EFFECT OF OIL AND GAS EXPLORATION ON LAND OWNERSHIP IN UGANDA: A CASE STUDY OF BULIISA DISTRICT

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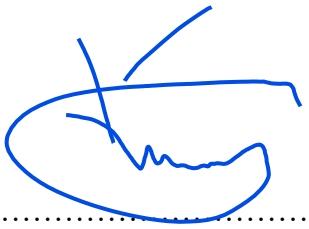
S18B44/034

A RESEARCH DISSERTATION SUBMITTED TO THE SCHOOL OF BUSINESS IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF A BACHELORS OF SCIENCE OIL AND GAS MANAGEMENT OF UGANDA CHRISTIAN UNIVERSITY

SEPTEMBER, 2024

DECLARATION

I, Kule Godwin here declare to the best of my knowledge that this research dissertation is truly my original work and has not been submitted before to any other Institution of Higher Learning for fulfillment of any academic award.



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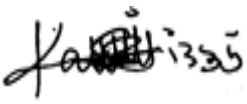
APPROVAL

This is to certify that this dissertation entitled **"Effect of Oil and Gas exploration on Land Ownership in Uganda: a case study of Buliisa District"** has been done under my supervision and it is now ready for submission

Signature  **……**

Ms. Isabella Izimba Kasiko

Date …18th SEPTEMBER 2024

DEDICATION

This thesis is dedicated to my family members for their input and support throughout my studies

ACKNOWLEDGEMENT

I give thanks to the lord for this thesis. I thank my friends; Engineer Emanuel Mfitukiza, Engineer stellah kebirugyi, Mr. Baluku Edison and Engineer Ronald kateeba Ivan for continued support and team work.

I thank my supervisor, Ms. Isabella Izimba Kasiko for the continued advice and guidance until thesis completion.

In a special way, I thank my beloved parents Mr. Bwambale Yolam, my mother Masika Grace and my wife Kabugho Christine for their continued support throughout my course

LIST OF ACRONYMS

CVI - Content Validity Index

SIAs - Social Impact Assessments

O&G - Oil and Gas

US - United States

CHAPTER ONE

1.1 Introduction

Uganda's recent discovery of oil reserves in the western region has sparked both excitement and concerns. While the potential economic benefits are undeniable, understanding effects of oil and gas exploration activities on the landownership is crucial. This study delves into the case of Buliisa District, situated at the heart of this unfolding story. By examining the effects of oil and gas exploration activities on the land ownership, we aim to shed light on the complex realities unfolding in Buliisa and contribute to informed decision-making about the future of oil development in Uganda.

1.2 Background of the Study

According to Nwankwo (2015), human beings depend on the resources they derive from the environment for their well-being and their very survival. Warfare is a prominent human activity used to gain access to these resources. Oil, gas, and minerals are vital natural resources that meet crucial human needs. Whether for transport, for heating, or for everyday goods and services, these resources constitute essential raw material inputs. Modern civilization would struggle tosurvive without readily available access to these resources at reasonable and affordable prices. It is for these reasons, these resources are considered to be strategic resources; critical for national and global well-being and prosperity.

Oil forms the largest percentage of energy consumption in the world, ranging from as low as 30% to as high as 60%, depending on the country's energy consumption level. Forming the world's largest industry in terms of dollar value, the oil and gas industry which includes exploration, production, distribution, refining as well as retailing is the largest in the world Venn(2012). The world"s nations interact with each other in their pursuit of external natural resources through governmental and non-governmental avenues in an astonishing variety of bilateral and multilateral ways. These international interactions change with time, ranging from cordial and synergistic to antagonistic and destructive Cotet &Tsui(2013). For instance, one of the several explicitly enunciated national-security objectives of the USA is to protect U.S economic interests worldwide by maintaining steady access to

energy supplies, other critical resources, and foreign markets. The relations among subdivisions or portions of a nation similarly range in changing patterns from the harmonious to the discordant. At the negative extreme of these spectra of international and domestic interaction are found overt threats of aggression and the actual pursuit of war Cotet &Tsui(2013).

Finally, there is the fact that oil has become a very expensive commodity. In recent years, the demand for oil has been at an all-time high. With high demand comes the need to produce more oil thus more and more oil discoveries are being made all over the world. However, with greater demands comes the rise in the commodities prices. Rise in demand coupled up with rise in prices makes oil a very scarce resource Heinberg(2015). This has created conflict as people all over the world are now fighting to access this scarce commodity.

In Africa conflicts arise due to world economic system which make the continent to be in the poverty cycle and control that is provoked by power and wealth disputes by the local people Anyandike(2017) .A case in point is the Niger Delta. Nigeria lacks self-government as it expropriates through coercive tools in order to maintain its governance. This contributes to poverty, environmental degradation and underdevelopment in oil producing areas thus conflicts happen in the area due to protest on injustices like damages on the environment and annoyance of consecutive policies of the government concerning programs of oil companies that are alleged to be unfair Eze(2010). Human conflicts have been consistent in sub-Sahara Africa and they have contributed to issues like insecurity in countries such as, Angola, Nigeria, Gabon, Congo, Senegal, Ghana, Sudan Ukiwo(2011)

In addition, Africa is home to important natural resources, in particular oil and minerals. But, the population does not really benefit from this wealth, which is exploited by foreign companies. In order to reverse this trend, African governments are developing policies to ensure that the exploitation of natural resources will benefit their citizens

Oil is a non-renewable resource that brings large revenue inflows to a country, but only over a limited period of time. This study revealed that pre-existing tension among communities has reignited due to the recent discovery of commercially viable oil and gas. For example, land use

between Banyabindi and Bakonzo, Bakonzo and Bamba, and Basongora and Bakonzo in Kasese, or between Batooro and Batuku in Ntoroko, are being attributed to oil discovery. However, the dynamics and source of these land use need to be explored in more detail.

According to Uganda oil and livelihoods (2013) similarly, there are border land use between Yumbe and Moyo districts. Allegations have emerged that new maps have been falsified to indicate that Yumbe district stretches up to the River Nile. This is seriously contested by Moyo district leadership and is creating tensions between the two districts. In addition, the study revealed that most of the serious land use in the oil exploration area is about land ownership and land use. In-migrations have been reported in the exploration area and this has led to scarcity of land as well as changing lifestyles. Land has become fragmented due to the increasing population, leading to a high demand for land a change associated with oil exploration activities taking place in these areas. Fraudulent sale of land is more common in the Bunyoro region. Inter-tribal and ethnic tensions have also been identified in some regions, particularly the West Nile, Acholi and Bunyoro regions.

Displacement due to oil-related activities was one of the issues cited as a potential source of conflict in the region. Development of the oil refinery is expected to displace over 30,000 people in the nine villages of Nyahaira, Kyapoloni, Bukona, Kabaketo, Nyamasoga, Rugashare, Katooke, Kijumba and Kitegwa as well as part of Kaayera in the Albertine region. The MEMD has earmarked UGX 5 billion (about US$1.8 million) for their compensation Kasoma(2012) Nevertheless, during the baseline study, cases of displacement were not common. Only 10% of the respondents acknowledged that their households were displaced in the past year.

Kasimbazi (2013) demonstrates that Uganda is a land locked country in east Africa. Oil exploration activities in Uganda are concentrated in the albertine graben, in the western region of the country. The oil exploration area stretches from West Nile to the south-western tip of Uganda covering an area of 23,000 km2.land issues such as compensation under the constitution, land act and land acquisition act is required for land to be acquired for public purposes which include oil exploration. The challenge is the poor are selling land to rich at a cheaper price and who expect

to benefit from the land. This is causing land use and landless people especially in Buliisa district.

The oil extraction has caused an increase in conflicts in Buliisa District. Due to the activity of companies like Tullow Oil, land has become an even more important commodity in the region. Many reports indicate that the digging of seismic wells and drilling, as well as other oil exploration activities, have led to displacement, changes in ownership of land and land acquisition conflicts in the region around the Albertine Graben, (Edward, 2011) reports that, the Balaalo (herdsmen) conflicted against the Bagungu cultivators over land. In 2010, more than 400 pastoralists were reportedly driven away from their land where oil had been found, after the government accused them of illegal occupation. In addition, research shows that in 2014 residents of Buliisa district become angry as they protested against the alleged grabbing of a small piece of land which was communal in Kisiimo Village where an oil well, kasemene-3 was found. Based on the above background, the study therefore seeks to investigate the effects of oil exploration on land ownership in Uganda.

