions of impurities like oxygen, sulphur, nitrogen and heavy metal atoms.

Crude oil is a central part of modern life and the world's most important energy resource, we rely on it in many ways for food we eat, the clothes we wear and the electronics we use at home and work place.

SEISMIC STUDIES

Seismic technology uses sound waves to reveal what lies deep in the ground, sound waves can travel through some materials more easily than others once the waves have all been recorded for an area the information is taken back to a laboratory where geoscientists read the waves and make interpretations.

DRILLING

Since the first oil well was drilled in 1859 by Edwin Drake oil exploration and production has become an increasingly complex and precise process, wells have gotten deeper and more complex.

To drill a well, a large drilling rig is brought to the site, once its situated above the desired location drilling can begin, drill bits have sharp teeth that rotate to tear apart rock while the well is drilled it gets deeper to length of 30 feet. Pipes are attached to the top of the drill.

For this reason drillers use mud to lift debris out of the well, mud is a complex material specifically made for its purpose because it is so complex mud is one of the biggest expenses in drilling, controlled by mud engineers, drilling mud keeps the formation or walls of the well from collapsing inward.

WELLBEING

Human wellbeing has many dimensions, income to pay for food, clothing and shelter, access to clean water and sanitation, good health, security, access to social services and amenities, freedom of choice.

The conceptual framework used in the compendium of OECD (organisation of economic cooperation and development) wellbeing indicators distinguishes between material living conditions and quality of life and conditions required to ensure their sustainability overtime.

Material living conditions or economic well being determines people's consumption possibilities and their command over resources.

Quality of life, defined as the set of non-monetary attributes of individuals, shapes their opportunities and life chances and has intrinsic value under different cultures and contexts.

The sustainability of the social-economic and natural systems where people live and work is critical for wellbeing to last over time, sustainability depends on how current human activities impact on the stock of different types of capital (natural, economic, human and social)(OECD;2011:50).

CHAPTER TWO: LITERATUREREVIEW

2.1 Introduction

Under this chapter a critical review of the issues that have been explored and studied both theoretically and empirically on the existing literature on the social economic effects of oil exploration activities on the well being of communities in developing countries and elsewhere in the World. It is important to note that the greatest part of the existing literature on the works of other scholars who have written about the topic of the study or those who have addressed similar issues as those of the variable that will be available in the study. The literature will be comparative in that it will be in line with the specific objectives of the study; so as to make the researcher appreciate the contributions of the different researchers and identify the gaps.

In this study stakeholder theory will be applied, Stakeholder is a person, group or organization that has interest or concern in an organization. Whereby stakeholders can affect or be affected by the organization's actions, objectives and policies. Some examples of key stakeholders are creditors, directors, employees, government (and its agencies), owners (shareholders), suppliers, unions, and the community.

Regarding background of stakeholder theory it was embedded in the management discipline in 1970s and gradually developed by Freeman (1984) incorporating corporate accountability to abroad range of stakeholders. Wheel et al (2002) argued that stakeholder theory is less formal unified theory and more of abroad research tradition incorporating philosophy, ethics, political theory, economics, law and organisational science.

Freeman (1984) stakeholders of a firm can be defined as individuals and constituencies that contribute, either voluntarily and involuntarily to its wealth creating capacity and activities and who are therefore its potential beneficiaries and or risk bearers.

Sundaram and Inkpen 2004 contends that stakeholder theory attempts to address the group of stakeholder deserving and requiring management's attention whilst Donaldson and Preston (1995) suggested that the firm is a system where there are stakeholders and the purpose of the organisation is to create wealth for its stakeholders.

Stakeholder theorists have tended to devote relatively little attention on defending stakeholder rights, issues of governance and corporate law have received insufficient attention among advocates of radical departure from the shareholder focused conception and failure of stakeholder theory being viable overtime, failing to demonstrate its ability both to achieve the multiple objectives of the different parties and to distribute the value created in ways that maintain their commitment.

It's important to note that stakeholders can make or break a project/corporation or programme it can be tough to pin them down or describe the depth of the project with them, creating a stakeholder management plan can help them informed.

