

# MASTER'S THESIS

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**OIL AND GAS DEVELOPMENT IN KENYA AND ETHIOPIA:  
PATH DEPENDENCIES OR NEW OPPORTUNITIES?**

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## **PREFACE**

This master thesis concludes two years of education in Nord University in Norway and partnership with MGIMO University in Russia, where our team had the opportunity to learn from high-level industry and science professionals from around the world. Our team has gained extensive knowledge and new insights into the oil and gas industry. Since this highly contentious industry has a significant impact on the global economy, it was especially crucial to gain new knowledge from the industry professionals.

Our profound gratitude extends to our esteemed supervisor, PhD Andrey Mineev, whose invaluable contributions have played a pivotal role in shaping the trajectory of this research. We are sincerely appreciative of the time, effort, and expertise he generously shared, ensuring the success and depth of our exploration into the intricate realms of diversification and integration in project management within the oil and gas sector.

Furthermore, we express our gratitude to NORD University for providing us with the platform and resources to undertake this research paper in the form of a master thesis. The opportunity to delve into the complexities of the oil and gas sector under the auspices of NORD University has been both enriching and transformative. We acknowledge the role of the university in cultivating an environment that encourages scholarly exploration and contributes to the academic and professional growth of its students.

## **ABSTRACT**

Within the evolving landscape of oil and gas development in Kenya and Ethiopia, the existing path dependencies deeply rooted in historical, political, and economic contexts serve as influential factors shaping the trajectory of these nations' energy sectors. The challenge lies in reconciling these existing path dependencies with the imperative for embracing new opportunities. The traditional approaches and historical trajectories that have governed the development of these countries' oil and gas sectors might resist immediate transformation. This resistance could stem from institutional inertia, established practices, or socio-political considerations. However, the ability to identify and challenge these path dependencies may lead to finding new opportunities.

The ability to seize new opportunities hinges on adaptive governance, progressive policy frameworks, and collaborative efforts between governments, industry stakeholders, and the broader community. By fostering a culture of innovation and sustainability, Kenya and Ethiopia can redefine their energy landscapes, breaking away from historical constraints and embracing a future that aligns with global shifts towards renewable and sustainable energy solutions.

This master's thesis investigates the nuanced dynamics of oil and gas sector development in contemporary Africa, focusing on the intricate balance between diversification and integration within Kenya and Ethiopia specific regional contexts.

Employing a robust framework, our research scrutinises the social, environmental, and geopolitical implications inherent in the reliance on oil and gas resources within Ethiopia and Kenya. By doing so, we seek to contribute to a deeper understanding of how these nations navigate the inherent tensions between diversifying their economies and the imperative to integrate into the global energy market. This investigation is particularly pertinent in the face of evolving global energy dynamics and the imperative for sustainable development.

Furthermore, this critical examination of oil and gas sector development in contemporary Africa extends beyond theoretical exploration. It delves into the practical challenges and opportunities arising from the exploitation of hydrocarbon resources in the region. The study casts light on the socio-economic implications for African nations, emphasising the need for informed decision-making to ensure that development is not only economically viable but also socially and environmentally sustainable. By unravelling the trade-offs faced by governments and industry stakeholders, we aspire to provide insights that can guide the pursuit of a balanced and sustainable development path in the East African

context. shedding light on whether historical path dependencies will persist or potential opportunities will shape the trajectory of oil and gas development in Ethiopia and Kenya.

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## **GLOSSARY OF CONCEPTS**

**Diversification:** a strategic approach that involves expanding a company's business activities and delegating tasks to other partners.

**Integration:** the process of coordination and consolidation of various activities within an organization to improve efficiency and effectiveness

**Project management:** an act of planning, organizing, and managing a project in order to achieve a predefined goal or outcome.

**Supermajors:** multinational oil and gas corporations with significant resources and a global presence.

**Supply value-chain:** a process in which a company adds value to its raw materials to produce products eventually sold to consumers.

**Innovation:** the practical implementation of ideas that result in the introduction of new goods or services or improvement in offering goods or services.

**Sustainable development:** a holistic approach that seeks to meet present needs without compromising the ability of future generations to meet their own needs, including balancing economic growth, social equity, and environmental protection.

## 1. INTRODUCTION

**The relevance of the chosen topic.** The examination of diversification and integration within project management is notably pertinent and holds substantial promise in the constantly changing dynamics of the oil and gas sector. This study places itself at the forefront of tackling these issues by delving into crucial issues that will affect this industry's future.

Diversification is a strategic approach that involves expanding a company's business activities and delegating tasks to other partners (Ford, 1998). The goal of diversification is to reduce risks associated with over-reliance on a single industry or market. By diversifying their operations, companies can mitigate the impact of market fluctuations, regulatory changes, and other external factors that may affect their primary business (Brown, 2003).

Integration focuses on the coordination and consolidation of various activities within an organisation to improve efficiency and effectiveness (Ford, 1998). It involves seamlessly integrating different functions, departments, and teams to achieve a unified approach towards project execution. Integration ensures that various project components are well-aligned and work together harmoniously to achieve project objectives.

Effective project management depends on project design, which is influenced by a variety of factors. These factors interact considerably, ranging from resource availability, technological development, and geopolitics to market dynamics and strict environmental restrictions. For projects in the oil and gas industry to be successful, it is crucial to comprehend these impacts.

Is it possible to combine differentiation and integration within one project or one company? The strategy of a company will outline the possible perspectives depending on the preferred development dynamics. The differentiation process within the oil and gas project or a company is one of the integrative capabilities tools that the firm adapts in order to solve the key challenges (Garcia et al., 2014).

How to produce oil and gas in the age of decarbonization is a crucial subject that looms large. It is clear that the industry needs to diversify and be able to nurture a sustainable development within the oil and gas sector, implementing cleaner technology like carbon capture and storage to reduce carbon emissions. This industry-wide shift towards sustainability is not only an issue of corporate responsibility; it is also necessary for survival.

Furthermore, it is impossible to overestimate the importance of a national interest in ventures involving international investors. Especially for Africa, the prosperity of the new oil

African producers and oil and gas companies is one of the keys in avoiding the “resource curse” and representation of a national interest (Hickey and Morgan, 2021). Additionally, African countries protect their interests by engaging in smart negotiations, promoting technological transfer, and enforcing local content standards. These actions promote economic growth and progress while simultaneously defending sovereignty, benefiting all parties involved.

Africa is a unique location that represents a rich resource country that has its position in the global oil and gas business. It plays a crucial role in discussions about diversification, integration, and decarbonization in the context of project management in this industry due to its expanding markets, reservoir capacity, and unique challenges (Smith, 2010). For stakeholders, including those at the local and international levels, a thorough understanding of how these principles emerge in African projects has the potential to provide essential insights.

This research is concerned with issues related to finding a balance between diversification and integration. To what extent is it possible in the context of African Oil and Gas? Optimising is required to reach this balance. To reach this equilibrium, it is necessary to diversify investments and markets while also improving procedures and guaranteeing effective supply chains. This tactical approach reduces the dangers of relying too heavily on one industry or area.

**The main goal of the work** is to explore opportunities and challenges for management of oil and gas projects in contemporary Africa, based on two cases - The South Lokichar in Kenya and The Hilala in Ethiopia.

**Problem statement** is how to balance between diversification and integration in petroleum projects with a view of securing national interests, achieving sustainability and overcoming path dependencies?

The theoretical perspective underpinning the identified problem statement revolves around the intricate challenge of striking a balance between diversification and integration within the context of petroleum projects. The core issue at hand is multifaceted, encompassing the imperative of securing national interests, achieving sustainability, and overcoming path dependencies. From a theoretical standpoint, this problem statement delves into the complexities of decision-making in the petroleum sector, considering the divergent goals of diversification for resilience and integration for global competitiveness. It engages with the discourse on how nations can navigate this delicate equilibrium, ensuring that economic diversification initiatives align with long-term sustainability objectives while addressing historical path dependencies that might influence decision trajectories. The



theoretical lens applied to this problem statement involves examining governance models, policy frameworks, and strategic approaches that can harmonise the seemingly conflicting imperatives of diversification and integration in petroleum projects, fostering a holistic understanding of the challenges and opportunities inherent in this intricate balancing act.

### **Research questions**

1. What are available state positions to organise a petroleum project in terms of legal structure and supply chain?
2. How is project design influenced by path dependencies?
3. What are the consequences for social, environmental and economic sustainability of a particular project design?

**The thesis** consists of six chapters and a list of references and sources. The first chapter is an Introduction. The next chapter is Frame of reference, followed by Research design and Method. The fourth chapter, Findings, deals with the overview of the oil and gas industry in Ethiopia and Kenya and oil and gas project management practice in these countries. In Analysis, chapter 5, we map our theoretical framework to practical data, and provide an answer to the research questions. The sixth chapter is Conclusion.

## **2. FRAME OF REFERENCE**

### **Introduction to the chapter**

In the oil and gas sector, finding the right balance between integration and diversification is crucial for managing the inherent complexities and uncertainties associated with exploration, production, refining, and distribution activities. Companies need to optimise their operations, enhance risk management strategies, and create value for stakeholders (Muazu & Rosmaini, 2017).

Diversification allows oil and gas companies to reduce their vulnerability to market volatility by expanding into related or unrelated industries. It helps mitigate risks associated with fluctuating oil prices, political instability in certain regions, and changing regulations. By diversifying, companies can maintain a more stable revenue stream and reduce their dependence on a single market (Johnson & Brown, 2015).

Integration plays a vital role in streamlining operations within the oil and gas sector. It enables efficient coordination between different project components, such as exploration, production, refining, and distribution. By integrating these activities, companies can optimise their resources, enhance communication and collaboration, and achieve better project outcomes.

Finding the optimal balance between integration and diversification requires careful consideration of specific market conditions, regulatory frameworks, and company capabilities. Companies must assess the potential benefits and risks associated with each strategy and determine the most suitable approach based on their objectives and competitive landscape.

### **2.1. Integration and Diversification in the oil and gas sector**

#### **2.1.1. Legal regimes and state options**

The legal regime and the role of the state and foreign entities play a crucial role in determining the level of diversification and integration in the oil and gas sector. In some countries, the state exercises significant control over the industry, while in others, foreign companies are allowed to operate more freely. The degree of government regulations, ownership restrictions, and licensing policies affect the level of participation of foreign companies in exploration, production, and other activities.

For example, in countries with nationalised oil and gas sectors, such as Saudi Arabia or Venezuela, the state retains substantial control over the industry. Foreign companies may be required to form joint ventures with local entities or obtain specific licences to operate. On the other hand, countries with more liberalised markets, like the United States or Norway, have a higher degree of integration with foreign companies. In these cases, international firms can participate in various aspects of the supply chain, from exploration to refining and distribution (Dragoon, 2010). In short, developed countries do not use the system of PSA, while for the developing ones, such as African countries, it might be a useful tool.