1.3 Problem Statement

Although land is a very valuable resource in everyone's life, oil production frequently takes place close to populated areas, which can have a beneficial or bad impact on those around. It is estimated that over 30,000 square kilometers of croplands and rangelands in North America have been displaced by oil and gas drilling sites, which are taking over most of Africa, especially North Africa. These sites are also taking over roads, storage facilities, and thousands of acres of land for oil and gas drilling operations (Eric, 2015). In Buliisa, one of Uganda's oil-rich districts, a large number of people have been evicted from their ancestral lands and, in some cases, have not received compensation; this has led to an upsurge in land grabbing in the region.

Additionally, land use in the Albertine region, and Buliisa district in particular, has resulted from oil drilling, endangering the life of the indigenous people (Kisembo, 2019). Buliisa district land uses continue despite government efforts, as demonstrated by legal documents such as the National Oil and Gas Policy and the Constitution (International Alert, 2013). Threats from land uncertainty resulting from oil exploration activities have been covered by the media, including

hostility between the oil exploration company and the indigenous people and displacement (Kisembo, 2009, p.2).

Despite the results, not much research has been done on land usage and oil extraction, particularly in developing nations like Uganda where the aforementioned facts are confirmed.As a result, research on the connection between land use and oil exploration activities in the Albertine region, in particular the Buliisa district, was necessary.

1.4 Objectives of the Study

1.4.1Main Objective of the Study

To assess the effect of oil and gas exploration activities on land ownership in Uganda in Bulisa District

1.4.2 Specific Objectives

i. To identify the exploration activities taking place in Bulisa district.
ii. To establish the effect of the oil and gas exploration activities on land ownership in Bulisa district.
iii. To investigate the various ways of mitigating effects of oil and gas exploration activities on land ownership.

1.5 Research Questions

i. What are the exploration activities taking place in Buliisa district?
ii. What is the effect of the oil and gas exploration activities on land ownership in Buliisa district?
iii. What are the various ways of mitigating the effects of oil and gas exploration activities on land ownership?

1.6 Purpose of the Study

The main purpose of the study was to assess the effects of oil and gas exploration activities on land ownership in Uganda with a focus on Buliisa District.

1.7 Significance of the Study

The research finding helped to establish a relationship between oil and gas exploration companies, the government of Uganda and local owners of land in Uganda with a case of Buliisa District.

The results of this study assisted the Ugandan government in formulating plans for resolving difficulties that affected the local populations in Buliisa District, such as land grabbing, displacement, and homelessness, which were connected to nearby oil and gas exploration activities.

The research study was useful to other students who were conducting research in the mineral exploration field and those who would wish to expand on the mining area to obtain a foundation in the form of literature review like the Faculty of mining and petroleum in other institutions besides Uganda Christian University (UCU).

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 like the Faculty of petroleum and mining in other universities besides Uganda Christian University.

1.8 Scope of the Study

1.8.1 Content Scope

The research study's specific focus was to evaluate how Uganda's Buliisa District's land ownership has been impacted by oil and gas development activities. Two variables—the dependent variable (land ownership) and the independent variable (exploration activities)—will serve as the basis for this.

1.8.2 Geographical Scope

The study was conducted from Buliisa District, formerly a county under Masindi District delineated in 2006.

1.8.3 Time Scope

The study utilized a period of 6 months gathering information and arrangement within the duration that is November 2023- June, 2024.

1.9 Definitions of Terms

Exploration is the process of searching for valuable natural resources such as minerals, oil, gas, or metals beneath the Earth's surface. It involves the use of various geophysical, geochemical, and geological techniques to identify potential resource deposits. This phase is critical in industries like mining and oil & gas, as it lays the groundwork for discovering new reserves. Geologists, geophysicists, and engineers often collaborate to analyze terrain, subsurface structures, and rock formations, utilizing methods like remote sensing, seismic surveys, and exploratory drilling. (Exploration, Development and Production) Act 2013

Oil is any neutral, non-polar chemical substance that is a viscous liquid at ambient temperatures and is both hydrophobic and lipophilic. Oils have a high carbon and hydrogen content and are usually flammable and slippery, (Ndimbwa, 2014)

According to Olaki (2016), **Oil and gas exploration** (or Hydrocarbon exploration) is the search by petroleum geologists and geophysicists for hydrocarbon deposits beneath the Earth's surface, such as oil and natural gas. Oil and gas exploration are grouped under the science of petroleum geology.

Land: According to Cambridge Online Dictionary, Land means the surface of the earth that is not covered by water.

Land ownership is the legal right to possess, use, and control a specific parcel of land. This right is recognized by a governing legal system and often entails responsibilities such as paying taxes and adhering to land-use regulations. There are different forms of land ownership,

including freehold, leasehold, and communal ownership, depending on the legal and cultural framework (Oxford Learner's Online Dictionary)

Land eviction is the forced removal of individuals, families, or communities from a piece of land that they occupy. This can happen for a variety of reasons, such as the legal right of a landowner to reclaim property, government infrastructure projects, or private development initiatives. In many cases, land evictions occur without adequate compensation or relocation plans, leading to significant hardship for the displaced. Forced evictions, especially in rural areas, can result from land disputes, political motives, or economic pressures.

Land grabbing refers to the large-scale acquisition or lease of land, often by foreign corporations, governments, or wealthy individuals, in developing countries. This practice typically occurs in regions rich in natural resources or agricultural potential. Land grabbing is often criticized for displacing local communities, undermining food security, and contributing to environmental degradation (Merriam-Webster Online Dictionary, 2022).

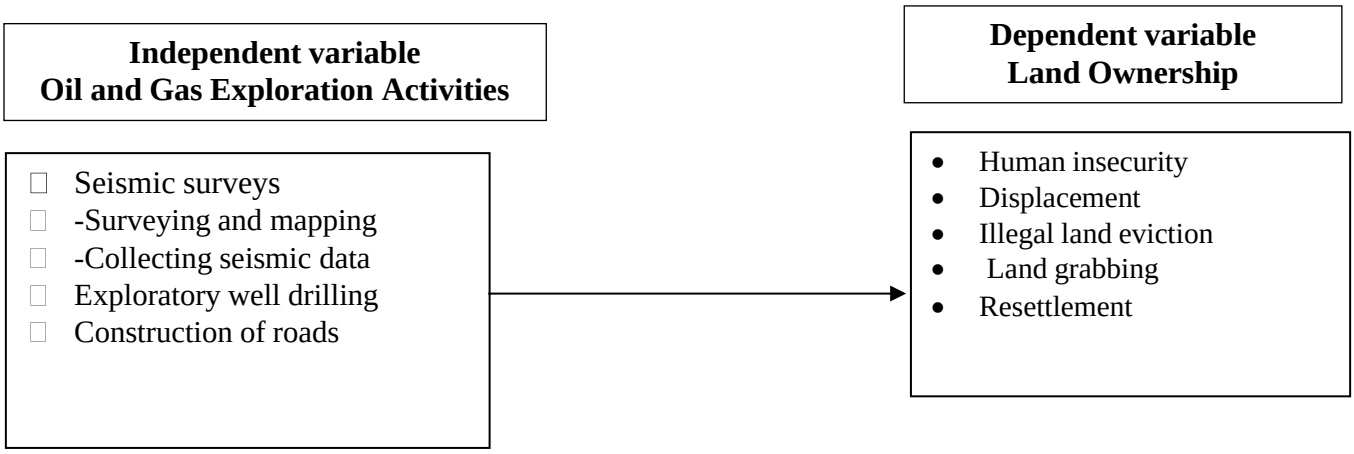
Exploratory oil well drilling is test hole drilled on land or in sea to ascertain the extent of recoverable gas and/or oil in a probable but yet-unproved location. Or deep hole, in the earth that a petroleum or natural gas company drills in the hopes of locating a new source of fossil fuel, (Kashambuzi, 2010)

Drilling: This refers to a cutting process that involves the use of a drill bit to cut a circular-shape hole in a solid material or in the ground (monroeengineering, 2019).