2.2 How does oil surveying lead to social effects on the surrounding communities?
In a review of the Regional Coastal Plan for Taranaki in Newzealand, Taranaki Regional Council (TRC, 2009b) the number of unauthorized coastal incidents has been recorded as 219 over the five-year period to 2009 (fewer than five per cent of all unauthorized incidents recorded). Unauthorized incidents include pollution incidents, spills and incidents of non-compliance with resource consent conditions. In total, nine unauthorized incidents (4.1 per cent) were attributed to

hydrocarbon exploration and servicing facilities, and ten (4.6 per cent) to petrochemical processing. Forty six incidents were attributable to oil or petrol spills but the source of these is not identified in the report. Although the total number of incidents is low, the report states that the consequences of a single event can be devastating. It cites, among a number of examples, an accidental discharge of 23,000 liters of crude oil from the Tui oil field in 2007. The significant amounts of oil that washed up along the Okato coastline required a major clean-up of sandy beaches in the area that took eight months. Fortunately the timing of this spill (during the spring high tide) meant that oil was deposited high on beaches well away from the zone where marine wildlife is active (TRC, 2012b).

The TRC undertook/commissioned a series of reviews in 2011/2012 on the potential impacts of hydraulic fracturing (fracking) and deep well re-injection on the regional environment. Fracking is a technique used to release gas and oil that is not accessible by other means, by pumping pressurized fluid into well-bores to open fractures in the hydrocarbon reservoir, while deep well re-injection is a process for returning wastes back into depleted oil or gas wells. The reviews examined the potential impacts on freshwater supplies, the risks of earthquakes and other seismic activity, as well as the impacts on air quality of the flaring of fracture fluids.

The Institute of Geological and Nuclear Sciences Ltd reviewed the likelihood that seismic activity would be triggered by fracking in Taranaki and the potential impacts on the region's population and infrastructure if earthquakes were to be triggered (Sherburn and Quinn, 2012). Data from the GeoNet project, which has monitored geological hazards in New Zealand since 1994, were analysed to determine whether there was evidence of increased seismic or volcanic activity near petroleum operations in Taranaki. The authors concluded that the data did not support "any suggestion that hydraulic fracturing or deep well re-injection activities could trigger

in Taranaki a large earth quake, a sequence of moderate-sized earthquakes, or a widespread zone of earthquakes". There was no evidence that volcanic activity at Mount Taranaki had been affected by fracking and oil) on ambient air quality in the region have also been undertaken. Hydrocarbon flaring is used as a means of disposing unwanted hydrocarbon gases extracted from drilling or from Hydraulic Fracturing (HF) fluids, before well-testing is undertaken.

In three studies undertaken at well-sites during 1997/1998 (Institute of Environmental Science and Research, 2008; Fletcher Challenge, 1998) it was shown that the levels of carbon monoxide, carbon dioxide and methane measured downwind of the well sites were safe at all measurement sites including those within 50 meters of the wells. Levels of PM10 (suspended particulate matter in the size range that has the most serious impacts on respiratory health) in close proximity to the sites were compliant with the National Environmental Standards for Air Quality (NESAQ). Levels of Poly-Aromatic Hydrocarbons (PAHs), which epidemiological evidence have linked to the incidence of cancer (Armstrong et al., 2003), were similar to background atmospheric levels 120 meters from the flare sites. Background levels of dioxins, which have been widely linked to a range of adverse impacts on human health including cancer, and endocrine, central nervous system, and reproductive function abnormalities (WHO, 1999), were achieved beyond 250 meters.

Walter (2014) observed that in the experience of his Council (South Taranaki District Council), the main issues of community concern with respect to petroleum exploration were "noise, road damage and road safety, visual impact and more noise" with the addition of excessive light at night, vibration, dust, and stock disturbance. A number of approaches were developed and used to minimize these impacts. Local authorities worked to develop uniform approaches to district

planning and companies recognized that communication, consultation and consistency of compensation are vital to community acceptance. The voluntary land access code agreed by Federated Farmers which clarified company and community responsibilities was considered a significant advance (Walter, 2015).