Numerous studies have delved into the intricate interplay between state and foreign parties in oil and gas projects, providing valuable insights into the dynamics, challenges, and opportunities associated with the collaboration between international companies and host governments in the development of hydrocarbon resources.

The existing studies highlight that the interaction between state and foreign parties is shaped by a multitude of factors, including legal frameworks, political dynamics, economic considerations, and socio-cultural aspects. These studies emphasise the significance of comprehending power dynamics, contractual arrangements, and stakeholder interests as they influence the outcomes of oil and gas projects (Victor et al., 2011).

Researchers have also explored the roles and responsibilities of each involved party, shedding light on the complexities faced when balancing national interests, revenue sharing, environmental concerns, and technological transfer. The findings from these studies contribute to a better understanding of the nuances within state-foreign party interactions and aid in the development of effective strategies for successful project implementation (Victor et al., 2011).

### **2.1.2. Types of companies involved**

“The oil and gas sector consists of diverse players, including supermajors (large multinational corporations), national oil companies (state-owned entities), and independent operators (smaller, privately owned companies)” (Smith & Johnson, 2012; Wilson, 2016).

Supermajors are large multinational corporations with significant resources and a global presence. They often pursue diversification across multiple geographies and energy sectors (Smith & Johnson, 2012). For example, ExxonMobil and Shell have expanded their operations beyond traditional oil and gas by venturing into renewable energy, petrochemicals, and liquefied natural gas (LNG) (industry reports, news articles).

ExxonMobil, one of the industry's largest supermajors, has diversified its operations by investing in biofuels derived from non-food sources like algae. The company is also involved in research and development of carbon capture and storage (CCS) technologies to reduce greenhouse gas emissions (Pickl, 2019).

National Oil Companies (NOCs) are state-owned entities that focus on maximising the value of domestic resources (Brown & Wilson, 2017). They often pursue diversification through downstream activities such as refining and distribution to capture a larger share of the value chain (industry reports, academic research).

Saudi Aramco, the state-owned oil company of Saudi Arabia, has diversified its operations downstream. It operates one of the world's largest oil refining and petrochemical complexes, allowing it to process crude oil into refined products and chemicals for domestic consumption and export (Jaffe & Elass, 2007).

Independent operators are smaller, privately-owned companies that typically operate in niche markets or specialised segments. They may adopt diversification strategies to expand their reach or mitigate risks (Smith & Johnson, 2012).

Chesapeake Energy, a US-based independent operator, pursued diversification by focusing on the exploration and development of unconventional resources, specifically shale gas. The company acquired assets in shale formations such as the Marcellus Shale and Utica Shale, capitalising on the growing demand for natural gas (Golden & Wiseman, 2014).

By considering these different company types and their approaches to diversification and integration it becomes evident that strategies vary based on specific capabilities, market conditions, and objectives. Understanding the experiences and outcomes of supermajors, national oil companies, and independent operators can provide valuable insights for decision-making in the oil and gas sector.

### **2.1.3. Supply-Value Chains**

Diversification and integration in the oil and gas sector can also be observed through the lens of the supply-value chain. The sector relies on a complex network of contractors and subcontractors who provide specialised services at different stages of the project lifecycle. This includes seismic surveys, drilling operations, engineering, construction, maintenance, and logistics (Lisitsa et al., 2018).

Companies involved in the oil and gas supply-value chain can range from multinational corporations to smaller local firms. Diversification can be observed by the broad range of

services offered, such as reservoir analysis, well testing, pipeline construction, and offshore platform installation. Integration occurs when multiple contractors collaborate closely to deliver comprehensive solutions for oil and gas projects.

Moreover, technological advancements have facilitated greater integration within the supply-value chain. Digitalization, automation, and data analytics have enabled closer coordination between contractors and improved project management efficiencies (Liu & Chiu, 2021). This integration allows for seamless communication, faster decision-making, and optimised resource allocation, leading to cost savings and improved project outcomes.

Integration and diversification in a supply chain are intricately linked, each influencing the other in a dynamic relationship. When a supply chain is diversified, meaning it involves various sources, suppliers, and processes, integration becomes crucial for seamless coordination. Integration in this context refers to the close alignment and coordination of different elements within the supply chain. This ensures efficient communication, streamlined processes, and a synchronised flow of goods or services. In a diversified supply chain, integration helps manage complexities, reduce risks, and enhance overall operational efficiency.

Conversely, when a supply chain is highly integrated, there may still be room for strategic diversification. While total integration aims for a unified and streamlined process, introducing elements of diversification can provide resilience and risk mitigation. Diversification in an integrated supply chain might involve having alternative suppliers, multiple distribution channels, or a variety of products or services. This strategic diversification can act as a buffer, safeguarding the supply chain against disruptions, whether they are caused by market fluctuations, geopolitical issues, or unforeseen events.

In essence, diversification and integration are not mutually exclusive; they often coexist in a balanced supply chain strategy. Achieving the right blend is key to building a resilient and responsive supply chain that can adapt to changes and challenges while maintaining efficiency and reliability.

#### **2.1.4 Diversification and integration practices in various countries**

Below is a comparative table summarising the main research findings in the American, Norwegian, Iranian, and African contexts. The table provides an overview of the complexities of the interaction between the state and foreign companies in oil and gas projects under these four models, highlighting key differences and common themes.

**Table 1. Main research findings in the American, Norwegian, Iranian, and African models**

Aspect	American Model	Norwegian Model	Iranian Model	African Model
Legal Framework	Private sector-driven projects under clear regulatory frameworks.	Strong state regulations and ownership through the Norwegian Petroleum Fund.	Government controlled with limited private sector involvement.	Mixed regulatory landscapes, influenced by historical colonial legacies.
Political Dynamics	Influenced by domestic politics and geopolitical interests, leading to policy shifts.	Stable political climate	Subject to international sanctions and geopolitical tensions	Political instability.
Socio-Cultural Aspects	Varies by region, with local communities sometimes opposing oil and gas projects.	Strong emphasis on environmental and social responsibility in project development.	Local workforce and cultural factors can impact project success.	Local communities' involvement and cultural factors can affect project acceptance.
Contractual Arrangements	Diverse range of contracts, with Production Sharing Agreements (PSAs) being common.	Extensive use of Production Licenses and State Direct Financial Interest (SDFI) system.	Typically, buyback contracts are prevalent, granting control to the Iranian government.	Range of contracts used, often influenced by investor preferences and government policies.
Supply value chain	Foreigners allowed, integration.	Foreigners allowed and controlled, integration.	Foreigners not allowed, diversification.	Foreigners allowed, integration.
Environmental Concerns	Varies by project and region, with some facing significant environmental challenges.	Strong emphasis on environmental stewardship and technological innovation.	Environmental considerations are sometimes secondary to revenue generation.	Environmental concerns can be prominent, depending on regulatory enforcement.
Technological Transfer	Emphasis on technology transfer to local companies and workforce development.	Extensive technology sharing and expertise building through partnerships.	Limited technology transfer, often due to sanctions and government control.	Technology transfer efforts vary, with some countries prioritizing local capacity building.

Diversification and integration strategies in the oil and gas sector also vary depending on the geographical context and prevailing regulatory frameworks.

The Norwegian model is characterised by a high degree of state control and integration. Norway's state-owned oil company, Equinor, has successfully diversified its portfolio by venturing into offshore wind energy projects alongside its oil and gas activities (Clark, 2014). This diversification has allowed Norway to capitalise on its offshore expertise and renewable

energy potential. Integration within the Norwegian model involves close collaboration between industry stakeholders, government agencies, and research institutions to drive innovation, environmental stewardship, and sustainable development (Lahn, 2019).

In contrast, the American model emphasises private ownership and a competitive market. In the United States, companies often pursue diversification through acquisitions, strategic partnerships, or technological advancements. Integration in the American model involves optimising operations, leveraging advanced technologies, and fostering collaboration between industry players and research institutions. This model encourages innovation and entrepreneurship, leading to the development of unconventional resources like shale gas and tight oil (Waterworth & Bradshaw, 2018).

Iran presents a unique case due to its geopolitical challenges and sanctions (Thompson, 2019). Diversification efforts in the Iranian oil and gas sector have been hindered by political and economic constraints. Nevertheless, the country has aimed to diversify its energy mix by exploring renewable energy sources such as solar and wind power. Integration in Iran involves navigating complex political dynamics and ensuring coordination between government agencies and industry players to optimise resource utilisation and mitigate risks (Kuhn, 2014).

Saudi Arabia and Venezuela: In Saudi Arabia and Venezuela, the approach taken is to create nationalised oil and gas sectors. There is foreign investment in these countries, but significant control is with the state. Saudi Arabia and Venezuela have the same policies, but the outcomes are different. While Saudi Arabia has managed to achieve a certain level of stability and control, Venezuela has faced political and economic turmoil. This has led to a decline in production due to lack of investment.

In conclusion, diversification and integration are crucial strategies in project management, particularly in the complex and dynamic oil and gas sector. Understanding how different company types and geographical contexts approach these strategies provides valuable insights into optimising operations, managing risks, and fostering sustainable development in the industry. By adopting tailored approaches to diversification and integration, companies can adapt to changing market dynamics, seize new opportunities, and achieve long-term success.

## **2.2 Africa's path dependencies and opportunities to overcome those**

### **2.2.1 Overview of the constraints**

In the context of post-colonial Africa, there is a body of literature discussing path-dependency constraints that can be observed. These constraints encompass several key aspects, including:

1. Post-colonial legacies: Scholars have examined how historical colonial practices and institutions continue to shape the trajectory of African countries. This includes the influence of colonial economic structures, governance systems, and social divisions, which may impact the development of oil and gas projects (Gareth, 2010).

2. Neo – colonial: Neocolonialism implies the persistence of colonial dynamics and influence even after formal decolonization. In the context of our research topic, neocolonial legacies can manifest themselves in different ways in different regions, including Africa: economic dependency, political interference, resource exploitation, continued inequality and limited technological transfer (Hu, Bao, Hu, 2013)

3. Corruption: Literature extensively discusses the issue of corruption in post-colonial Africa and its impact on resource governance. Corruption can create path dependencies by distorting decision-making processes, undermining transparency, and hindering effective management of oil and gas projects (Mlambo et al., 2023).

4. Ethnic conflicts: The literature explores how ethnic conflicts in post-colonial Africa, fueled by historical divisions or competition over resources, can create path dependencies that hamper the development of oil and gas projects (Osaghae, 2004). These conflicts may exacerbate governance challenges and hinder cooperation between state and foreign parties.