Seismic survey is a method of investigating subterranean structure, particularly as related to exploration for petroleum, natural gas, and mineral deposits. A seismic survey is a technique similar to an ultrasound that is used to develop images of the rock layers below ground, (Kisembo, 2014)

1.10 Conceptual Framework

The model shows the relationship between oil and gas exploration activities and Land ownership.



CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The concerns that have been conceptually investigated and examined in the literature on the impact of oil and gas exploration activities on land ownership were reviewed critically in this chapter. It is crucial to make sure that the most eminent authors of previously published works on the subjects covered by the study were consulted. In order to help the writer recognize the value of the many writers' contributions, the literature was comparative in that it adhered to the particular goals of the research.

2.2 Theoretical Review

The following theory was used in the course of carrying out this research

2.2.1 Property Rights Theory

Property rights theory was proposed by John Locke in 1690. The theory was rooted in laws of nature that Locke identifies, which permits individuals have rights to appropriate and exercise control over things in the world like land and other material resources. This means that individuals have control over their land and even the materials resources in it. In other words, Locke's theory is a justificatory account about the legitimacy of private property rights. Locke's natural law justification is different from other accounts circulating in the centuries of 17th and early 18th. For instance, Thomas Hobbes argued that rules protecting private property must be the design of the political authority. Alternatively, David Hume later argued that property rules acquire legitimacy by the mutual acknowledgment of a people. Locke's account has sometimes figured out contemporary political theory as a basis for Libertarian. However, establishing a basis for control rights is different than establishing the strength of those rights.

Article 26(1) of the constitution of Uganda provides for every person's right to own property either individually or in association with others, while Article 237 states the land in Uganda belongs to citizens of Uganda and shall vest in them in accordance with land tenure systems, customary, freehold, Mailo and lease hold. Such legislation includes land (amendment) Act,

2010 which enhances the security of occupancy of lawful and bona fide occupants on registered land in accordance with Article 237 of the constitution.

Since land in Uganda belongs to the citizens of Uganda, in case minerals like oil has been discovered in people's land, it is the role of the government to make clear arrangements and plans to compensate them or even get for them another area for settlement rather than just forcefully grabbing people's land.

2.3 Landownership in terms of resources

Land ownership refers to a space with a set of activities that involve securing water, food, medicine, shelter; and the capacity to acquire the above necessities by individuals, a group or community using endowments for meeting requirements of people's households on a sustainable basis with dignity (Batool, 2016). The activities are usually carried out repeatedly to maximize an angler's land ownership that depends on the fishing and availability of fish in waters and a farmer available on land.

In (Cordaid, 2016) notes that land and water are among the most important resources for communities, which don't only provide a place to live and source of land ownership, but for many communities, they are also directly related to their culture and identity. It further indicates that oil and gas or mining projects will always require access to land and water for example, for drilling sites, mine, camps for housing workers and equipment as well as access roads.

According to the 20 years of NAPE's environmental advocacy in Uganda (2016) document, land constitutes the main asset from which people or communities are able to derive their land ownership and that land represents a very valuable economic asset source of identity and culture. The document further states that in Uganda, many investments have resulted in dispossession, deception, violation of human rights, and destruction of land ownerships. It continues to note that land in rural areas comes under multiple pressures because of large-scale commercial farming, and mineral resource extraction.

Ofuoku *et al* (Ofuoku, 2014) studied the social impact of oil production on smallholder farmers in oil-producing communities of the Central zone of Delta State, Nigeria. However, they were rather interested in environmental problems experienced in the communities. Using data

collected from a sample of 120 respondents with the use of questionnaires, they identified soil erosion, noise pollution, bush burning, land degradation/pollution, water pollution, air pollution, massive deforestation and acid rain as the major environmental problems experienced in the study area.

Land ownership patterns are closely linked to historical, legal, and political contexts. In many countries, the state plays a significant role in owning or controlling land, especially when it comes to natural resources like oil and gas. For example, in many Middle Eastern countries, oil and gas resources are predominantly state-owned, allowing the government to control exploration, production, and revenue distribution Ross (2012). However, there has been a growing trend towards privatization and foreign investments in land and resources, particularly in developing countries. This trend often leads to conflicts over land rights, especially in areas where traditional land tenure systems are in place and are not formally recognized by the state Cotu (2012).

Land ownership is a complex and often contentious issue due to the continent's colonial history, which disrupted traditional land tenure systems. Today, many African countries still grapple with issues of land reform, aiming to address the inequities created during the colonial period. Additionally, the discovery of natural resources like oil and gas has intensified disputes over land ownership and control. For instance, in countries like Nigeria and Angola, the presence of oil has led to significant economic growth but also to severe social and environmental challenges, including displacement of communities, environmental degradation, and conflicts between local populations and oil companies Watts (2004).

In Uganda, land ownership is governed by a dual system that includes both statutory law and customary land tenure systems. The Land Act of 1998 recognizes four types of land tenure: customary, freehold, leasehold, and mailo. Customary land tenure, which is prevalent in rural areas, is based on traditional practices and is not always formally documented, leading to disputes, especially when valuable resources are discovered. The discovery of oil in the Albertine Graben region of Uganda has brought issues of land ownership to the forefront. The government claims ownership of the subsoil resources, as stipulated by the Constitution of Uganda (1995), which states that all minerals and petroleum belong to the state. This has led to

tensions between the government and local communities, many of whom claim customary ownership of the land Busingye(2017).

When valuable resources such as oil or gas are discovered, ownership typically defaults to the state, as enshrined in many national constitutions. For example, in Uganda, the government owns all minerals and petroleum, regardless of who owns the surface land. This often leads to conflicts with local communities, who may be displaced or inadequately compensated for their land Byakagaba (2016). Communities living on land where resources are discovered often face significant challenges, including displacement, inadequate compensation, and loss of livelihoods. The discovery of resources can lead to forced evictions, where people are removed from their land to make way for resource extraction projects Vanclay(2017). These processes often involve minimal consultation with affected communities and inadequate provisions for resettlement or compensation, leading to social unrest and long-term human insecurity.

The key legal frameworks governing land ownership and resource management include the Constitution of Uganda (1995), the Land Act (1998), and the Petroleum (Exploration, Development, and Production) Act (2013). These laws establish the state's ownership of all minerals and petroleum and provide guidelines for land acquisition, compensation, and resettlement of affected communities. However, the implementation of these laws has been criticized for favoring investors and the state over local communities (Bategeka & Matovu, 2011)

2.4 Review of Exploration activities taking place in Buliisa

2.4.1 Seismic Survey Activities and Land Ownership

Seismic surveys refer to a technique or method of gathering information about the characteristics and location of geological structures beneath the Earth’s surface. This information gathered is used to produce maps of structures identifying areas where oil deposits may be found. Seismic survey activities involve surveying which include seismic testing, mapping and collection of seismic data. The seismic testing is carried out by a specially configured truck known as a vibroseis truck that lowers a plate onto the surface. This plate generates an acoustic sound signal that is transmitted into the earth’s surface which then reflects off the various geological layers. The returning sounds waves are recorded by small microphones (geophones) strung

together that are laid along a predetermined and prepared path called a seismic line (Metgasco, 2011).

According to (discussion, 2007) conducting an investigation overview is the primary phase of discovering hydrocarbon-bearing stone developments, geographical guides are assessed in order to identify major sedimentary bowls and information procurement is done. A seismic review is the most well-known appraisal technique and is regularly the principal field action attempted. Seismic surveys gives information about the geography of the area where oil is being discovered, expansion of marine seismic lines, navigational signals, inland seismic lines and seismic activity camps. These activities particularly affect the nearby gatherings, especially indigenous people who may have their ancestral way of life impacted. The key effects may include changes in land-use designs, neighborhood population increase as a result of migration and clashes in land use. Since seismic surveys cover large areas and produce localized images, they can have significant impacts on the land that they cover. Remember surveyors do not always clear wide paths to allow easy truck access so they end up passing trucks in the nearby land (CourthouseDirect.com Team, 2013).

In many developing regions, particularly in Africa and Latin America, local populations may not have formal titles to their land. This situation can make them vulnerable to displacement, as governments or corporations can seize land for exploration with little or no compensation. Scholars such as Cotula (2012) argue that oil companies often rely on legal frameworks that do not fully recognize customary land rights, making indigenous and local populations susceptible to displacement and insecurity. This undermines human security as communities lose access to their traditional lands, which are essential for their livelihood.