Similar concerns in Walter (1994) have been identified more recently. In a public meeting held by residents in Tikorangi (a rural community in North Taranaki), heavy traffic, falling land values, noise and feelings of helplessness were spoke of by residents (Radio New Zealand, 2013). In addition, there have been some isolated noise issues (Maetzig, 2010), one of which resulted in a number of local hapū members leaving their homes during the construction phase of the Motunui production station (Treaty of Waitangi, 2011).

Community relationships have been enhanced by providing support to community groups and organisations through sponsorships, scholarships and investment (Venture Taranaki, 2010a). These can have positive impacts for the Taranaki community. For example, the aquatic centre and the raceway in New Plymouth have been sponsored by Todd Energy while Puke Ariki, the regional museum, was sponsored by Shell. Both companies are also major event partners of the annual World of Music, Arts & Dance (WOMAD) International Festival in New Plymouth which encourages and promotes cultural diversity. Similar contributions can be identified for companies from the oil and gas supply chain. Port Taranaki, for example, is a major sponsor of the Taranakirug by team and the Taranaki Arts Festival. In addition to their community investments, the oil and gas industry makes contributions to education programmes in the region.

2.3 How does road construction result into economic transformation?

A strong, growing, sustainable economy is the goal of every nation in the world. A sustainable economy enhances a nation's standard of living by creating wealth and jobs, encouraging the development of new knowledge and technology and helping to ensure a stable political climate.

The Texas oil exploration boom sometimes called the gusher age was a period of dramatic change and economic growth in the United States state of Texas during early 20th century that began with discovery of a large petroleum reserve near Beaumont Texas. The fund was unprecedented in its size and ushered in an age of rapid regional development and industrialization that has few parallels in United States history, Texas quickly became one of the leading oil producing states in the US along with Oklohama and California.

The major petroleum strikes that began the rapid growth in petroleum exploration and speculation occurred in south east Texas but soon reserves were found across Texas and wells were constructed in North Texas, East Texas and the Permian Basin in west Texas.

The period of oil exploration had a transformative effect on Texas, at the turn of the century, the state was predominantly rural with no large cities, but by the end of second world war the state was heavily industrialized and the population of Texas cities had broken into top 20 nationally, the city of Houston was among the greatest beneficiaries of the boom and Houston area became home to the largest concentration of refineries and petrol chemical plants in the world, the city grew from a small commercial center in1900 to one of the largest cities in the united states during the decades following the era.

Furthermore regarding economic transformation the urban landscape of the cities changed dramatically the Praetorians building in Dallas (1907) and the amicable life insurance company building in Waco(1911) were among the first skyscrapers in Texas, Texans who became wealthy

from oil exploration activities established upscale communities including river Oaks which became a model for community planning in the United States.

In Brazil oil exploration activities, construction industry and services contributed similarly to growth, but this was also driven by inter-sectoral shifts to services, a decline in agricultural employment and growth in agricultural productivity. The decline in services-sector productivity suggests movement of some workers into more precarious forms of employment, indicative of a decline in employment quality for those workers. This is the price of oil exploration activity.

While the services sector has clearly played an important role in growth in these countries, the implications for policy depend very much on the quality of jobs that people a removing to within the services sector(Walter, et al.,2015). Even if rising average productivity in the services sector suggests that, on average, newer jobs are growth-enhancing and potentially therefore able to provide decent work conditions, the services sector show a variety of transformation experiences. In all except Thailand, services were the largest contributor to value added growth. South Africa, Mauritius and Chile exhibit large contributions to growth from increases in productivity in that sector, so potentially rising employment quality for those already employed.

Rather than services, industry contributed the most to value-added growth in Thailand. Moreover, structural change accounted for half of the country's growth between1990 and 2012. In fact, Thailand had the greatest absolute change contribution of the structural-transformation component. In Mauritius and South Africa, the contribution of industrial productivity was also large, but declining employment offset this and reduced the overall contribution of industry.