5. Resource dependence and poverty: There is a focus on the resource-dependent nature of many African countries' economies, where a heavy reliance on exporting commodities like oil and gas can perpetuate path dependencies. This dependence, coupled with internal poverty, poses challenges for achieving sustainable development and innovation within the sector (Bazilian et al., 2013)

In addition to constraints, there are opportunities for innovations in oil and gas projects in Africa. Some potential areas of innovation include:



1. Local content development: Promoting the participation of local businesses and workforce in oil and gas projects can spur economic growth, foster knowledge transfer, and contribute to technological advancements within the host country (Arthur, Arthur, 2014).

2. Sustainable practices: Embracing environmentally friendly and socially responsible approaches in oil and gas operations can lead to innovative solutions such as renewable energy integration, carbon capture and storage technologies, and community engagement programs (Schneider et al., 2013).

3. Technological advancements: The adoption of cutting-edge technologies, such as digitalization, automation, and data analytics, can optimise exploration, production, and distribution processes in the oil and gas sector, leading to improved efficiency and cost-effectiveness (Solomon, van Klyton, 2020).

Regarding the specific case countries, existing research provides insights into the interplay between path dependencies and innovations in oil and gas projects. By analysing these cases, researchers have identified various factors influencing the outcomes, including historical legacies, policy frameworks, institutional capacities, and socio-economic contexts. The findings indicate the complexity of navigating path-dependent constraints while exploring opportunities for innovation.

### **2.2.2 Path dependencies related to oil and gas**

The legal regimes governing oil and gas projects in African countries are influenced by post-colonial path dependencies, which have significant implications for the interplay between state and foreign parties involved in these projects (Cormier & Magnan, 2007). In the literature, there is evidence of various path-dependent factors such as a focus on agriculture, corruption, ethnic conflicts, and heavy reliance on resource exports in impoverished countries.

Post-colonial path dependencies in Africa have shaped the legal frameworks, contractual arrangements, and dispute resolution mechanisms governing oil and gas projects. These factors contribute to the overall dynamics of interactions between state and foreign parties in the region. It is important to consider these historical factors when analysing the present situation and potential opportunities for innovations.

One aspect worth exploring is the extent to which opportunities for innovations exist within the existing legal regimes in African countries. Despite the constraints posed by path dependencies, there might be room for creative solutions and novel approaches that can

address challenges and promote sustainable development in the oil and gas sector (Mustafayev, 2015). Exploring these opportunities could lead to improved outcomes and better alignment with global best practices.

To understand the possibilities for innovations, it is crucial to examine the existing knowledge about path dependencies and innovations in the case countries. Research and literature on this subject can shed light on the specific challenges faced by African countries, as well as successful strategies and lessons learned from past experiences. This knowledge can help identify potential areas for improvements and inform policy decisions aimed at fostering a conducive environment for investment and project execution (Raghupathi & Raghupathi, 2017).

In summary, the legal regimes and dynamics governing oil and gas projects in African countries are influenced by post-colonial path dependencies. While these constraints present challenges, opportunities for innovations may still exist. Analysing the existing literature on path dependencies and innovations in the case countries can provide valuable insights into addressing these challenges and promoting sustainable development in the region's oil and gas sector (Davis, 2012).

### **2.2.3 Cases of innovative development**

In the context of sustainable development and the diversification/ integration strategy for emerging petroleum industries, it is important to examine cases in Africa that demonstrate innovation and a move towards modernization in the oil and gas sector. Despite the challenges posed by path dependence and neo-colonial influences, Kenya and Ethiopia serve as interesting examples, highlighting the potential for African countries to overcome historical limitations and adopt innovative approaches.

One such case is Kenya, where the discovery of significant oil deposits in the Turkana region has created new opportunities for the country's oil and gas sector. The Kenyan government has taken proactive steps to create an investment-friendly climate, attract foreign direct investment, and establish a comprehensive legal and regulatory framework. Moreover, they have focused on promoting local content participation, job creation, and technology transfer to maximise the socio-economic benefits of oil and gas resources for the country's development (Johannes et al., 2015).

Similarly, Ethiopia, traditionally known for its agricultural sector, has made strides in the oil and gas industry. The country has actively explored its potential oil and gas resources,

particularly in the Ogaden Basin. To facilitate the development of the sector, the Ethiopian government has implemented robust regulatory frameworks, engaged in strategic partnerships with foreign companies, and invested in local capacity building. Furthermore, efforts have been made to integrate the oil and gas sector with other sectors, such as renewable energy, to foster a diversified and sustainable energy mix (Boshoff & Lamberts, 2011).

Studies conducted in Kenya and Ethiopia have examined the influence of historical trajectories on the development of their respective oil and gas sectors. These studies explore the challenges faced, lessons learned, and best practices adopted to overcome path dependence and foster innovation.

By studying these cases, policymakers, industry stakeholders, and researchers can gain valuable insights into the potential for African countries to leverage their oil and gas resources for sustainable development.

In conclusion, African countries face challenges arising from historical path dependence and neo-colonial influences in their oil and gas sectors. However, cases like Kenya and Ethiopia demonstrate the potential for innovation and modernization. Acknowledging the historical factors shaping their development, African countries can adopt strategies that promote local capacity building, technology transfer, and sustainable resource management. These efforts will contribute to overcoming path dependence and fostering innovation for the long-term benefit of their oil and gas sectors and overall socio-economic development.

#### **2.2.4 What are the main challenges and opportunities for Africa's oil and gas?**

The oil and gas sector in Africa encounters a range of challenges and opportunities that influence its course within the global energy landscape. A primary challenge stems from the unpredictability of worldwide oil prices, posing a significant threat to the revenue and economic stability of African oil-producing nations. Relying on oil exports exposes these countries to external market fluctuations, rendering them susceptible to economic downturns. Moreover, issues related to governance, corruption, and insufficient infrastructure can impede the effective extraction, production, and distribution of oil and gas resources, thereby restricting the sector's potential for growth.

Conversely, the oil and gas industry in Africa offers substantial opportunities for economic advancement and strategic positioning in the global energy arena. The continent possesses abundant untapped hydrocarbon resources, and ongoing technological progress suggests the potential for new discoveries and expanded reserves. Foreign direct investment

(FDI) in the sector, along with strategic collaborations, holds the promise of contributing to infrastructure development and the transfer of technological expertise. Additionally, the increasing global demand for energy provides African nations with the prospect of leveraging their resources to achieve economic diversification, generate employment, and foster sustainable development. Implementing initiatives that encourage local content participation and address environmental concerns can augment the long-term sustainability of the oil and gas industry in Africa (OPEC, 2021).

## **2.3. Sustainability**

### **2.3.1. What is sustainable development? Competing approaches.**

In terms of sustainable development, it is important to understand the concept itself. Sustainable development, a concept rooted in the pursuit of meeting current needs without compromising the ability of future generations to meet their own, has gained prominence globally. The United Nations' Sustainable Development Goals (SDGs) stand as a comprehensive framework, comprising 17 interconnected goals addressing social, economic, and environmental dimensions. These goals encompass issues ranging from poverty eradication and quality education to climate action and responsible consumption. The SDGs provide a universal blueprint, encouraging nations, businesses, and communities to work collectively towards a more sustainable and equitable world (United Nations, 2021).

In the business realm, the Triple Bottom Line (TBL) approach serves as a framework for sustainable development, emphasising three dimensions: economic, social, and environmental. Coined by John Elkington, TBL asserts that businesses should be accountable for not only financial performance (profit) but also for their impact on people (people) and the planet (planet). This holistic perspective requires companies to consider the social and environmental consequences of their operations while maintaining financial viability. By integrating TBL principles, organisations aim to achieve a balance that promotes long-term sustainability, ethical practices, and positive societal impact (Elkington, 1997).

Achieving sustainable development, as outlined by the SDGs and TBL, demands collaboration across sectors. Businesses, governments, and civil society must align their efforts to address the interconnected challenges of poverty, inequality, and environmental degradation. Through robust strategies, innovative solutions, and responsible practices, a harmonised approach can contribute to a more sustainable and resilient global future (United Nations, 2021; Elkington, 1997).

Sustainable development involves balancing economic growth, social equity, and environmental protection. There are critical perspectives on sustainability that argue it may be a term primarily rooted in Western ideologies and designed to protect its own privilege. These perspectives suggest that the concept of sustainability has been shaped by Western economic and political systems, which could limit its applicability in other contexts (Markulev, Long, 2013).

Diverging from individual-centric perspectives, alternative viewpoints to greater extent focused on societal well-being and environmental sustainability. China's philosophy on sustainability is perceived as an essential element for attaining both social stability and economic development, with an emphasis on long-term planning and the delicate balance between human needs and environmental preservation within distinct cultural and social contexts (Amster, Grdina, 2021). While the Soviet sustainable philosophy is shaped by historical perspectives, it places a strong emphasis on the collective good and societal coherence.

Additionally, eco-centric approaches challenge the anthropocentric focus of mainstream sustainability. They prioritise the intrinsic value of nature and advocate for non-human entities, such as ecosystems and species, to have inherent rights. Ecocentric perspectives argue that sustainability should not solely revolve around human needs but should also consider the well-being and flourishing of the entire ecological system (Washington et al., 2017).

These alternative perspectives offer different viewpoints on sustainability and present alternative paths to development that may diverge from Western notions. By considering these diverse perspectives, the understanding of sustainability can be broadened and explore more inclusive and context-specific approaches to address environmental and social challenges.

Ecocentric approaches are a set of perspectives on sustainability that differ from the mainstream Western understanding. These approaches prioritise the well-being and preservation of the natural environment above all else. Unlike anthropocentric approaches, which focus primarily on human needs and interests, ecocentric approaches recognize the intrinsic value of non-human species and ecosystems (Allen et al., 2019).

The origins of ecocentric approaches can be traced to various sources, including philosophical traditions influenced by China and Soviet philosophy. In these traditions, human society is seen as an integral part of nature rather than separate from it. The emphasis is placed on maintaining ecological balance and harmony with the natural world (Heikkurinen et al., 2016).

In the given context, ecocentric approaches offer an alternative viewpoint to the dominant Western notion of sustainability. They challenge the idea that sustainability is solely about preserving human privilege and highlight the importance of considering ecological integrity and the well-being of the entire ecosystem. By incorporating ecocentric perspectives into discussions on sustainability and development, a more holistic and inclusive approach can be achieved that takes into account the needs of both humans and the environment.