According to Joint E&P forum (2017, p.4-5) exploration survey is the first stage of the search of hydrocarbon-bearing rock formations, geological maps are reviewed in desk duties to identify major sedimentary basins and data acquisition is carried out. A seismic survey is the most common assessment method and is often the first field activity undertaken. Seismic survey provides detailed information on geology and the potential requirement on ground include access to onshore and marine resource areas, possible onshore extension of marine seismic lines, onshore navigational beacons, onshore seismic lines and seismic

operation camps.(Joint E&P forum, 2017, p.12) states exploration and production operations likely to induce economic, social and cultural changes

The extent of these changes is especially important to local groups, particularly indigenous people who may have their traditional lifestyle affected. The key impacts may include changes in land-use patterns, local population levels as a result of immigration, land use land use, conflict between development and protection and displacement.

Clayton (2011) Clement claims that seismic surveys are used to locate and estimate the size of offshore oil and gas reserves. To carry out such surveys, ships tow multiple air gun arrays that emit thousands of high-decibel explosive impulses to map the seafloor. These disturbances can disrupt and displace important migratory patterns, pushing marine life away from suitable habitats like nurseries and foraging, mating, spawning, and migratory corridors and related land use. In my opinion, the author did not show how seismic survey activities contribute to land use; which made the study imperative.

Noble (2012) asserts that unlike surface geophysical analysis, seismic testing does disturb the surface resources and wildlife. With most seismic testing occurring the summer or seasons when weather permits, there is conflict with other backcountry users. Additionally, there is a risk that backcountry users or cattle ranchers will cross shot lines when blasting is about to occur. A special use prospecting permit must be acquired from surface land management agency before seismic testing may be conducted (U.S department of Agriculture, forest services, 2011, A-3).

The Carbon Capture and Storage Statutes Amendment Act, 2010, amended the Surface Rights Act and expanded the jurisdiction of the Surface Rights Board to grant Right of Entry for geophysical operations associated with carbon capture and storage (CCS) development including monitoring of those operations on private lands. With the exception of access for a CCS development, a seismic operator can't gain access unless the landowner voluntarily gives consent. The specific rights of the landowner are protected under the Exploration Regulation, which states no person shall conduct exploration on private land, except with the consent of the owner of the land or a person authorized by the owner to give that consent. It is important to note that unless the occupant of private land has an agreement with the owner of the

land under an agricultural lease agreement, the occupant may not give permission to the seismic company to enter upon the land, cut trees or commit waste (waste is the abuse or destructive use of property).

The Agricultural Lease will convey a specified set of rights. In addition, the potential for drill holes to create a problem that lasts beyond the term of the tenancy creates a need for the landlord to consent to seismic activity. In view, the amendment did not stipulate anything regarding land use which did not make the research valid.

2.4.2 Exploratory Well Drilling and Land Ownership

Joint E&P forum (2017, p.4) reports that once a promising geologic al structure has been identified, the only way to confirm the presence of hydrocarbons and thickness and internal pressure of reservoir is to drill exploratory boreholes. All wells that are drilled to discover hydrocarbons are called "exploration" wells commonly known by drillers as "wildcats" The location of a drill site depends on the characteristics of underlying geological formations. It's generally possible to balance environmental protection criteria with logistical needs and the need for efficient drilling

For land-based operations; vegetation is cleared, drilling area is leveled and a pad is constructed at the chosen site to accommodate drilling equipment and support services. A pad for single exploration well occupies between 4000-15000m sq. The type of pad construction depends on terrain, soil conditions and seasonal constraints. Land-based drilling rigs and support equipment are normally split into modules to make them easier to move. Drilling rigs may be moved by land, air or water depending on access, site location and module size and weight. Once onsite, the rig and a self-contained support camp are then assembled (Joint E&P forum, 2017, p.6), however the forum did not establish how exploratory well drilling contributed to land use which made the study inevitable.

These are generally 14 to 20 feet-wide graded roads. There is growing interest in using helicopter rather than road access in cases where the terrain is difficult to pass or when special surface resources would be harmed especially in wilderness areas. Joint E&P forum (2017, p.17) opines that building of roads and site preparation, comments are centered on vegetation

clearance, possible erosion and changes in surface hydrology; vibration and noise from earth moving equipment; disturbance of population and wildlife; impacts related to influx and settlement through new access routes; drainage and soil contamination; land use land use; loss of habitat and construction noise. All induce human, social-economic and cultural impacts as a result of exploration and production operations. The study expounded on this by specifically relating exploratory well drilling activities and land use.

Exploratory well drilling activities last from 1 to 2 years. Commonly, 2 or 3 wells will be drilled during this exploratory stage (oil and gas journal, June 7, 2012, p.66-67).Environmental impacts associated with exploratory well drilling are obviously dependent upon precisely where the exploratory well is to be located; a well site on flat desert terrain will pose different problems than one located in high mountain meadow. A preliminary environmental review occurs before an operator's plan are finalized and submitted. This review identifies potential land use with other land uses or resources and impact mitigation steps that might avoid these land use. The purpose of this review is to assist the lessee and operator in developing project plans and directing initial surveying and staking activities before they occur (wondolleck 2013)

Land is a very important resource. Several reports (e.g., Uganda Land Alliance, 2011, p.6; Bomuhangi and Doss, 2012, p.23) indicate that oil exploration activities, such as the digging of seismic wells and drilling, have already led to changes in ownership of land, conflict, and displacement as well as an influx of migrants vying for opportunities in the Albertine Graben.

Not only is this growing migration likely trigger population growth, increase land pressure, and escalate competition among the indigenous people and newcomers, it is also likely to place more demand on the already limited social services of education, health and water in the region. This large movement of people has implications for fiscal expenditure and allocation as well, making it critical to capture land issues, demographics and changes in social infrastructure, including schools and hospitals and other physical infrastructure aspects such as roads and telecommunications. In addition, there is a precedent of increased health and other social problems connected with oil exploration: For example, studies from Nigeria and Ecuador document increased health risks to communities as result of pollution from oil exploration. There

are also risks associated with transfer of disease by migrant populations to their new communities Dadiowei(2013).Despite, the strength of the literature done by Uganda Land Alliance, more evidence was needed which necessitated further study.

2.4.3 Construction of Roads and Land ownership

Even though road (re)construction always seems promising, some analysts have expressed concern about its impact on livelihoods, security, and society in Afghanistan. Lorenzo Delesgues comments on the cost of (re)construction and the increased insecurity and benefits to warlords and other well-positioned elites that result Delesgues (2017)

The consulting firm Mott MacDonald commissioned by the United Kingdom‟s Department for International Development examined problems with post-conflict infrastructure redevelopment: corruption, problems with disenfranchised and marginalized groups, access to essential services, coordination, security, land use and the aggravation or re-emergence of grievances and tensions (Mott MacDonald 2015). The report found that "in most situations, the triggers for conflict can be related to power and/or resources and, while the reconstruction phase provides opportunities to mitigate underlying tensions, it is also possible to exacerbate them inadvertently "Mott MacDonald(2015). Bastiaan Philip Reydon also notes that a primary reason for land grabbing in conflict scenarios is power Reydon(2016).The study expounded on this by relating oil exploration activities and land use in Buliisa district.

When road (re)construction and land tenure issues collide, there is often a surge in land grabbing, which is driven by large increases in land values after road (re)construction, weak customary and statutory tenure systems, increased access to land, flourishing corruption, and the absence of landowners, tenants, and their relatives or heirs Reydon(2016).The recent discovery of large mineral deposits (Risen 2010; Rubin and Mashal,2010) will require more road (re)construction to facilitate exploitation and may result in seizure of land above mineral deposits and along new access roads. The road construction will likely raise suspicions that foreign builders want to control land that contains minerals fears the Taliban, among others, will likely encourage. In Afghanistan, land grabbing by powerful interests, including government officials, militia commanders (Sherin 2009; Synovitz 2013), former military commanders, and members

of parliament, is pervasive and firmly related to the corruption and dislocation of people (Irvine 2017). Land grabbing is lucrative, widely known, and historically volatile (Batson 2008; Irvine 2017; Sherin 2009). It may push the country into renewed civil unrest (Batson 2008, p.18; IWPR 2008), even decades of conflict PakTribune(2013).