Governments have also relied on fiscal and financial incentives, SME-support programmes, and in some countries on state-owned enterprises and public procurement to encourage investment and employment creation. For example, in Ethiopia, fiscal and financial incentives encourage

investments in strategic industries, and policies in support of micro and small enterprises facilitate their (very limited) access to credit (Gebreeyesus,2013). Ethiopia's record in reducing poverty through increased employment and diversified incomes suggests that this strategy is having some success. Productivity growth in the agricultural sector has been the main driver of poverty reduction in Ethiopia, as seen in Section 2,made possible by public investments in According to, the Upper-Middle-Income Countries (UMICs) Chile, Mauritius, Brazil, South Africa and Thailand – also transport, storage and communication; business services(finance, insurance, real estate); government services; and personal services (community, social and personal services). Studies reveal that; changes in shares in value added and employment and changes in labour productivity disaggregated by industry, as described above. In Ethiopia, the highest growth rates in value added are registered in government, construction, trade and transport , and business services (Fox and Pimhidzai, 2013). While government services are less interesting in terms of structural-change dynamics (and may be subject to doubts about their calculation) and construction's growth can be explained by public-works programmes, the growth of the business services is an important phenomenon. Due to their application of ICT and their need for skilled labour, business services are considered 'modern services'. This oil sector tends to offer higher-quality employment, but due to their skills' requirements, they are not easily accessible by the poor. Business services are also the sector with the highest average labour productivity(134,396 birr, 2005 constant prices), roughly 80 times higher than labour productivity in agriculture, and the sector with lowest average productivity.

Both value added and employment of trade services (also referred to as 'traditional services', due to their low technology and knowledge intensity) increased in the past decades. These services offer low-quality jobs, still. This may explain the prevalence of low-quality employment in

Ethiopia oil industry. Ethiopian manufacturing value added and employment have also increased in the past two decades, despite negative labour productivity growth. In terms of labour productivity, data show a clear problem of the economy in raising labour productivity in most industries (notable exceptions are agriculture and transport services). This might be related to the improvements in infrastructure and roads, and consequently market access for rural producers.

Similarly, oil exploration in India, together with construction, business services also witnessed the highest rates of employment growth. While the role of business services in the Indian economy is so widely recognized that modern services have been considered the new engine of Indian economic growth (e.g. Dasgupta and Singh,2005), the highest rates of productivity growth are found in utilities and manufacturing. As McMillan et al. (2013) show, India

According to the Jobs and oil living earth Uganda project (2013) baseline study report improving access to youth employment in western Uganda, Hoima municipality is one of the 14 municipalities in the six year Uganda support to municipal infrastructure development(USMID) project, the objective of the project is to enhance the institutional performance of local governments to improve urban service delivery, expand urban infrastructure, enhance capacity of the municipalities to generate revenue, improve urban planning and strengthen financial management and social systems, As it is improved infrastructure is expected to meet the demands of the incoming businesses and population growth, land prices, rental rates and other real estate costs have escalated as demand for real estate in the municipality and surrounding area has increased.

Following oil exploration and discovery in the Albertine graben, the 90 km kaiso-tonya road, kyangwali- buhuka were successfully tarmac ked it's important to note Hoima municipality is becoming an attractive and dynamic center of economic activity indeed increased economic

activity in the area and rapid development of Hoima Town led it being upgraded to municipality status.

HOCADEO(2012) report on the baseline study on the current trends of oil exploration and soico-economic implications of the emerging oil and gas industry on the livelihood security of the local communities in the Albertine region indicates that business opportunities from oil and gas exploration activities in the Albertine graben, local communities have not yet benefited according to HOCADEO report (2012) 70% of the study respondents believed that oil and gas exploration has not yet benefited local communities.

The majority of beneficiaries are not residents in Bunyoro sub-region, despite the huge business potentials of the industry nothing substantive had been made to tap these unique opportunities.

These infrastructure developments especially road construction are important because they enhance labor and capital productivity which are key measures of sustainable economic development however this trickledown effect on communities well being is still questionable in Hoima municipality.

2.4 The relationship between collection of seismic data and influx of people

Biers, F, (2010) assert that; seismic exploration surveys in the field of oil and gas are an application of reflection seismology. It is a method to estimate the properties of the earth's surface from reflected seismic waves. When a seismic wave travels through the rock surface it creates impedance. A wave travels through materials under the influence of pressure. Because molecules of the rock material are bound elastically to one another, the excess pressure results in a wave propagating through the solid. A seismic survey can reveal pockets of lower density material and their location. Although this cannot be guaranteed that oil can be found in these pockets, since the presence of water is also possible. Thus the acoustic impedance of each rock

formation in the subsurface will be different due to different densities. This density contrast is helpful in tracking the waves in the subsurface and an acoustic impedance chart is obtained which is known as a seismic chart. However, the impedances recorded by the instruments on the surface are not correct due to noise and other factors that change the impedance factor of the wave causing population displacement and migration to new exploration sites.