### **2.3.2. Sustainability pressures on oil and gas, including African context**

Governments and industries are adapting to the "energy shift" as more businesses and investors seek more assurance and clarity when assessing long-term climate threats and opportunities. a change in the global energy industry away from the production and use of energy based on fossil fuels and towards renewable energy sources. Moving forward, African countries, including Kenya and Ethiopia, are taking steps to assert greater control over their resources and promote sustainable development in the oil and gas sector. They are implementing reforms, policies, and regional cooperation initiatives to break free from the shackles of colonial and neo-colonial influences. These efforts prioritise local participation, technology transfer, and responsible resource management (Turner, 2018).

Assessing diversification and integration strategies for emerging petroleum industries requires considering various criteria. Sustainable development is a crucial criterion, encompassing the need to balance economic, social, and environmental factors. However, it's essential to critically examine Western notions of sustainability and explore alternative perspectives influenced by China, Soviet philosophy, or ecocentric approaches. By considering these diverse perspectives, African nations can chart a path towards sustainable development in their oil and gas sectors while asserting greater control over their resources.

### **2.3.3. Social, environmental, economic sustainability – challenges and opportunities for Africa**

In exploring the realm of social, environmental, and economic sustainability in Africa, a nuanced examination is required that navigates the space between conventional and alternative approaches. Traditional perspectives often offer established frameworks, policies, and practices, while alternative approaches introduce innovative, context-specific solutions that may challenge conventional wisdom. This dynamic interplay presents both challenges

and opportunities for the continent. Striking a balance between these approaches involves addressing entrenched issues within the mainstream discourse while embracing alternative strategies that consider Africa's unique socio-environmental contexts. This exploration of the middle ground between mainstream and alternative perspectives unveils a rich terrain of challenges and opportunities, offering the potential for tailored and sustainable solutions that can foster holistic development in the African context.

The historical influence of colonialism and neo-colonialism has significantly shaped the development of African countries, including their oil and gas sectors. During the colonial era, Kenya and Ethiopia, like many African nations, were primarily viewed as sources of natural resources for the colonial powers, with little emphasis on indigenous industrialization or capacity-building. This extractive model often resulted in the exploitation of resources without sufficient investment in infrastructure, technology transfer, or local skills development (Robinson, 2002).

Colonialism in Kenya refers to the period when it was under British rule from the late 19th century until 1963 when the country gained independence. The British colonial administration heavily relied on resource extraction, including agricultural products and minerals, for export to the colonial power. This led to significant social, economic, and political marginalisation of the indigenous population.

In contrast, Ethiopia's historical experience with colonialism differs. Known for its resistance against colonisation, Ethiopia managed to maintain its independence during the "Scramble for Africa" in the late 19th and early 20th centuries when much of the continent was colonised. However, Italy occupied Ethiopia from 1936 to 1941 during a period known as the Italian occupation. This occupation aimed to exploit Ethiopia's resources, including the exploration of oil and gas potential in the Ogaden region.

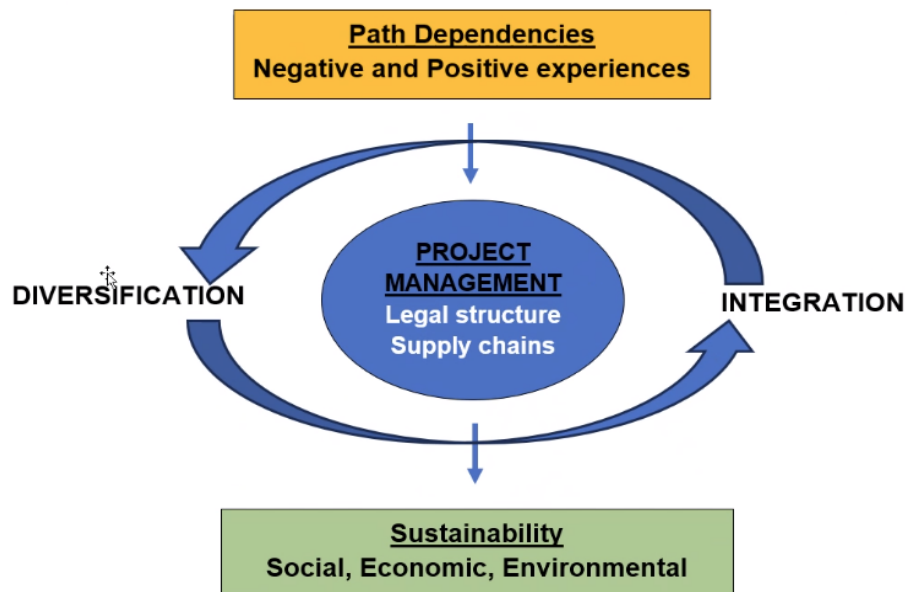
Post-colonial Kenya and Ethiopia continued to face challenges in breaking away from the path dependence established during the colonial period and overcoming the legacy of resource dependency. Neo-colonial influences have hindered their ability to fully leverage their natural resources for sustainable development (Green & Brown, 2016). Foreign control over key sectors, continued resource extraction by external actors, and unequal power dynamics have limited the autonomy and decision-making capabilities of both countries in managing their own resources (Miller, 2005).

## 2.4. Summary of the chapter and analytical framework

The theoretical chapter delves into critical aspects of diversification and integration within the oil and gas sector. It encompasses multiple dimensions, including legal regimes, the role of state and foreign entities, supplier-value chain dynamics, and country-specific models. Additionally, it scrutinises the interaction between states and foreign parties in oil and gas projects, addressing path dependency limitations in Africa's post-colonial context. The chapter explores the dynamics of legal regimes and their evolution, examining the enduring impact of colonialism, neo-colonialism, and the pursuit of sustainable development. Moreover, it investigates modernity and innovation cases within the African context.

Addressing the challenges associated with Project D/I (Diversification and Integration), Path Dependency, and Sustainability in the oil and gas sector requires a multifaceted approach. The interconnection is explained in the figure below.

**Figure 1. Theoretical framework of the research**



Source: made by the authors

### Research questions

1. What are available state positions to organise a petroleum project in terms of legal structure and supply chain?
2. How is project design influenced by path dependencies?



3. What are the consequences for social, environmental and economic sustainability of a particular project design?

### **1. Project Diversification and Integration (Project D/I):**

It might be difficult to strike a balance between integration in the oil and gas industry and diversification into cleaner energy sources.

**Strategic Planning as a Fix** Create a thorough diversification strategy that complements the oil and gas sector's fundamental skills. This could entail making investments in renewable energy projects like solar or wind and adding them to the current portfolio.

Invest in research and development to find cutting-edge methods and technology that can cut carbon emissions from conventional oil and gas operations. Technology for carbon capture and storage (CCS) may be a part of this.

**Supply Chain Optimization:** Make the supply chain more environmentally friendly by incorporating cleaner energy sources. Examine the possibilities for purchasing goods and services from environmentally responsible vendors.

**Government Incentives:** Collaborate with government agencies to leverage incentives and subsidies for clean energy projects. This can help offset the initial costs of diversification.

### **2. Path Dependency:**

**Problem:** Historical route dependencies frequently place restrictions on the oil and gas sector, impeding innovation and adaptation.

**Reforming public policy** Promote regulatory changes that support industry innovation and flexibility. Encourage governments to examine and update obsolete laws and regulations that might be impeding development.

**Investment in Innovation:** Provide funding for projects in research and development that strive to sever ties to established paths. Investigate cutting-edge business concepts and technology that can upend conventional wisdom.

**Collaboration across industries:** Encourage cooperation with other sectors, such as technology and renewable energy, to bring in new viewpoints and concepts. Cross-industry collaborations can aid in overcoming long-standing path dependencies (Fox & Faver, 1984).

Create an environment where learning and adaptation are valued inside the organisation. Encourage staff members to recognize and question path-dependent practices.

### **3. Sustainability:**

Because of the negative effects on the environment and society, achieving sustainability in the oil and gas industry is a serious challenge.

**Solution: Environmental Stewardship:** Invest in environmentally beneficial practices and technologies, such as lower emissions, more effective energy use, and less trash production.

Engage with neighbourhood communities to ensure social responsibility. Engage in sustainable business practices and community development projects.

Provide transparent reporting on the effects on the environment and society. Observe global sustainability standards and interact with stakeholders to get their opinion.

Expand investments in renewable energy sources to lessen your dependency on fossil fuels and to protect the environment.

**Regulatory Compliance:** Comply with stringent environmental standards and, when possible, take proactive steps to go above and beyond compliance..

Investigate the tenets of the circular economy, which minimizes waste and environmental effect by recycling and reusing resources.

Encourage economic diversification in areas that are heavily reliant on the oil and gas industry to maintain long-term viability.

Governments, communities, and business stakeholders must work cooperatively to address these issues. It demands dedication to innovation, concern for the environment, and flexibility in response to shifting global dynamics.

### 3. RESEARCH DESIGN AND METHOD

This study uses a mixed-methods approach to fully address the conflict between integration and diversification in project management within the oil and gas industry. We seek to offer a nuanced view of these tactics' influence on project outcomes by looking at the many ways in which they are applied.

As part of our study approach, we will compare and contrast integration and diversification tactics used by various company types and geographical regions in the oil and gas industry. Three primary types of oil and gas firms will be taken into consideration:

Analysing **Supermajors in the African market**: According to Smith and Johnson (2012), these multinational businesses frequently carry out both upstream and downstream activity. The research team will look into how supermajors strike a balance between integration and diversification in our research.

Analysing **National Companies in the African market**: We will examine the national oil companies' business strategies while keeping in mind Wilson (2016)'s emphasis on their significance to the sector. Investigating how these organisations manage integration and diversity in the context of their individual nations is part of this.

And analysing **Independent Operators in the African market**: To better understand how smaller, independent oil and gas businesses deal with the integration-diversification conundrum, this category will be looked at.

#### 3.1. Philosophical assumptions

**The importance** of the chosen methodology provides both advantages and disadvantages for researchers. Understanding these factors is essential to ensure the validity and reliability of research findings. On the other hand, the researcher's philosophy may have multiple prisms of understanding, but it also forms a complete picture.

Regarding research methodology, researchers adopt a realist philosophy. Realist means that the emphasis is on representing reality as it is and understanding the underlying systems and structures that shape the subject matter. By following this stance, the researchers hope to provide an accurate and objective review of development plans for new oil and gas projects in African countries.

**The philosophy of realism** in research represents a philosophical perspective known as realism, which emphasises an accurate portrayal of reality. It asserts that an objective and independent world exists despite our irrational perceptions. Realist philosophy recognizes the

existence of an external world that can be studied and understood within the framework of research (Smart, 2014). Realist philosophy aims to uncover the underlying structures, mechanisms and causal relationships that affect the subject under investigation.