According to the Observer of July 6th2015 reported that Advocates Coalition for Development and Environment (ACODE) has called for a commission of inquiry instituted to investigate the land use, which is fermenting anger and hatred in the oil rich Albertine graben. Uganda discovered commercially-viable oil deposits in the Albertine graben in 2016 and has since embarked on establishing effective management procedures to promote growth and development for the country. Up to 6.5 billion barrels of oil have been discovered so far in less than 60 per cent of the Albertine graben. In spite of these discoveries, the Albertine graben has been locked in a series of land use and forced evictions in the recent past. Some of the land use and evictions have been a result of government-led development projects such as the acquisition of 29sq miles of land in Kabaale, Buliisa district in Albertine region for the oil refinery development that affected about 7,081 people, the construction of Kaiso-Tonya road in Hoima that affected about 1,500 people, among others.

2.5 The effect of oil and gas exploration activities on land ownership.

The collection of seismic data involves creating small explosions or using vibrating trucks to send shockwaves into the ground, which helps in mapping underground oil and gas reserves. This process often requires temporary or permanent access to large tracts of land, leading to displacement, both temporary and permanent. The disruption of ecosystems and traditional land use systems, including agriculture and grazing, can lead to forced resettlement.

Research by Mosley (2014) highlights that in countries like Nigeria; seismic data collection in oil-rich regions has resulted in the disruption of local farming activities, pushing rural communities off their land. The lack of compensation and inadequate resettlement packages in such instances creates long-term economic insecurity for the displaced populations.

Furthermore, seismic data collection can exacerbate illegal land eviction, particularly in cases where the local population does not have formal land tenure. Oil companies, sometimes backed

by government forces, may coerce communities into vacating their lands, often without due process, leading to land insecurity and conflicts.

According to studies by Alden Wily (2011), in many African and Southeast Asian countries, the development of oil roads has been linked to the dispossession of indigenous communities through land grabbing. Powerful elites, multinational corporations, and even the state sometimes seize land to control oil resources, with local communities losing their land rights in the process. The roads themselves, while ostensibly meant to facilitate oil extraction, often become conduits for further encroachment on communal lands.

Resettlement due to oil exploration is often problematic. Companies and governments may offer resettlement packages, but these are frequently insufficient, poorly implemented, or completely lacking. As noted by Schoneveld (2014), in cases like Uganda's Albertine Graben, the resettlement of communities to make way for oil drilling projects often resulted in lower quality of life, reduced access to basic services, and loss of social cohesion. The lack of adequate compensation and the failure to replace lost land with similarly productive land lead to chronic insecurity for displaced populations.

The issue of land grabbing and illegal eviction has been extensively studied in the context of natural resource extraction. The involvement of powerful state and corporate actors in the oil and gas sector often marginalizes local populations. The legal frameworks in many countries do not adequately protect a customary land right, which makes it easier for oil companies to legally evict communities from their land. In countries like Ghana and South Sudan, scholars such as Tsikata and Yaro (2014) have documented how the lack of clear land rights facilitates illegal land grabs, often under the guise of "development projects."

In many cases, displaced populations had been moved to less fertile areas, with little consideration for their agricultural or economic needs. The lack of compensation, or inadequate compensation, exacerbates poverty and increases human insecurity. The loss of land also threatens cultural identity, as many communities have deep ties to their ancestral lands.

According to Watts (2004), in his study of the Niger Delta, discussed how oil exploration has led to the dispossession of local communities, displacement, and severe environmental degradation, all of which undermine human security. Communities often do not receive adequate

compensation, and the influx of non-local workers leads to the erosion of local social structures. In addition, Finer et al. (2008) examined how oil exploration has led to land grabbing and the displacement of indigenous populations. The construction of oil roads has opened up previously remote areas to settlers and illegal loggers, leading to violent conflicts over land ownership.

Considerable evidence from oil producing countries such as Nigeria, Gabon, Angola, Sudan, Chad and others in Africa clearly indicate that oil is a resource of both great opportunity and peril (Ericson, 2014). It is an opportunity because it brings huge revenue for the country's economic development indicated by social services such as schools, hospitals and roads. On the other hand, it is a problem when the revenue is misused hence causing conflicts. Uganda is one of the African countries that have been infested with corrupt officers; yet according to Ericson indicates that countries whose officers are corrupt cannot receive anticipated benefits from oil and gas exploration. This is due to the fact that multinational companies which might have led to development become insolvent to serve the interest of the business entrepreneurs so grassroots people remain poor.

Besides, it was found out that oil and gas exploration lead to the destruction of structures that once provided land ownerships for women in oil- producing communities, which puts an undue burden on women in these communities forcing them to turn to commercial sex.

2.6. The mitigating the factors associated with effect of oil and gas activities on land ownership.

The effectiveness of initiatives aimed at mitigating the environmental effects of oil and gas development is recognized to be constrained by a number of factors. One significant obstacle to the efforts aimed at mitigating the environmental effects of oil and gas development is the existence of unexploited hydrocarbons in certain areas (Harfoot, 2018). Protected areas, for instance, are situated on $3–15 trillion in untapped hydrocarbon reserves, which presents serious difficulties for the environment and its resources.

One of the foundational aspects of mitigating the adverse effects of oil exploration and production is the establishment and enforcement of comprehensive legal frameworks. Proper

laws and regulations ensure that oil companies operate in a manner that minimizes environmental degradation and protects the rights and livelihoods of local communitie.

Effective environmental regulations are crucial in reducing the ecological footprint of oil extraction activities. Laws governing waste disposal, emissions, land use, and water management are necessary to prevent pollution and habitat destruction. According to Frynas (2005), strong environmental regulations compel companies to adopt cleaner technologies and adhere to international environmental standards, thus reducing the ecological damage caused by oil extraction

Proper legal frameworks should also address land rights and ensure that communities are adequately compensated for the use of their land. Boele, Fabig, and Wheeler (2001) argued that clear and enforceable laws regarding land acquisition and compensation are essential in preventing conflicts and ensuring that communities are not disenfranchised by oil activities.

SIAs are critical tools for understanding the potential effects of oil projects on local communities. SIAs help in identifying, predicting, and evaluating the social consequences of proposed projects before they are carried out, allowing for the development of mitigation strategies. SIAs involve the systematic analysis of the potential social impacts, including changes in local demographics, economic conditions, health, and cultural practices. Vanclay (2003)noted that by conducting SIAs, companies can anticipate potential negative impacts and develop strategies to mitigate them, thus avoiding social unrest and ensuring the sustainability of the project. A key aspect of SIAs is the involvement of local communities in the assessment process. Esteves, Franks, and Vanclay (2012) emphasized that engaging communities in SIAs ensures that their concerns and values are considered, leading to more effective and socially acceptable mitigation measures.

Regular consultation with communities ensures that their voices are heard in decision-making processes. Owen and Kemp (2013) argued that obtaining the free, prior, and informed consent (FPIC) of communities is a fundamental principle that should guide all interactions between oil companies and local populations. This process not only empowers communities but also helps in identifying potential issues before they escalate.

This involves educating and raising awareness among communities about the potential impacts of oil projects and the measures that can be taken to mitigate them. This strategy is crucial for empowering communities to participate effectively in decision-making processes and for ensuring that they are aware of their rights. Sensitization campaigns can inform communities about the environmental and social risks associated with oil projects and the legal frameworks that protect their rights. Eweje (2006) noted that well-conducted awareness campaigns can reduce misinformation and equip communities with the knowledge needed to engage with oil companies and government agencies more effectively.

Furthermore, beyond just raising awareness, sensitization should also include capacity-building initiatives that enable communities to take an active role in monitoring and mitigating the impacts of oil projects. Lederach (1997) argued that capacity-building initiatives can strengthen the social fabric of communities, making them more resilient to the potential disruptions caused by oil exploration and extraction.

The absence of routinely collected critical environmental data limits for places such as the North Sea (which is limited to 50 years), makes it difficult to effectively address the environmental impacts of oil and gas exploitation to achieve sustainable management of marine ecosystems. (Murray, 2018)further argued that active and transparent communication and collaboration between stakeholders in the oil and gas industry is key to achieving effectiveness in mitigating the environmental impacts of the oil and gas industry because it results in barriers to data sharing-risk perception, working cultures, financial models and data ownership.