The distribution of population and its concentration is a major point of concern when addressing possible effects of seismic activities. A simpler yet effective way to understand possible threat from oil exploration, population residing in an area is the 'population potential' which defines the number of person within a given distance from a point. Population potential is an indicator of population pressure on a centre or a node assumed to be the point of maximum population concentration which diminishes outward from the node. The high values of population potential denote a higher concentration of population and vice versa. Natural neighbor interpolation finds the closest subset of input samples to a query point and applies weights to them based on proportionate areas in order to interpolate a value (Sibson, 2011). The population potential as a basis for determining the vulnerability has an edge over other methods of showing population concentration as it negates uninhabited areas by considering cities or urban centers as focal point of concentration. The very low potential areas are confined to the cold desert regions of Lahul and Spiti, Kinnaur and adjoining parts of Chamba, Kullu,Shimla and Sirmaur.

A historical review of past events helps in the preparation of a seismic activity profile of an area. This is a vital element in understanding seismic behaviour. Ample work exists in relation to historical perspective of seismic activity (Allen et al. 2013) and seismic vulnerability (Bilham 2009, Jackson 2006) at the global scale. Significant contribution in this respect at country or

regional level includes reconstruction of historical seismicity on the Pacific coast of USA (TownleyandAllen2011).

Exposure to very high intensity noise can cause direct physiological damage, such as tissue or cell ruptures. Temporary threshold shift can occur at longer ranges (i.e., lower received levels of sound); this is basically a temporary loss of hearing, so that a sound must be louder than normal in order to be heard or understood (Mark, P, 2005). Permanent threshold shift, which is in effect permanent partial hearing loss, is also possible after incidental exposure to extremely loud sound or chronic exposure to moderately loud sounds, though this has not well studied, especially in the wild.

John M., (2011) says that; seismic data acquisition refers to collection of seismic data. The acquired data is further sent to a computer network where processing of data takes place. With better technologies, the prospect of better acquisition surveys has come into place. A generation and recording of seismic data requires ; receiver configurations - includes geophones of hydrophones in the case of marine acquisition, transmitter configurations - includes laying of transmitter as according to the survey configuration pre-decided, orientation of streamers in case of marine surveys and roper computer network to carry the information from receivers to the programming network. When a survey is conducted, seismic waves generated by dynamite or vibrators travel through the subsurface strata, which are in turn reflected or refracted. These reflected waves and their time to complete one interval is noted by the receivers. The receiver configuration has to be well determined so that maximum data can be collected over an area.

On demographics the major commercial centers in the state grew tremendously during this period the city of Houston grew by 555% between 1900 and 1930 reaching a population of many

small Texas towns had even greater populations increases when oil discoveries brought prospectors, investors, field labourers and businessmen.

However it's important to note the growth of many towns was only temporary, growth in some communities was often driven by exploitation of limited oil resources, so once wells ran dry or demand slowed down, their populations rapidly declined when worthman's boom ended the population crashed from its 1927 peak of 30,000 to 2000 people in 1929,the population of Brecken bridge dropped from similar high to 7569 in 1930.

One of the most significant demographic changes in the state was the percentage of urban dwellers between 1910 and 1930 the percentage of urban dwellers increased by 32% resulting in 41% of Texans living in urban areas in 1930.

According to the Jobs and oil living earth project report (2013) in western Uganda, Hoima municipality because exploration activities there has been influx of people posing challenges to municipality the capacity of the council to provide to provide infrastructure and other services is stretching the councils resources to the limit, it is also leading to unplanned development including encroachment on road reserves and wetlands and the expansion of slums, increase in immoral behaviours.