**The objective description of reality** is the main goal of the realist school. It seeks to understand the subject objectively, free from prejudices and arbitrary interpretations. The researcher takes a neutral position and tries to investigate and interpret data and findings objectively. Realist philosophy emphasises objectivity to ensure that the phenomena under study are adequately reflected in the research (Dean et al., 2006).

The process first requires an **understanding of the underlying structures and mechanisms**. Beyond the level of superficial observation, realist philosophy reveals the underlying structures and procedures that shape the subject matter (Song et al., 2017). It recognizes that new oil and gas development practices in African countries can be affected by uncertain variables, complexities and relationships. To provide a comprehensive and nuanced analysis, researchers aim to investigate and understand these underlying processes.

Second, a detailed and unbiased **analysis** is required. By applying a realist philosophy, researchers want to ensure an accurate and objective examination of development methods. This requires taking into account different perspectives, investigating the factors and background that influence tactics, and critically evaluating the available data. In order to increase knowledge and guide decision-making in the field of oil and gas projects in African countries, the researchers aim to present results based on the reality of the issue.

### **3.2. Methodological assumptions**

The researcher's aim is to maintain a neutral position and avoid intervening or actively participating in the situation under study. This strategy ensures that the analysis is objective and reduces bias that may result from human intervention. However, it is crucial to maintain independence and objectivity in research and to be careful not to inadvertently omit important facts. By maintaining their independence, researchers reduce bias that may arise from personal involvement or self-interest in the outcome. This strategy ensures the integrity of the study and allows for a more accurate assessment of the subjects.

Only two cases make up the 'small sample', the limited sample size used in this study. This strategy allows for an intensive examination and evaluation of the results of the development strategy. However, it is crucial to note that the results do not fully reflect the population of new oil and gas projects in African countries.

And as a cornerstone of this research, a theory-first approach needs to be combined with an experimental design. A unified approach to research provides a deeper understanding of the information obtained.

A theory-first approach is one in which accepted ideas and frameworks for the growth of oil and gas projects in African countries are first grounded. A solid foundation of knowledge and understanding is built using existing ideas, concepts and models. The research process is guided by this theoretical framework, which also helps to formulate the overall direction of the research, research questions and hypotheses.

The experimental framework aims to build an experimental framework using the theoretical foundations. The organization and methodology of the research study are described in this framework. Parameters, data collection procedures and analytical methods used to evaluate the proposed development initiative are outlined.

Validation and testing can be understood as different development techniques that can be tested under controlled conditions and compared using experimental designs. By setting up controlled experiments and simulations, researchers can control variables and monitor results. In this way, the efficiency, effectiveness and future impact of tactics can be systematically evaluated.

Improving credibility focuses on improving the validity of results using the design of experiments. Through the controlled environment, researchers can identify and examine the precise factors that influence development methods. As a result, confounding variables are reduced and research conclusions are drawn more reliably.

Overall, using an experimental framework and adopting a theory-first approach supports a systematic and rigorous research process. This ensures that proposed development tactics are rigorously tested, evaluated and validated, leading to more reliable results. The findings from the methodology of this study can provide awareness and recommendations for the effective use of development strategies in the context of new oil and gas development in African countries.

### **3.3. Research strategy – Case study**

The research team used a 'case study approach', which involves in-depth analysis of specific cases involving the growth of oil and gas activities in African countries. Case studies are past initiatives, examples of effective practices or relevant experiences. Using this process, real-world scenarios can be examined in depth and illuminating insights can be gained.

To obtain data for case study analysis, the research primarily uses secondary data sources. Examples of these sources include journals, books, government publications and other relevant organisations. By exploring these existing sources, researchers can learn about oil and gas projects in African countries from previous studies, research papers, reports and other documented sources.

Insights from existing information play an additional role in the research by relying on secondary data sources and using previously developed knowledge and conclusions on the topic. By examining and integrating existing data, researchers can gain a deeper understanding of the development plans, challenges and outcomes related to oil and gas projects in African countries. This will contribute to research analysis and a full understanding of the issues.

It is very important to be aware of the limitations imposed on secondary data sources. Such information may have biases and limitations stemming from the original source. Any research may have secondary data limitations. For example, there may be biases in the data collection or reporting process or imbalances between the representation of different views. There may also be differences in the availability and completeness of data, which can affect the integrity of the research. Researchers should rigorously assess the value and applicability of secondary data and report any limitations in the results.

### **3.4. Ethical considerations**

In addition to the above, the researcher may include other relevant methodological considerations, such as ethical guidelines, data analysis techniques, or any specific tools used for data collection and interpretation.

#### **a. Ethical guidelines**

To ensure that research is conducted ethically, researchers must adhere to a set of ethical principles and standards. These include obtaining participants' informed consent, ensuring participant confidentiality, protecting confidential information and safeguarding the privacy and welfare of research participants (Giorgini et al., 2015). Ethical principles ensure that research is conducted ethically, responsibly and with due respect for the rights and dignity of participants and stakeholders.

Ethical considerations should not be neglected throughout the research; Bell and Bryman (2006) present ten ethical principles that should be followed when conducting

research. These can be broadly divided into two groups: The first is to protect the interests of research participants; the second is to collect appropriate data to obtain unbiased results.

**Table 2. Key principles in research ethics**

<b>№</b>	<b>Principle</b>
1	Ensuring that no harm comes to participants
2	Respecting the dignity of research participants
3	Ensuring a fully informed consent of research participants
4	Protecting the privacy of of research subjects
5	Ensuring the confidentiality of research data
6	Protecting the anonymity of individuals or organizations
7	Avoiding deception about the nature or aims of the research
8	Declaration of affiliations, funding sources and conflicts of interest
9	Honesty and transparency in communication about the research
10	Avoidance of any misleading or false reporting of research findings

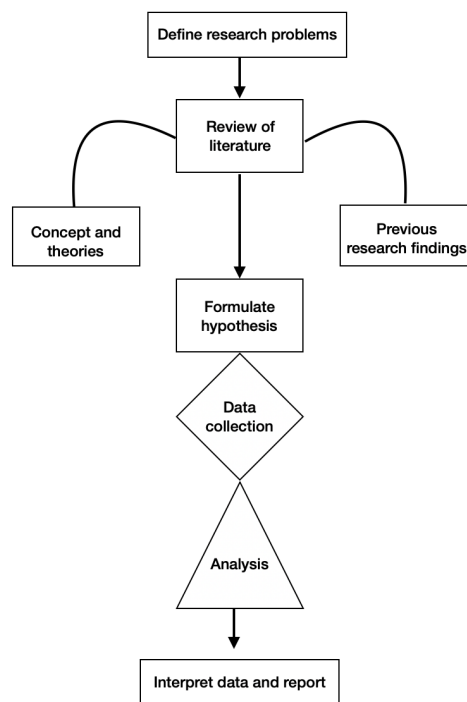
Source: Easterby-Smith, Thorpe, & Jackson, 2012, p. 162

Our team considers all principles mentioned above as crucial parts of the research. We as researchers admit having a shared responsibility towards each other and treat each other with respect, recognising each other's contributions in a project.

### **3.5. Data collection and analysis**

The procedures and strategies used to examine the collected data are referred to as data analysis techniques. Different approaches can be used depending on the type of data and the nature of the research. Thematic analysis, content analysis and discourse analysis are examples of common qualitative data analysis techniques. Statistical analysis, regression analysis and data mining are examples of common quantitative data analysis methods. The research objectives, the type of data collected and the research question addressed influence the choice of data analysis tools.

**Figure 2. Flow chart - a complete research process**



Source: made by the authors

Specific tools for data collection and interpretation are often used for data collection and analysis in research. For example, researchers may use standardised questionnaires or interview protocols to collect data in surveys or interviews. Checklists for observations, discussion topics for focus groups and frameworks for document analysis are also examples of data collection tools. In addition, specialised software and analysis tools such as statistical software packages, qualitative data analysis software and geographical analysis tools can be used to interpret and visualise data. The data collected throughout the research process is organised, analysed and interpreted with the help of these tools.

The methodology chosen for this research project has several advantages. The independence of the study supports objectivity, the small sample size allows for in-depth analysis, the theory-first approach provides a strong theoretical foundation and the case study methodology utilises existing knowledge. However, it is important to recognize the limitations associated with the choice of each methodology. With careful consideration of these factors, this study aims to provide valuable insights into alternative development



strategies for oil and gas projects in emerging African countries and contribute to the existing body of knowledge in this field.

In conclusion, the chosen methodology for this research project offers several benefits. The independence in research promotes objectivity, the small sample size allows for detailed analysis, the theory-first approach ensures a strong theoretical foundation, and the case study methodology leverages existing information. However, it is important to acknowledge the limitations associated with each methodological choice. By carefully considering these factors, the research aims to provide valuable insights into alternative development strategies for emerging oil and gas projects in African countries while contributing to the existing body of knowledge in this field.

## **4. EMPIRICAL FINDINGS**

### **4.1. Introducing case countries: Ethiopia and Kenya**

Under Jomo Kenyatta's leadership, Kenya attained post-colonial independence from British colonial authority in 1963. Following independence, Kenya experienced political difficulties related to land distribution and racial conflicts, which led to the establishment of KANU's one-party rule and eventually the adoption of a multi-party system. Economic development took place, with Nairobi becoming a regional hub, particularly in agriculture, manufacturing, and technology. Democratic advancements in politics were accompanied by moments of instability, most notably the 2002 election that brought Mwai Kibaki to power. Elections that followed were plagued by controversies and violence. Devolution and expanded civil liberties were included in Kenya's 2010 adoption of a new constitution, yet issues like inequality and corruption still exist.

Emperor Haile Selassie was overthrown in 1974, ending Ethiopia's monarchy and establishing the Marxist-Leninist military junta known as the Derg, which was characterised by oppression and economic hardship. In 1991, a coalition of rebel organisations known as the EPRDF overthrew the Derg regime and instituted a federal structure based on ethnicity. Ethiopia's economy grew significantly in the twenty-first century, with a focus on infrastructure, agriculture, and manufacturing. The election of Abiy Ahmed as prime minister in 2018 sparked political and economic reforms, including rapprochement with Eritrea. Ethiopia has faced difficulties, including ethnic conflicts that have had a large humanitarian impact in places like Tigray, Oromia, and Amhara. Current events and reliable sources for the most recent information should pay attention to recent developments, such as the conflict in Tigray.