Transparent communication about the risks and benefits of oil projects is essential for building trust between companies and communities. Frynas (2009) suggested that when companies are open about their activities and potential impacts, communities are more likely to support the project and collaborate in mitigating negative effects.

The case of oil and gas exploitation and its environmental impacts on communities nearby the Jubilee oil Fields in Ghana is no exception to the discourse as mitigation measures continue to face challenges. Some studies have identified sediment concentrations of organic and various metals (e.g. barium, copper, mercury, lead and Zinc) as major environmental pollutants of oil and gas production in the Jubilee Fields of Ghana (Graham, E. and Ovadia, J.S., 2019).

Similarly, oil and gas exploitation in the Jubilee field has resulted in low fish catch, loss of jobs and land ownerships, increase in environmental degradation and pollution for the nearby communities (Harfoot, M.B., Tittensor, D.P., Knight, S., Arnell, A.P., Blyth, S., Brooks, S., Scharlemann, J.P., et al. , 2018). Although oil and gas production in the Jubilee field has contributed immensely to the economic development of Ghana, the mining activities have also impacted on diverse ecosystems of mangrove swamps and freshwater swamp through contaminated streams and degradation of biodiversity in nearby communities such as Ahanta West, Shama, Nema East/west, Jomoro, Elembelle and Sekondi-Takoradi (Sakyi, P.A., Efavi, J.K., Atta-Peters, D. and Asare, R., 2012). In some other instances, the oil and gas production has created angling of about 500 m, which is a preventive tool adopted by these oil and gas producing companies to restrict the populace from accessing the mining area; a major recipe for conflict (Quist, L.M. and Nygren, A., 2015). Meanwhile, a few mentions have been made in the extant literature on the effectiveness of measures adopted to mitigate the environmental impacts of oil and gas production in the Jubilee fields of Ghana.

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction

This chapter presents the methodology that was used in the study. This includes the research design, area of the study, the study population, sampling procedures and the data collection method.

3.1 Research Design

Descriptive analytical research design using both qualitative and quantitative methods was used in this study. The study combined a quantitative and qualitative methodology since the former gave in-depth analyses of the events, while the latter supplied the information essential to achieve the study's objectives.

3.2 Study Population

The study's target population consisted of 130 individuals who were either involved in the effects of oil exploration on land ownership in Uganda or had knowledge of them. They were selected from six sub counties and one town council: Buliisa, Biiso, Kihungya, Butiaba, Kigwera, Ngwedo, and Buliisa Town Council.Ten representatives from global oil corporations, fifty-seven local citizens, ten elected officials, twenty-five municipal managers, and twenty-five local council members.

3.3 Sample Size

The sample size, calculated using Krejcre and Morgan's Table (1970), is 97, and it consists of 38 members of the local community, 20 municipal administrators, 20 local council members, 10 politicians, and 9 oil firms.

3.4 Sampling Techniques

In order to ensure that samples of the same size have an equal chance of being chosen, this study used simple random sampling, in which the sample was drawn from the population. By assigning numbers to respondents, a straightforward random sample selection process was carried out, allowing data collection from a representative sample to simplify the conclusions. Purposive sampling was also used in this study, meaning that the researcher made her own decisions about the respondents from whom the data was gathered. Because of this, the respondents were chosen based on the researcher's perception of their ability to provide the necessary data.

3.5 Data Types and Sources

3.5.1 Primary Data

This means the first hand information that obtained from its source for the first times. Primary data was obtained from respondents by administrering of questionnaires to respondents of selected sample and use of interview guide where the researcher will interact with the selected group of respondent face to face.

3.6 Data Collection Methods

By using an interview guide and distributing questionnaires to members of a pre-selected sample, primary data was collected from the respondents. This is so because primary data comes from the most trustworthy source and is more dependable, current, and accurate. Twenty municipal administrators, twenty local council members, ten politicians, and nine oil firms were sent the surveys. Within precisely defined possibilities, the responders reported their responses. Because the variables in the study, such as the respondents' views, opinions, perceptions, and feelings, cannot be observed, the questionnaire approach was adopted.

The questionnaire was used because it was less expensive for data collection. The questionnaire was used to collect primary data from the selected respondents by personally delivering them to the respondents.

38 community members who are key informants with knowledge of how land ownership in Uganda is affected by oil and gas exploration activities were interviewed. Using this approach, the investigator will conduct in-person interviews with the participants to gather comprehensive qualitative data regarding the impact of gas and oil exploration operations on land ownership in Uganda.

3.8 Data Collection tools

3.8.1 Questionnaires

Kothari (2004) defines a questionnaire as a pre-formulated written set of questions to which respondents record their answers, usually within rather closely defined alternatives. Questionnaires will be used because they increase the degree of reliability due to the many items in them and they as well enhance the chances of getting valid data (Ezeani, 2005). The questionnaire consisted of closed ended questions. The questionnaire was administered to area residents in Buliisa district.

3.8.2 Interview Guide

The interviews were used to collect in depth information on the study. Essentially there is need to capture the perspectives of the local people, companies involved and the associated institutions, in order to carry them along in this important resource extraction. According to Ragin (2011), interviews described the life events and experiences of the respondents with respect to analysis of the significance of the portrayed phenomena. As Somekh and Lewin (2009) argues, interviews are basically the correct technique to use when exploring sensitive topics (like oil exploitation), to create conducive environment for respondent to take part. These consisted of; face-to-face interviews (conducted by the peer research assistant), while telephone interviews were used in areas where extensive access was an obstacle. Both structured and semi-structured interviews will follow the “why” and “how” questions. In this study, oil company officials were extensively interviewed.

3.9 Validity of the Instruments

3.9.1 Validity

This shows how closely the findings from the data analysis truly depict the phenomenon being studied (Mugenda & Mugenda, 2003). The Content Valid Index (CVI) will be used to verify the validity of the data. In order to do this, a copy of the questionnaire was given to the supervisors and subject matter experts, who were asked to score the pertinent questions and items in connection to the study objectives. The scores were then divided by the total number of items. Here is how the validity was examined:

$$\text{CVI}=\frac{\text{valid Items}}{Total\ Number\ of\ Items}$$

The acceptable rate that researcher preferred is 0.5 that resulted from the division of the corrected questions out of the total questions.

3.9.2 Reliability

According to Kasomo (2006), reliability refers to how consistent a research procedure or instrument is. It therefore means the measure of degree to which research instruments yields consistent results or data after repeated trials. The test re-test method was used to assess the reliability of the instruments. This involves administering the same questionnaires twice to 25 respondents in region and correlating their responses independently. After administering the questionnaires, a correlation co-efficient was calculated using appropriate formula to establish the relationship between the two set of scores. Spearman's Brown Prophecy formula was applied as shown below:

Reliability of the entire test = (Reliability of 0.5 test) (r)
1+ (Reliability of 0.5 test) (r)
Where r, is Coefficient of correlation

The mean of the reliability is established at 0.79 therefore the internal consistency (Reliability) of the instrument is confirmed. A coefficient of 0.7 and above would mean that the research

instruments are reliable hence a display consistence in the research finding. The reliability test produces a coefficient of correlation of 0.79; this meant that the data collection instruments will be reliable enough to give consistent findings.

3.10 Data Analysis

3.10.1 Quantitative Analysis

The quantitative data was presented in form of descriptive statistics of frequency and percentages for each of the variables used in the study and analyzed using a data analytical tool known as Statistical Package for Social Sciences (SPSS). Strongly agree and agree was combined to mean agree while strongly disagree and disagree was combined to indicate disagree.

3.10.2 Qualitative Analysis

The qualitative data was analyzed using content analysis where information gained through the interviews was arranged in major themes and related categories. The data was then presented as the interviewee will narrate. Implications, conclusions and synopsis of qualitative information on the effects of oil and gas exploration activities on land ownership were then drawn. Effort was directed to cross examine the qualitative data with the quantitative findings on their level of agreement or disagreement

The study used a 5-point Likert scale to measure the variables which are the effects of oil and gas exploration activities on land ownership to come up with findings. This ranges from strongly agree to strongly disagree that is to say; strongly agree, agree, not sure, disagree, and strongly disagree.