CHAPTER THREE: METHODOLOGY

3.1 Introduction

This chapter presents the methodology that will be used during the study. It involves the Research design, study population, sample size and selection, sampling techniques, data collection methods, Data collection instruments, procedure of data collection, Reliability and validity of instruments, Data analysis plus measurement of variables.

3.2 Research Design

The study will use a descriptive analytical research design using quantitative and qualitative approach. Social economic effects resulting from oil surveying and mapping will be answered using qualitative approach, effects of road construction, economic transformation, influx of people will be answered using both qualitative and quantitative approach. Brewerton (2001) asserts that a case study provides an in-depth study of the problem with limited time scale. He further asserts that the notion of combining qualitative and quantitative data in a case study research offers the promise of getting closer to the whole of a case in a way that a single method study could not achieve. It applies both correlation and descriptive approaches.

3.3 Study Population

In this study, the target population will be drawn from Hoima Municipality and will include those involved in or with knowledge about the social economic effects of oil exploration activities on the well being of communities and will include; international oil companies, area residents, house hold heads, government Administrators, and other key informants.

3.4 Determination of Sample Size

The respondents will comprise of both sexes but of different marital statuses and age groups and the study will use 100 respondents and will be selected basing on a table for determining Sample size by Krejcie and Morgan, 1970, p.608). random sampling will be used to select the respondents .

3.5 Sampling techniques and procedure

The study will use simple random sampling and purposive sampling, Simple random sampling will be used because respondents have equal chances of being selected or picked the entire process of sampling will be done in a single step with each subject selected independently of other members of population and purposive sampling procedures. Purposive sampling will be used to select different activities in the area of investigation in order to get first hand information from the key informants in this case respondents who are knowledgeable or experts in the area of oil and gas.

Table 1: Category, target population, sample size and sampling technique that will be used in the study

Category	Target Population	Sample size	Sampling Techniques
Municipal Administrators	10	10	Purposive sampling
Oil companies	2	2	Purposive sampling
Area residents	48	30	Simple random sampling
Other key informants	104	58	Simple random sampling
Total	**140**	**100**	

Source: Krejcie and Morgan, 1970, p.608).

3.6 Data Collection methods

Data will be collected from primary and secondary sources. Secondary data will be got from the existing reports and magazines whereas primary data will be obtained by distribution of questionnaires to the respondents.

Mugenda and Mugenda (2005) states that questionnaires are used to obtain vital information about the population and ensure a wide coverage of the population in a short time. In addition Sekaran (2003) states that questionnaires are an efficient data collection mechanisms where the researcher knows exactly what is required and how to measure the variables of interest. He further asserts that administering questionnaires to number of interest simultaneously is less expensive and time consuming and does not require much skill to administer as compared to conducting interviews.

3.6.1 Data collection instruments

A self administered questionnaire will be used were closed ended questionnaire in which responses are provided by the researcher for example strongly agree, agree, strongly disagree and interview guide for key informants to help the researcher obtain additional in-depth information useful in the phenomena under investigation. it will focus at collecting respondents opinions and attitudes that may not be easily obtained from questionnaires, observation method will also be used.

3.7 Pretesting(Validity and Reliability)

3.7.1. Validity

Validity refers to the degree to which results obtained from analysis of the data actually represents the phenomenon under study. The validity of the research instrument was determined by pre testing. Mugenda and Mugenda (2005) assert that pre testing ensures clarity and accuracy

of results so that data collected gives meaningful, reliable results representing variable in the study. Pre-testing helped to estimate the time needed to take, to fill the questionnaires, pre-testing will be done by administering to ten (10) respondents within the study population but outside the sample. Questionnaires will be scrutinized by five colleagues at the University for their Peer Opinion on content and accuracy. Results from the field and opinion of colleagues will help identify gaps and make modifications to the instruments where necessary. The supervisors will also be notified accordingly.