**Figure 3. Ethiopia and Kenya in modern maps**



Source: made by the authors

**Table 3. Current main information about countries**

Country	Population (2021 estimate)	Capital	Official Language (s)	Currency	GDP (2020 estimate) (in USD)	GDP per Capita (2020 estimate) (in USD)
Ethiopia	118 million	Addis Ababa	Amharic	Ethiopian Birr (ETB)	\$96 billion	\$851
Kenya	54 million	Nairobi	Swahili and English	Kenyan Shilling (KES)	\$95 billion	\$1,746

Source: Central Statistical Agency of Ethiopia (CSA) , Kenya National Bureau of Statistics (KNBS)

#### **4.2. Ethiopia and Kenya oil and gas: current situation and historical perspectives**

Ethiopia's proved oil and gas reserves are small, and exploration progress has been uneven up to this point. Given the many above- and below-ground dangers involved as well as the inconsistent drilling results, we predict that investor interest will be relatively modest over the ensuing years. The proposed gas production and LNG export partnership by Poly-GCL was the largest project in the upstream industry. The government, however, has revoked the business's operating permit, alleging insufficient project development. Although it is looking for more investors, we think it will have trouble finding different project sponsors. The long-term view is more optimistic, with increased vehicle ownership and strong economic development expected to boost oil consumption over the course of our 10-year prediction period.

Since exploration efforts have largely failed in Kenya over the past few decades, the country is still a frontier market for oil and gas. Kenya continues to be a high-risk market for potential entrants due to the abundance of previous commercially unviable discoveries, developing oil and gas legislation, and the lack of extensive oil and gas infrastructure required to commercialise any possible finding. The future of Kenya as a medium-sized oil producer in SSA depends primarily on Tullow Oil making a final investment decision on its 120,000 b/d South Lokichar multi-field development, which has experienced severe delays in recent years.

At the moment, Kenya does not produce any oil or gas. Due to its big population and robust economic activity, Kenya consumes the third-most refined fuels in SSA.

African countries, including Ethiopia and Kenya, have witnessed a growing interest in their oil and gas potential. The dynamics of the interplay between state and foreign parties in these countries are shaped by their unique socio-political and economic contexts (Johnson, 2013; Davis et al., 2020).

In Ethiopia, the state assumes a dominant role in the oil and gas sector, with the Ethiopian Petroleum Supply Enterprise (EPSE), a state-owned entity, responsible for managing exploration and development activities (Smith, 2010). The government's emphasis on resource nationalism and local participation has significantly influenced interactions with foreign parties (Brown & Wilson, 2017). Negotiating production-sharing agreements, establishing regulatory frameworks, and promoting local content have been key aspects of the state-foreign party interplay in Ethiopia (Jones, 2008).

On the other hand, Kenya has adopted a more liberalised approach to its oil and gas sector, attracting foreign investment through competitive bidding rounds (Johnson, 2013). The country has implemented legal reforms to create an enabling environment for oil and gas projects, facilitating the interplay between state and foreign parties (Davis, 2011). Commercial negotiations, ensuring compliance with environmental and social regulations, and addressing community concerns are important elements of state-foreign party interactions in Kenya (Smith & Johnson, 2012).

The involvement of various actors, including international oil companies, national oil companies, and independent operators, has influenced the dynamics of the oil and gas sector in both Ethiopia and Kenya (Wilson, 2016; Thompson, 2019). The interplay between state and foreign parties is influenced by the countries' development objectives, governance structures, local capacity-building efforts, and the imperative of sustainable resource management (Miller, 2005; Turner, 2018).

Considering the historical, political, and economic factors at play in Ethiopia and Kenya provides insights into the opportunities and challenges encountered in their respective oil and gas sectors. Understanding these dynamics helps develop strategies for effective collaboration between state and foreign parties, facilitating the successful and sustainable implementation of oil and gas projects (Davis et al., 2020).

In conclusion, the interplay between state and foreign parties in oil and gas projects is influenced by legal regimes, political dynamics, and economic considerations. The cases of Ethiopia and Kenya illustrate the complexity and significance of this interplay within the

African context. By understanding the dynamics and challenges of state-foreign party interactions, stakeholders can devise strategies that foster successful and sustainable oil and gas projects in these countries and beyond.

In the context of sustainable development, it is crucial to address different perspectives on the concept. Sustainable development encompasses considerations of environmental, social, and economic factors. However, there exist critical perspectives that view sustainability as a Western term aimed at preserving privilege. Alternative views on sustainability, such as those found in China, Soviet philosophy, and ecocentric approaches, challenge the dominant narrative (Wilson & Davis, 2019).

To summarise, a comparative analysis of Kenya and Ethiopia's oil and gas sectors reveals the influence of historical factors on their development trajectories. By examining their experiences, valuable lessons can be learned regarding governance, resource nationalism, and capacity-building efforts. Furthermore, critically exploring diverse perspectives on sustainability allows for a more comprehensive understanding of the challenges and opportunities in the oil and gas industry.

**Table 4. Comparative analysis of Ethiopia and Kenya oil and gas sector**

Country	Oil and gas sector
Kenya	A dominant role of the state in the oil and gas sector
Ethiopia	More liberalized approach
Both countries	Growing interest in their oil and gas potential Complexity and significance of the interplay within the African context

### **4.3. Case of Kenya – The South Lokichar oil project**

#### **4.3.1. General information**

**The South Lokichar** onshore oil project, also known as Project Oil Kenya, located in the Turkana County of Kenya will be the first major upstream oil project in the East African country. Anglo-Irish oil and gas exploration company Tullow Oil holds a 50% stake and is the operator of the project, while Total and Africa Oil hold a 25% stake each. However, Africa Oil Corporation and TotalEnergies withdrew from the South Lokichar project, transferring their shares to the operator Tullow Oil. This may indicate dependence on the participation of key partners and possible problems with the continuation of the project without the support of major participants.

The entire South Lokichar basin is believed to hold up to four billion barrels of oil resources, while the project, in stage one development, targets the Amosing, Ngamia and Twiga fields within the basin that are estimated to contain up to 560 million barrels of oil resources. A pre-commercial early production facility for the South Lokichar oil project was commissioned in June 2018 and it reached 2,000 barrels per day (bpd) production capacity in May 2019.

#### **4.3.2. State options for legal regimes and supply chains**

**The South Lokichar** project in Kenya is subject to regulatory oversight by the Kenyan government, specifically through the Kenyan Energy and Petroleum Regulatory Authority (EPRA). In March 2023, an updated Field Development Plan (FDP) for this project was submitted to EPRA for approval. The Kenyan government also evaluates the development plans for the project, as seen when it reviewed the final FDP for Tullow Oil's \$3.4 billion Lokichar oil project. The Energy and Petroleum Regulatory Authority of Kenya has also been involved in the development of the Lokichar-Lamu pipeline linking the processing facilities at the Lokichar oilfields to the Lamu port.

The project sees participation from both state-run and private entities. Kenya's state-run oil and gas firm, NOCK, partnered with Schlumberger to finalize a field development plan on the government's behalf for the Lokichar Basin resources. Additionally, Tullow Oil, Africa Oil Corp, and Total (formerly Maersk Olie og Gas) were joint venture partners in the project and had signed an early oil pilot scheme agreement with the Government of Kenya in March 2017. The project also witnessed changes in stakeholder interests, with Africa Oil Corporation

and TotalEnergies withdrawing from the project and Tullow Oil taking over their shares. The project's legal regime appears to be characterised by joint venture partnerships, stringent governmental regulation, and significant interactions between private sector entities and governmental bodies.

#### **4.3.3. Constraints related to Path-dependencies**

**Kenya's** post-colonial heritage stems from the country's historical past, when it was a British colony before independence in 1963. This period left a significant imprint on the social, political and economic structure of the country. The British colonial administration established the foundations for Kenya's modern political system. However, it also led to conflicts and tensions between different ethnic groups, which were reinforced by the colonial policy of "divide and rule". English was introduced as an official language, and it remains an important language in government and educational institutions. The educational system was also modelled after the British system. The colonial past has also left an imprint on the culture and social relations in Kenya, affecting the identity and interaction between different ethnic groups.

Various foreign entities have shown interest in **the South Lokichar project**. Tullow Oil, a London-listed company, has been in talks with Indian state-run firms ONGC Videsh and IOC regarding selling part of its stake in the project. Moreover, Tullow Oil has been seeking a strategic partner to develop the South Lokichar project, which is indicative of the project's significance in international energy markets.

As for geopolitical tensions, there isn't specific information available on international sanctions or geopolitical tensions directly affecting the South Lokichar project.

#### **Corruption**

The economic damage caused by corruption in **Kenya** is very significant. According to the Ethics and Anti-Corruption Commission, Kenya loses about 608 billion Kenyan shillings annually due to corruption, which is 7.8% of the country's GDP.

#### **Ethnic conflicts**

Ethnic conflicts often occur in **Kenya**, although most of them are classified as minor skirmishes. Conflicts arising from oil and gas production in the Turkana District of Kenya are noteworthy, as this may indicate how ethnic differences and competition for resources may affect oil and gas projects in the region. In addition, civil society in Kenya argues that the fact that oil exploration is carried out in areas subject to ethnic competition and hostility leads to



improper management of oil revenues in these areas. In particular, the \$3 billion pipeline project in Kenya faced delays almost immediately after its approval in June, although the reasons for these delays were not specified (The Conversation, 2023).

#### **Resource dependence and poverty**

As for the poverty rate, **Kenya** reduced it from 36.5% in 2005 to 27.2% in 2019. From 2000 to 2011, the poverty rate in **Ethiopia** decreased from 44% to 30%, mainly due to the growth of the agricultural sector.

Agriculture plays a dominant role in the lives of poor people in **both countries**. The economy and people's lives there are heavily dependent on natural resources and natural tourism, thanks to the country's rich biodiversity and unique landscapes. The natural resources include minerals such as zinc, soda, salt, limestone, precious stones, gypsum, fluorite, diatomite, as well as oil and gas. In addition, hydropower is also an important resource for the countries.

#### **Innovation**

**Kenya** holds a leading position in the field of fintech innovation at the global level. It is becoming a global centre of innovation in the field of financial technology, along with how the United States has long dominated this field, inventing credit cards, ATMs and online banking. The startup ecosystem in Kenya is supported through innovation hubs, which play a significant role in supporting innovators and startups in the country. These hubs provide platforms for the development and testing of new ideas, which contributes to the development of the innovation ecosystem in the country.

One of the key areas of innovation in Kenya is digital technology. The Digital Kenya project aims to address the current debate about the adaptation of destructive information and communication technologies not only in Kenya, but also around the world. Kenya has already had the experience of destructive innovations, such as M-PESA, Ushahidi, BRCK and BitPesa, which cause changes in other parts of the world, and many other Kenyan innovations are already in the process of development.