3.11 Ethical Considerations

Ethical concerns were taken into consideration by first acquiring an introductory letter from the Uganda Christian University (UCU) and then seeking authorization from the administrators of the selected area of study. Participating and responding will not be compulsory as no respondent was forced to be interviewed or fill in the questionnaire. Ethical considerations were taken care of by the researcher by briefing the respondents about the purpose of the research, their relevance

in the research process and expectations from them. The questionnaire was made with no part for the name of the respondents to ensure confidentiality.

3.12 Limitation of the Study

- Unwillingness of some respondents to answer questions; however, the researcher is prepared to do everything possible like to reach and convince the respondent to avail him with the necessary information.
- The study area is security conscious with strictness on entry to visitors; all attempts including personal identifications and compliance with regulations were adhered with by the researcher.
- Time consuming: due to a lot of movements while fixing appointment with high authority.
- The researcher however, tried to make appointments with the high authority personnel on the particular day and time to be interviewed.

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION, INTERPRETATION AND DISCUSSIONS

4.0 Introduction

This chapter gives the background of respondents, the description of the dependent variable Oil and gas exploration activities in Uganda in Buliisa District Western Uganda.

4.1 Demographic Information

This section examines, summarizes, and provides an interpretation of the data on the respondent's age in completed years, gender, educational attainment, and length of employment with the company.

4.1.1 Age of the respondents

The respondents were asked to state their age in completed years. The results are as shown in table

Table 1: Showing the age of respondents

Category	*Frequency*	*Percent*
25 years	16	16.5
26-35 years	50	51.5
36-45 years	12	12.4
46-55 years	15	15.5
55 and above	4	4.1
Total	97	100.0

Source: *Primary Data, 2024*

The average age of the respondents was 36-45; the oldest respondent had 55 years with the youngest respondent having 25 years. The majority of respondents (51.5%) were between the

ages of 26 and 35, closely followed by 15 (15.5%) between the ages of 46 and 55, 12 (12.5%) between the ages of 36 and 45, and 16 (16.5%) between the ages of 25. The lowest percentage of respondents (4.1%), however, was between the ages of 55 and 46.

4.1.2 The respondents' gender

The respondents were asked to state their gender. The results are as shown in table

Table 2: Showing the Respondent Age

Category	*Frequency*	*Percent*
Male	64	66.0
Female	33	34.0
Total	97	100.0

Source: *Primary Data, 2024*

With 64 (66%) of the total, men were the most numerous, while women made up 33 (34%) of the total.Because the respondents were chosen at random, it can be assumed that there were more male than female landowners.

4.1.3 Level of Education

The respondents were asked to state their level of education and the results are as shown in table

Table 3: Showing the Respondents

Category	*Frequency*	*Percent*
Diploma	17	17.5
Degree	48	49.5
Post graduate	21	21.6
Masters	11	11.3
Total	97	100.0

Source: *Primary Data, 2024*

Degree holders made up the largest group of respondents (48, or 49.5%), followed by diploma holders (17, or 17.5%), postgraduate holders (21, or 21.6%), and masters holders (11, or 11.3%).

4.2 To identify the exploration activities taking place Bulisa District

This section analyses, interprets, presents and discusses findings on the first objective: identify the exploration activities taking place Bulisa District

Table 4: Descriptive statistics showing the exploration activities taking place Buliisa District

Category	*Mean*	*Std. Deviation*
People were displaced due to zoning of some areas	3.45	1.46
Oil companies communicate with my community members during seismic survey activities	3.18	1.36
There is site clearance including the surrounding areas of communities	3.45	1.35
Community make use of any external assistance (e.g. consultants) in relating with the oil companies	3.29	1.40
The government conducts surveying of the land	3.37	1.38
There is exploration activity taking place	3.25	1.38
The government conducts mapping of the area	3.40	1.28
Government conducts land acquisition, construction and drilling for oil and gas	3.24	1.37
Average Mean	**3.33**	**1.378**

Source: ***Primary Data, 2024***

According to the data in the table above, the government maps the area with a mean standard deviation of 3.40, 1.28, mean 3.45 shows that the property, as well as the neighborhoods around Buliisa District villages, is clear. 3.45 percent of respondents stated that certain areas' zoning caused people to be relocated. The average mean of 3.33 found during the activity search shows that moderately occurring activities in Buliisa have an effect on the surrounding area.

4.3 The effect of the oil and gas exploration activities on land ownership in Bulisa District.

This section analyses, interprets, presents and discusses findings on the second objective: the effect of the oil and gas exploration activities on land ownership in Bulisa District.

Table 5: Descriptive statistics showing the effect of the oil and gas exploration activities on land ownership in Bulisa District

Category	*Mean*	*Std. Deviation*
There was destruction during road building	3.47	1.28
Roads were constructed in free settlement areas	3.39	1.42
There was displacement as a result of exploratory drilling activities	3.22	1.44
There was compensations made to communities during road building	3.22	1.41
There was land grabbing after compensation was announced	3.41	1.37
Heavy clearing of people's properties was made	3.22	1.38
Destroyed property was satisfactory paid to the communities affected	3.41	1.35
Community members were given casual jobs during vegetation clearing	3.34	1.33
Average	**3.33**	**1.379**

Source: ***Primary Data, 2024***

According to the findings, the majority of respondents moderately agreed that roads are built in areas designated for free settlement (mean rate of 3.39); results also show that land grabbing occurs after compensation is announced (mean 3.41); community members agreed that destroyed property was satisfactorily paid to the affected communities (mean 3.41); and results also reveal that community members were assigned temporary jobs during vegetation clearing (mean 3.34). This indicates that a large portion of the land ownership oil and gas exploration activities had a moderate impact, with positive responses averaging 3.33 and standard 1.37.

This is in line with Cordaid (2016) identifies these as establishment of health care facilities, improved health awareness as well as capacity of health care workers as health-related positive impacts; increased access to services including schools, water and sanitation, as community based positive impacts and direct employment for community members and indirect employment due to economic growth and contracting business opportunities.

According to Vokes (2012), due to different businesses, which open in the areas of oil and gas, the populations tend to increase through migration from one place to another and therefore people get enough market for their products especially fish, crop and animal products, charcoal and firewood.

4.4 The various ways of mitigating the factors associated with effect of oil and gas activities on land ownership in Bulisa District.

This section analyses, presents and interprets and discusses the findings for the third objective of the study: To establish the ways of mitigating the factors associated with effect of oil and gas activities on land ownership in Bulisa District

Table 6: Descriptive statistics showing the ways of mitigating the factors associated with effect of oil and gas activities on land ownership in Bulisa District.

Category	*Mean*	*Std. Deviation*
There is an active and transparent communication and collaboration between stakeholders	3.43	1.47
The government has isolate and protected areas for communities to use	3.41	1.48
The project coordinators and stakeholders have created angling of about 500m	3.40	1.49
There is implementation of legal laws concerning the land ownership	3.44	1.46
Average Mean	**3.42**	**1.48**

Source: *Primary Data, 2024*

According to the above table, the sources of the respondents were involved in both pre- and post-establishing oil and gas operations on land ownership. The government has set aside and safeguarded spaces for community usage, according to the mean 3.41. Stakeholders collaborate and communicate openly and actively, with a mean score of 3.43. Project coordinators and partners have produced an approximately 500-meter angling with a mean of 3.40.

These fostered creations of employment and business opportunities, increased access to housing and healthcare facilities are for example possible when communities and local leaders work together through consultations and partnerships with government and extraction companies. This clearly shows the ways of mitigating the factors associated with effect of oil and gas activities on land ownership. The study found out those mitigating factors moderately with mean 3.42 Std. 1.48effect of oil and gas activities on land ownership.

This is in lines with Cordaid, (2016) where he mentioned that the Government should therefore have relevant laws and regulations governing mineral exploration but also ensure compliance by the companied involved benefiting the community in terms of land ownership.

CHAPTER FIVE

DISCUSSION OF RESULTS

5.0 Introduction

This chapter presents the discussion of the findings obtained from the study, the inclusions that were drawn based on results recommendations that were made based on the findings and conclusions

5.1 Discussion

This section presents the discussion of the findings that were obtained from the study; the discussion was based on the findings obtained from the questionnaire and interviews. It followed respective hypotheses as presented below.