3.7.2 Reliability

According to Mugenda and Mugenda (1999) reliability refers to the measure of the degree to which a research instrument yields consistent results or data after repeated trials. Cronbach's Alpha coefficient will be used to measure reliability of the instruments. Accordingly to Amin (2005), an alpha of 0.5 or higher is sufficient to show reliability; the closer it is to 1 the higher the internal consistency in reliability (Sekaran 2003). The questionnaire will be pre tested using ten (10) respondents within the division and the reliability results will be computed using the Statistical Package for Social Scientists (SPSS) and the scores will be evaluated as below:

Strongly agree	Agree	Not sure	Disagree	Strongly disagree
1	2	3	4	5

3.8 Data analysis

The quantitative data will involve information from the questionnaires only. Data from the field will be too raw for proper interpretation. It will therefore be vital to put it into order and structure it, so as to drive meaning and information from it. The raw data obtained from questionnaires will be cleaned, sorted and coded. The coded data will be entered into the Computer, checked and statistically analyzed using the Statistical Package for Social Scientists (SPSS) soft ware package to generate descriptive and inferential statistics Descriptive analysis will be applied to describe the primary variable and associated indicator items related to the study objectives.

3.9 Measurement of variables

The variables of the study will be measured using the five Likert scale. Different variables will be measured at different levels.

The variables will be measured at nominal and ordinal scale. The nominal scale measurement will be used in the first part of the questionnaire (demographics) which comprised items with some common set such as sex, age, marital status, designation and level of education of respondents. According to Mugenda and Mugenda (1999), nominal scales are assigned only for purposes of identification but do not allow comparisons of the variable being measured.

3.10 Anticipated limitations of the study

In the process of carrying out this research, a number of limitations will be met. These limitations will obstruct the speed at which the study will be carried out. These will include;

Some targeted respondents may not be willing to set aside time to respond to the investigator's questions this may end up frustrating the researcher's efforts to collect substantial data. The researcher is also likely to be faced by a problem of some rude and hostile respondents.

Challenge of getting permission from Ministry of energy and mineral development and security committee in the district.

The study will require a lot of time to be dedicated to collecting substantial data from one respondent to another making observations, continuous review of literature, data analysis and report writing.

3.11 Ethical considerations

It is important during the process of research for the researcher to make respondents to understand that participation is voluntary and that participants are free to refuse to answer any question and to withdraw from participation any time they are chosen.

Another important consideration, involves getting the informed consent of those going to be met during the research process, which will involve interviews and observations on issues that may be delicate to some respondents. The researcher undertakes to bear this seriously in mind.

.Personal confidentiality and privacy are very important since the research will be public. If individuals have been used to provide information, it is important for their privacy to be respected. If private information has been accessed then confidentiality has to be maintained (Stephen, P. 2002). All respondents will therefore, be re-assured of this before being involved.

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APPENDICES

Budget Estimate

ITEM	COST PER UNIT	TOTAL COST (UGX)
Library	50,000	50,000
Transport	200,000	600,000
Communication	50,000	50,000
Photocopy	100,000	100,000
Printing	150.000	150,000
Binding	50,000	50,000
Internet	50,000	50,000
Miscellaneous	200.000	200,000
Total		**1,260,000**

Work plan

ACTIVITY	TIME IN MONTHS				
	DEC	JAN	FEB	MARCH	APRIL.
Proposal writing	██	██			
Questionnaire design/pretest		██	██	██	
Data collection				██	██
Coding and analysis					██
Submission					██

SELF-ADMINISTERED QUESTIONNAIRE FOR THE RESPONDENTS IN HOIMA MUNICIPALITY

Dear respondent!

My name is Samuel Mugisa a student at Uganda Technology and Management University (UTAMU) pursuing Executive Master's Degree in Business Administration in Oil Governance and Management. This questionnaire is designed to collect information aimed at assessing the oil exploration activities and its social-economic effects on the well-being of communities in Hoima Municipality, Uganda. The information obtained will be strictly for academic purposes and it will be treated with utmost confidentiality. I kindly request you to fill this questionnaire. Thank you very much for your time and co-operation

SECTION A: Demographic data
(Tick in the appropriate box provided)

1. Your age

Under 25	25-34	35-45	Above 45

2. Gender

Male	Female

3. Marital status

Single	Married	Divorced	Widowed

4. For how long have you been in Hoima Municipality?

0-3years	4-6years	7-9years	Over 9years

5. What is the highest level of education you have attained?

Certificate	Diploma	Degree	Professional qualification	Masters	PHD

SECTION B: Effects of oil surveying to changes in prices of commodities in the municipality

Evaluate the following statements by ticking the appropriate alternative of your choice.