#### **4.3.4. Impacts on sustainability (social, economic, environmental)**

**The South Lokichar** project pays attention to environmental issues and environmental protection. This is confirmed by the submission of the Environmental and Social Impact Assessment (ESIA) report for the development of the 852-kilometre Lokichar-Lamu pipeline linking the processing facilities at the Lokichar fields in Turkana District with the port of

Lamu 1 Conventional Oil Field, Kenya Offshore Technology. (2023). This demonstrates the desire of the project participants to minimise the environmental impact and social consequences of the project. An Environmental and Social Impact Assessment (ESIA) was carried out for the project, in particular for the development of the Lokichar-Lamu pipeline, which connects the processing facilities at the Lokichar fields with the Lamu port. The ESIA was conducted to assess the environmental and social impact of the project, including traffic to Eldoret, although it did not cover road infrastructure or related upgrades. In Turkana district, where South Lokichar is located, the political debate has intensified in the run-up to the elections, and the debate on the topic of the oil industry is largely focused on the issue of income distribution. The foundation stage development (FSD) of the project involves a total of 33 well pads and 321 wells at the Amosing, Ngamia, and the Twiga oil fields. Out of the 33 well pads, 12 are existing well pads developed during the exploration, appraisal, and early oil pilot scheme activities. The Ngami field is planned to be developed with 230 wells through 22 well pads, while the Amosing and the Twiga fields are planned to be developed with 81 wells and 10 wells through nine and two well pads respectively. The well flows from the fields will be sent to a central processing facility for the separation of oil, water, and gas. Water will be injected into wells to maintain reservoir pressure, while the gas will be used as the fuel for two on-site gas-turbine generators of 24 MW capacity each. The project will also receive additional water from the Turkwel dam through a 90-km long underground pipeline. The plateau production rate of the foundation stage development project will range from 60,000bpd to 80,000bpd of crude oil.

#### **4.4. Case of Ethiopia – The Hilala gas project**

##### **4.4.1. General information**

**The Hilala** project in Ethiopia is primarily described as the development of traditional gas fields located onshore in the country. The project is managed by POLY GCL Petroleum Investment, the company that owns the ownership of the field. The participation of Chinese firms is significant, as evidenced by the termination of contracts with Chinese Poly-GCL and the participation of other Chinese contractors, such as China National Petroleum and China Sunrise Group, in the development of the Hilala 32 complex (Ethiopia Offshore Technology, 2023). The significant participation of POLY GCL Petroleum Investment and other Chinese companies suggests that the project is private.

As shown above, **both projects** divide risks between various investors and contractors, including logistics, pipeline construction and software use.

#### **4.4.2. State options for legal regimes and supply chains**

**In Ethiopia**, there is a legal framework for PPPs, which may be relevant for projects such as Hilala, especially if there is cooperation between the government and private organisations such as POLY GCL Petroleum Investment. The participation of the Chinese company POLY GCL Petroleum Investment in the Hilala project, as well as cooperation with other Chinese contractors, may indicate a form of public-private partnership or foreign direct investment. However, the exact legal framework and government regulation related to the Hilala project may require a more in-depth study of Ethiopian oil legislation, government policy on foreign investment in natural resources and specific contractual agreements related to the Hilala project. For a more detailed understanding, familiarisation with official government documents or contacting Ethiopian government agencies responsible for oil and mineral resources could give a clearer idea of the legal regime surrounding the Hilala project in Ethiopia.

#### **4.4.3. Constraints related to Path-dependencies**

**Ethiopia** has a unique postcolonial heritage among African countries, as it is one of the few African countries that has successfully resisted colonisation attempts. However, despite this, the country was not completely isolated from colonial influence, especially in light of the Italian occupation in 1936-1941. After World War II and liberation from Italian occupation, Ethiopia joined the United Nations and became an active participant in the international political scene.

However, dependence on the path may make it difficult to implement reforms in public organisations in Kenya and Ethiopia. For example, managers in these organisations may face difficulties when trying to introduce new management approaches to improve public services for low-income population groups.

Path dependence may affect the development of seed production in African countries, limiting the adoption and implementation of new technologies and methods. For example, the study mentions that the historical development of the Ethiopian Sorghum Improvement Program (ESIP) was limited due to path dependence.

## **Corruption**

Corruption in **Ethiopia** is a serious problem, as in many other countries. It is evaluated within the Corruption Perceptions Index (CPI), which is compiled by Transparency International. According to the data for 2022, Ethiopia received 38 points out of 100 possible on this index.

## **Ethnic conflicts**

**Ethiopia**'s northernmost region of Tigray is at the centre of a civil conflict involving ethno-regional militias, the federal government, and the Eritrean military that has attracted the concern of humanitarian groups and external actors since November 2020 (New Business Ethiopia, 2023).

## **Innovation**

As for **Ethiopia**, the Global Innovation Index (GII) that ranks world economies according to their innovation capabilities gave the country the statistical confidence interval in 2022 between ranks 112 and 124, which is not such a noticeable result.

## **Political Dynamics**

The political dynamics in **Ethiopia** are heavily influenced by both internal politics and geopolitical interests, which have been inducing political shifts in the nation. Here are some facets of these dynamics based on the information available:

- **Regional and International Geopolitical Interests:** Ethiopia has become a significant area for regional and international geopolitical interests, especially with the conflicts that have engulfed the country. Although the conflicts and political dynamics are largely local, they have international significance due to Ethiopia's strategic position in the Horn of Africa.
- **Federalism and Developmental State Ideology:** The pillars of federalism and the developmental state ideology have not been well-aligned in Ethiopia, leading to conflicts and new mobilisation driven by growing ethnonationalism. This misalignment has fuelled political tensions and protests, reflecting a shift in political dynamics.
- **Historical Political Cycles:** Ethiopian politics have seen a vicious cycle of reforms and regime changes, reminiscent of past political upheavals like the coup against Emperor Haile Selassie in 1974 and the defeat of the Derg regime in 1991. The pattern of political reform since 2018 reflects these historical cycles, showing a continuity in political dynamics.

- **Ethiopia-Eritrea Relations:** The relations between Ethiopia and Eritrea, both historically and recently, along with the perceptions of local people in Ethiopia towards this geopolitical situation, play a vital role in the political dynamics of the country.
- **Internal Political Crisis:** The ongoing political crisis in Ethiopia, characterised by riots, state fragmentation, and a standoff between federal and regional governments, further complicates the political landscape, reflecting deeper internal political issues and shifts.

#### **4.4.4. Impacts on sustainability (social, economic, environmental)**

Environmental problems in **Ethiopia** are very diverse and include soil erosion, land degradation, deforestation, water scarcity, loss of biodiversity and various types of pollution, along with the effects of climate change, such as bad rainy seasons. The Ethiopian Government, recognizing these challenges, has set climate priorities, such as reducing emissions by 68% by 2030 and restoring forests to an area of up to 15 million hectares. The Hilala project, managed by the Chinese company POLY GCL Petroleum Investment, is part of a broader initiative by Ethiopia to develop its gas resources. It was planned to lay a pipeline to Djibouti for the commercial sale of gas from the Hilalaj and Kalub fields. The environmental impacts of such infrastructure projects can be significant, given the environmental challenges faced by Ethiopia. The Hilala project and similar initiatives may be influenced by Ethiopia's climate priorities and efforts to integrate environmental considerations into development programs. However, the lack of detailed assessments of the impact of the Hilala project on the environment, in particular, makes it difficult to determine the full scale of environmental consequences.

#### 4.5. Comparison of the two cases

Below we provide a summary table summarizing all the information on the two cases discussed above.

**Table 5. Summary of findings**

	<b>The South Lokichar (Kenya)</b>	<b>The Hilala (Ethiopia)</b>
1. Types of companies involved	National company (significant participation of European company)	Super major (significant participation of Chinese companies)
2. Supply-value chains	Integration	Integration
3. Legal regimes and state options	Strong state regulation with interaction with private entities	Public-private partnership
4. Role of Government and Foreign Companies	Strong state regulation	Foreigners allowed
5. Environmental Concerns	Strong emphasis on environmental stewardship and technological innovation	Facing significant environmental challenges
6. Political Dynamics	Stable political climate	Influenced by domestic politics and geopolitical interests, leading to policy shifts
7. Corruption	yes	yes
8. Ethnic conflicts	yes	yes
9. Resource dependence and poverty	yes	yes
10. Innovative development	Leading position in the field of fintech innovation	Lack of innovations

To summarise, the similarities are, firstly, that both projects are located in Africa. Secondly, the project design of both cases is integration. Thirdly, both projects are subject to postcolonial influences. In terms of differences, the first is that Kenya has strong state control, while Ethiopia has a public-private partnership. The first country has the most stable political situation, it pays more attention to environmental issues and technology development, while the second country lags behind on these issues.

## 5. ANALYSIS

The concept of diversification and integration is crucial in project management as it allows organisations to mitigate risks and maximise opportunities. This work explored the application of diversification and integration specifically in the oil and gas sector. By examining different company types such as supermajors, nationals, and independents, as well as various geographical models like the Norwegian, American, and Iranian approaches, we gain insights into how diversification and integration strategies vary across the industry (Jones & Clark, 2014). These findings emphasise the importance of tailoring project management approaches to fit specific organisational and regional contexts.

In Chapter 2, we examined the theoretical basis of the African Model. In the course of our research we found that in practice it differs and is modified from country to country. Below we present the results of our research

### 5.1. Answers to the research questions

#### 5.1.1. What are available state positions?

The first research question was - **What are available state positions to organise a petroleum project in terms of legal structure and supply chain?**

The initial research question delved into understanding the available state positions for organising petroleum projects, encompassing legal structures and supply chain dynamics. The African model suggests a diverse regulatory landscape, and examining specific cases in Kenya and Ethiopia provides nuanced insights into the recommended approaches for these nations.

In Kenya, the South Lokichar project exemplifies a scenario where robust regulation by the Kenyan government, particularly through the Kenyan Energy and Petroleum Regulatory Authority (EPRA), plays a pivotal role. The country's optimal strategy appears to lie in fostering a conducive environment for independent foreign companies. By establishing a supply-value chain under mutually beneficial conditions, Kenya can effectively harness the expertise and resources of these foreign entities, contributing significantly to the nation's development and job creation. In essence, Kenya's emphasis should be on facilitating an enabling atmosphere for independent foreign companies while concurrently ensuring a supplier-value chain that propels both economic progress and employment opportunities.

Turning attention to Ethiopia, the key action involves a strategic opening of doors to foreign companies, collaboration with independent firms, and the development of a robust supply-value chain. The Hilala project serves as an illustrative example, showcasing potential forms of public-private partnership, as evidenced by the involvement of the Chinese company POLY GCL Petroleum Investment and cooperation with other Chinese contractors. These actions not only attract foreign investments but also contribute to the development of domestic resources, fostering economic growth in the country. In summary, Ethiopia's recommended approach entails a comprehensive strategy that underscores the importance of a well-developed supply-value chain, collaborative efforts, and a receptive environment for foreign businesses, all aimed at stimulating foreign investment, resource development, and sustained economic growth.