5.1.1 The exploration activities taking place in Bulisa District

Findings show that moderate activities in Buliisa have an effect on land ownership, with an average mean of 3.33. These results differ slightly from those of Omorede (2014), who observed that the main activities related to oil and gas exploration are seismic data collection, exploratory well drilling, and surveying. The results regarding the oil exploration activities occurring in the study area, however, differ from those of Sylvia (2021), who discovered that 70.4% of the activities related to oil and gas exploration in Butiaba Sub County involved surveying, 43.4% involved site clearance, and 40.4% involved oil and gas companies engaging in seismic probing.

Results are also in line with (Byakagaba, 2019) who stated that activities related to exploration include site preparation, clearing a large area the size of a soccer field for an oil rig.

Although in agreement in as far as surveying is concerned, the findings above diverge a bit from the observation by Ukoli (2005) who noted that the major oil and gas exploration activities involve surveying, exploratory well drilling and seismic data acquisition.

5.1.2 The effect of the oil and gas exploration activities on land ownership in Bulisa District

The study also discovered that land ownership had a moderate impact on oil and gas exploration operations, with positive responses having an average mean of 3.33 and a standard deviation of 1.37. The aforementioned results are consistent with the findings of the Buliisas District Local Government report (2012), which stated that the primary source of land ownership in Buliisa District was agriculture, with over 45% of the population relying on subsistence farming. It also states that the remaining population was dependent on agriculture (20%), trade and commerce (10%), raising livestock (15%), and formal employment (6%) as well as traditional cash crops like cotton and tobacco, as well as food crops like cassava, Irish potatoes, sweet potatoes, maize, beans, and groundnuts. The study was in line with (Cordaid, 2016) notes that land and water are among the most important resources for communities, which don't only provide a place to live, but for many communities, they are also directly related to their culture and identity.

The results also support those published by Vokes (2012), who reported that as a result of various businesses opening up in the oil and gas industry, immigration tends to increase population sizes, expanding the market for goods like firewood, charcoal, fish, and crop and animal products. Communities were compensated during the construction of roads with a mean of 3.22. The results also corroborate those of Dowokpor (2015), who discovered that oil corporations' CSR initiatives—which included building infrastructure and funding community development initiatives—benefited Ghanaian fishing villages.

5.1.3 The various ways of mitigating the factors associated with effect of oil and gas activities on land ownership in Bulisa District.

The study found out those mitigating factors moderately with mean 3.42 Std. 1.48effect of oil and gas activities on land ownership. The laws and regulations put in place should be those related to environmental and social protection. The legal framework should provide for the necessity of all companies to carry out environmental and social impact assessment to identify potential negative impacts of the projects and take necessary measures to mitigate such impacts.

The study also found out that there is implementation of legal laws concerning the land ownership with mean 3.44. This is in line with (National Oil and Gas Policy for Uganda, 2008;

National Environment Management Act, 2005) which advocates that the laws governing mineral development in Uganda too require companies to undertake necessary precautions to identify potential negative impacts and mitigation measures.

The major roles of mitigation have been placed in the hands of oil and gas companies and yet these tend to be more profit driven. From this study, is evident that the government has distanced its self from the major roles despite its key position in the sector.

5.2 Conclusion

The study looked at how land ownership in Uganda's Bulisa District was affected by oil and gas development activity. The following goals served as a guide: to identify the exploration activities that are underway, to determine how land ownership is affected by oil and gas exploration activities, and to determine the different approaches that can be taken to mitigate the factors related to the impact of these activities on land ownership. According to the study's findings, the district of Buliisa's oil and gas exploration mostly suggests that the area's relatively intense operations have an effect on land ownership.

The study also comes to the conclusion that there was a modestly beneficial impact on land ownership from oil and gas exploration activities. The government and businesses engaged in oil and gas exploration play a less active role in reducing the detrimental impacts of these operations on land ownership. The results of this study will serve as a resource for a number of state and commercial organizations operating in Uganda when they review laws and policies pertaining to the oil and gas industry prior to the start of production in order to prevent unfavorable effects on land ownership. However, those mitigating factors only slightly affect how much land is owned by people who engage in oil and gas enterprises.

5.3 Recommendations

The study looked at jobs in the oil and gas industry, wherein locals should have priority over foreigners in order to increase community involvement and foster an understanding of the new industry.

The report suggests community sensitization, environmental management, and appropriate

mitigating measures to preserve the primary land ownership forms for those who relocate. It also suggests compensating the impacted community members.

The industry must make sure that the government's declared goals for wealth creation are met by the Ugandan oil and gas sector in order to strengthen community members' land ownership, preserve it, and give citizens a suitable framework for engagement. To accomplish the objectives of sustainable development, all mitigating measures must be implemented in concert with one another using an integrated resources management strategy.

The assessment of how oil and gas development affects land ownership, which is where people make their living, should be the main focus of future research.

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APPENDICES: APPENDIX I

APPENDIX II: QUESTIONNAIRE

Dear respondent,

I am Kule Godwin, a student of Uganda Christian University currently carrying out a study purposefully to complete a research topic on effects of Oil and gas Exploration activities on landownership in Uganda: A Case Study of Buliisa District Western Uganda." I am humbly requesting you to take some of your time to fill this questionnaire. The responses will be treated with utmost confidentiality and purposely used for academic purpose only. Thank you in advance.

PART A: RESPONDENT'S BACKGROUND INFORMATIONS

1. Gender of the respondent

Male [ ]

Female [ ]

3. Indicate your Age group

25 years or less [ ]

26-35 years [ ]

36-45 years [ ]

46-55 years [ ]

With 55 years and above [ ]

4. Education Level

Diploma [ ]

Degree [ ]

Postgraduate Degree [ ]

Masters [ ]

PhD [ ]

5. How many years have you worked in oil and gas industry?

2 – 4 years [ ]

5 - 7 years [ ]

8 - 10 years [ ]

11 and above [ ]

PART B: THE EXPLORATION ACTIVITIES TAKING PLACE IN BULISA DISTRICT.

Please tick in the appropriate space [√] provided, for each statement clearly indicating your level of satisfaction by using the 5-point Likert scale below

1-Strongly agree, 2-Agree, 3-Not Sure, 4-Disgree and 5-Strongly disagree

.

	Description	**Response**				
		Strongly agree	Agree	Not sure	Disagree	Strongly disagree
1	People were displaced due to zoning of some areas					
2	Oil companies communicate with my community members during seismic survey activities					
3	Members of community participate in data collection					
4	Community make use of any external assistance (e.g. consultants) in relating with the oil companies					
5	Buliisa district is chosen as an oil producing community					
6	Communities relate with oil exploration companies					
7	Land is owned individually					
8	There was destruction of property during surveying					

PART C: THE EFFECT OF THE OIL AND GAS EXPLORATION ACTIVITIES ON LAND OWNERSHIP IN BULISA DISTRICT

	Description	**Response**				
		Strongly agree	Agree	Not sure	Disagree	Strongly disagree
1	There was destruction during road building					
5	Roads were constructed in free settlement areas					
2	There was displacement as a result of exploratory drilling activities					
4	There was compensations made to communities during road building					
3	There was land grabbing after compensation was announced					
6	Heavy clearing of people's properties was made					
7	Destroyed property was satisfactory paid to the communities affected					
8	Community members were given casual jobs during vegetation clearing					

PART D: THE VARIOUS WAYS OF MITIGATING THE FACTORS ASSOCIATED WITH EFFECT OF OIL AND GAS ACTIVITIES ON LAND OWNERSHIP

	Description	**Response**				
		Strongly agree	Agree	Not sure	Disagree	Strongly disagree
1	There is an active and transparent communication and collaboration between stakeholders					
2	The government has isolate and protected areas for communities to use					
3	The project coordinators and stakeholders have created angling of about 500m					
4	There is implementation of legal laws concerning the land ownership					

APPENDIX III

INTERVIEW GUIDE FOR KEY RESPONDENTS

What are the exploration activities taking place in Buliisa district?

- How have the exploratory well drilling activities contributed to land use in Buliisa district?
- How has building of roads contributed to land use in Buliisa district in Albertine region?
- What is the effect of the oil and gas exploration activities on land ownership in Buliisa district?
- What has been done on the local people who have been displacement?
- What response has the government of Uganda had on associated with effect of oil and gas activities on land ownership?
- What are the various ways of mitigating the factors associated with effect of oil and gas activities on land ownership?

Thank you for your participation