Strongly agree	Agree	Not sure	Disagree	Strongly disagree
1	2	3	4	5

	Statement	1	2	3	4	5
1	Most food commodities around the municipality come from the oil area					
2	There is scarcity of commodities since oil exploration began in 2006					
3	There is price increase of commodities in Hoima municipality since oil exploration began					
4	People's farms were destroyed in areas where oil was discovered leading to increase in the food price of commodities in Hoima municipality					
5	Surveys and mapping engineers influenced the prices of commodities in Hoima municipality due to their consumption capacity					
6	Surveying and mapping Oil companies stocked a lot of commodities leaving scarcity in the municipality hence high prices					
7	More expensive commodities started to flock the municipality due to the middles and first class surveyors and mapping engineers hence scarcity of cheap ones					

SECTION C: Road construction effects to economic transformation

Evaluate the following statements by ticking the appropriate alternative of your choice.

Strongly agree	Agree	Not sure	Disagree	Strongly disagree
1	2	3	4	5

	Statement	1	2	3	4	5
1	There was displacement of people in areas where roads to Oil exploration sites were constructed					
2	People's property including houses and gardens were destroyed					
3	There was increased number of migrants along road construction areas					
4	People more especially the youth abandoned their activities and went for employment in road construction companies in the exploration areas					
5	There was increased land grabbing due to road construction where some people were displaced to other areas					
6	Compensated residents in areas where road construction took place caused inflation in Hoima municipality					
7	Oil roads have led to improvement in incomes of communities					
8	There was creation of temporary employment					
9	There was increased rural urban migration due to excitements resulting from oil exploration					

SECTION D: Effects of collection seismic data to influx of people in the municipality

Evaluate the following statements by circling/ticking the appropriate alternative of your choice.

Strongly agree	Agree	Not sure	Disagree	Strongly disagree
1	2	3	4	5

	Statement	1	2	3	4	5
1	Communities were informed about oil surveying before the exercise started					
2	Good cooperation existed between oil exploration company officials and the communities					
3	I participated during oil surveying and mapping					
4	There was population increase in Hoima municipality					
5	Oil companies listened to our views as a community during seismic data collection					
6	Municipality officials set up programs aimed at sensitizing the public about oil exploration data collection and other related seismic information					
7	The was increased crime in the municipality due to increased influx of people					
8	Promised community support programs were aired out the people					
9	Oil companies listened to the community views					
10	Am pleased with the way the seismic data collectors communicate with my community					
11	Municipality officials assured the communities of their support in case of any misunderstanding with oil exploration companies					

INTERVIEW GUIDE FOR THE KEY INFORMANTS IN HOIMA MUNICIPALITY

Dear respondent!

My name is Samuel Mugisa a student at Uganda Technology and Management University (UTAMU) pursuing Executive Master's Degree in Business Administration in Oil Governance and Management. This questionnaire is designed to collect information aimed at assessing the oil exploration and its social-economic effects on the well-being of communities in Hoima Municipality, Uganda . The information obtained will be strictly for academic purposes and it will be treated with utmost confidentiality. I kindly request you to answer this interview. Thank you very much for your time and co-operation

1. Your age …………….

2. Gender ……………….

3. Marital status ………………..

4. For how long have you been in Hoima Municipality?...

5. What is the highest level of education you have attained?...

6. What do you think are the effects of oil surveying and mapping to changes in prices of commodities in the municipality?...
………………………………………………………………………………………………………
………………………………………………………………………………………………………
………………………………………………………………………………………………………

7. What are some of the measures the oil companies put in place to counter the effects of oil surveying and mapping to changes in prices of commodities in the municipality?...
………………………………………………………………………………………………………

………

………

8. What do you think are the road construction effects on the economic transformation?

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………………………………………………………………………………………………………..

9. Besides the economic sector, what other sector has road construction affected and how?

………

………

10. Do you think road construction during oil exploration had significant effects to economic transformation of Communities in Hoima municipality ? (If yes/no why)

………

………

………

………

11. What do you think are the effects of collection seismic data and influx of people in the municipality?...

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Thank you for participating.