This work has provided a comprehensive understanding of project management dynamics in the oil and gas sector, particularly in relation to diversification and integration in Africa. Integration was the dominant strategy in practice based on the cases discussed above, which coincides with the African model discussed in Chapter 2.

Analysis of table 4 shows that Ethiopia should pursue a more comprehensive strategy involving international enterprises, cooperation and supply chains, while Kenya should focus on supporting independent foreign firms through the supplier-value chain.

### **5.1.2. Role of path dependencies**

The second research question was - **How is project design influenced by path dependencies?**

The interplay between states and foreign parties in oil and gas projects stands as a pivotal determinant of project outcomes, carrying profound implications for the regions involved. A comprehensive analysis, drawing upon an extensive review of studies, emphasizes the persistent impact of path-dependency within post-colonial contexts in Africa. This aligns seamlessly with the broader African model, where historical trajectories continue to shape contemporary developments. Notably, factors such as corruption, ethnic conflicts, poverty, and political instability emerge as critical constraints, wielding a significant influence in steering these projects towards failure rather than success. Understanding and navigating these intricate dynamics become imperative for fostering sustainable and prosperous outcomes in the African oil and gas landscape.



Delving deeper into the African perspective, this work explores specific case studies in Ethiopia and Kenya, shedding light on the nuanced complexities inherent in the interplay between states and foreign entities. These case studies serve as microcosms, revealing the intricate dance between national interests and external involvement. The findings underscore the imperative for effective collaboration and negotiation, emphasising the need for mutually beneficial outcomes. Kenya's proactive approach to balancing environmental concerns and technological innovation, as discussed earlier, resonates within this broader context, showcasing the multifaceted challenges and opportunities that define the landscape of state-foreign party relations in the African oil and gas sector.

A comparative analysis of Kenya and Ethiopia's oil and gas sectors further elucidates the intertwined nature of historical factors and contemporary strategies. By examining how these nations have navigated their respective historical trajectories, the study emphasises the delicate balance required in formulating forward-thinking strategies while acknowledging and addressing the legacies of the past. It becomes evident that a nuanced understanding of historical context, coupled with adaptive and forward-looking approaches, is crucial for steering the oil and gas sectors in Kenya and Ethiopia towards sustainable development and resilience in the face of evolving challenges.

### **5.1.3. Social, environmental and economic sustainability**

The third research question was - **What are the consequences for social, environmental and economic sustainability of a particular project design?**

In examining the African model, it becomes evident that environmental concerns and technology transfer efforts within the continent are intricately tied to the effectiveness of regulatory enforcement. Notably, Kenya stands out as a noteworthy example, displaying a robust commitment to both environmental sustainability and technological innovation. The nation has positioned itself as a leader in the fintech industry, showcasing a multifaceted approach to development. Kenya's conscientious attention to environmental issues aligns with its proactive stance on fostering innovations, creating a dynamic landscape that addresses the pressing challenges of the modern era. This synergy between environmental consciousness and technological advancement underscores Kenya's strategic positioning within the African context.

On the other hand, Ethiopia presents a contrasting picture, facing notable challenges in both environmental considerations and technology adoption. Lagging behind in these critical domains, the country grapples with the intricate dynamics of development. As the global community navigates the complexities of the green energy transition, Ethiopia's position becomes even more precarious. The challenges are further heightened by mounting public pressure for sustainable practices. The intersection of these factors not only accentuates Ethiopia's current struggles but also underscores the imperative for tailored strategies to address the unique hurdles faced by different African nations in their pursuit of balanced and sustainable development.

## **5.2. Discussion of the problem statement – is it possible to balance between differentiation and integration?**

The petroleum industry faces several challenges, the most important of which is increasing production volume to meet global demand for oil and gas, while at the same time ameliorating the environmental and social impact. In the African context, here we can add issues of the post-colonial past, which still has an impact on doing business and attracting partners as well as investment, and conflicts of interest.

Each oil and gas company on the market is different from each other not only in tangible assets, but also in intangible assets and reputation. This gives the company a competitive advantage. However, nowadays we can hardly talk about competition in the oil market, it is more about cooperation and joint projects. This can be considered quite logical, as oil projects involve huge investments, and the return on investment does not happen immediately, but after dozens of years.

This raises the question of what strategy companies should follow - whether they still use diversification or integration. In the first case, it is a matter of combining within one company all operations and technologies necessary for doing business, which include upstream, midstream and downstream. The second case implies cooperation with oilfield service companies and contractors to whom some part of operations is transferred, such as, for example, software supply or seismic surveying.

During our research we have found that most often, if a company is differentiated, it will resort to the services of external operators only for minor operations, on a company-wide scale. If the company is vertically integrated, it will be more committed to it. Thus, it is

difficult to find a balance between integration and diversification within a single project or field.

We confirmed the same on the example of the two reviewed cases in Africa, where, as it turned out, integration dominates. And this has its reasons and advantages for the host country, which is experiencing a post-colonial past, political instability, low economic development and lack of investment and technology.

### **5.3. Possible development paths for Kenya and Ethiopia oil and gas in the changing geo-political situation**

In the changing geopolitical landscape, the development paths for Kenya and Ethiopia in the oil and gas sector are subject to a dynamic interplay of global power shifts and industry transformations. Key players in this scenario include leading countries with significant influence on the global stage, shaping international policies and trade dynamics.

In the context of a shifting geopolitical energy balance, Africa might be a promising alternative for oil and gas exports to Europe, potentially challenging the dominance of traditional suppliers like Russia. The prospect is driven by the continent's potential to provide a stable and competitive source of hydrocarbons. If African nations can maintain production and affordable prices, they might become increasingly attractive partners for European countries seeking to diversify their energy sources. Such a shift has the potential not only to reshape global energy dynamics but also to catalyse a transformation in Africa's position within the world energy balance. As the international community pivots towards sustainable and diverse energy solutions, Africa could capitalise on its abundant natural resources to play a pivotal role in meeting global energy demands. This paradigm shift not only presents economic opportunities for African nations but also positions the continent as a significant player in shaping the future of the global energy landscape. Additionally, diplomatic relations, trade agreements, and geopolitical alliances may shape the regulatory frameworks, investment climate, and strategic partnerships for the oil and gas sectors in Kenya and Ethiopia. Additionally, geopolitical tensions could influence the energy security considerations of these nations, affecting their resource exploration and export strategies.

The oil and gas sector itself is undergoing profound changes globally, driven by factors such as technological advancements, renewable energy transitions, and environmental consciousness. Kenya and Ethiopia, in developing their oil and gas industries, may need to

balance economic interests with environmental sustainability. Increased scrutiny on carbon emissions and the global push towards cleaner energy sources could encourage these countries to adopt more eco-friendly practices, diversify their energy portfolios, and attract investments in renewable technologies. Adapting to these sectoral changes will be integral to the long-term success and resilience of Kenya and Ethiopia oil and gas industries in the evolving geopolitical scenario.

The rapid growth of renewable energy has certainly begun to irreversibly transform the global energy market. However, there is still considerable uncertainty surrounding the ongoing energy transition, which will be for sure influenced by policy decisions, types of economies and in general different speeds in each country and industry. Despite all possible variations, there are three main aspects characterising this transition: energy efficiency, renewable energy growth and electrification (IRENA, 2019). The most significant trend is a rapid growth of renewables, and in particular solar and wind.

On the one hand, some countries in Africa have already developed large oil and gas fields that will clearly experience a decline due to these trends, as they are net exporters of hydrocarbons. On the other hand, Africa has a good chance of becoming one of the leading regions in the renewable energy industry, as the country has about 330 days of sunshine a year, and also has a great potential to build wind parks that could generate hundreds of times more electricity than the country's population needs (Pickl, 2019).

For those African countries with oil and gas deposits that have not yet been developed or are just beginning to be developed, as in the case of the project in Kenya and Ethiopia, they have a unique opportunity to move away from a fossil fuel-driven development model. This can only be possible if the state is interested in this, which will be forced to resort to the help of foreign partners, not only in the development and exploitation of oil fields, but also in the development of other sectors of the economy, such as tourism.

#### **5.4. Will the “African model” change?**

In general, the African model remains the same, but we have seen some divergences, peculiarities and differences from country to country. Based on the two cases discussed above, the dominant strategy in practice has been integration, which is consistent with the African model discussed in Chapter 2. This choice of model gives countries undeniable advantages: investment inflow, technology transfer, job creation.

Based on an extensive review of research, this paper identifies the limitations of path dependency in post-colonial settings in Africa, which is consistent with the African model. Corruption, ethnic conflict, poverty and political instability surrounding these projects play a crucial role in shaping their failures rather than successes. However, in each of the countries there post-colonial constraints have different degrees of influence.

According to the African model environmental concerns and technology transfer efforts could vary, depending on regulatory enforcement. This rather vague point from the theoretical model remains true and varies depending on the country: while in Kenya they pay a lot of attention to environmental issues, as well as the development of innovation, then in Ethiopia there is a lack of interest or practical knowledge in these areas.

**Table 6. Possible development strategies for Kenya and Ethiopia**

<b>Country</b>	<b>Key action</b>	<b>Results</b>
Kenya	Allow independent foreign companies with supply-value chain	Country development, job creation
Ethiopia	Allow foreign companies, collaborate with independent companies, and have supply-value chain	Attract foreign investments, develop domestic resources, improve economic growth
Both countries	Influenced by path dependency constraints	Complexity of project development and implementation, as well as attracting partners on mutually beneficial terms
Kenya	Strong emphasis on environmental stewardship and technological innovation	Rapid development of the project, high reputation in the market
Ethiopia	Environmental challenges and lack of innovations	Project development is slowed down, it is impossible to reach leading positions, difficulties in attracting partners

#### **5.4.1. Current challenges in oil and gas development in Ethiopia**

1. Lack of infrastructure: Ethiopia's oil and gas sector is underdeveloped, and the country lacks the necessary infrastructure to support large-scale exploration and production activities.

2. Political instability: Ethiopia has been marred by political unrest and conflict, which could affect the stability of the oil and gas sector.

3. Limited experience: Ethiopia's oil and gas industry is relatively new, and there is limited experience and expertise in the sector.

4. Regulatory challenges: There is a lack of clear and transparent regulations governing the oil and gas sector, which could lead to disputes and delays.

5. Environmental concerns: Oil and gas exploration and production activities can have significant environmental impacts, which could impact local communities and ecosystems.

#### **5.4.2. Current challenges in oil and gas development in Kenya**

1. Security concerns: Kenya has experienced security challenges in recent years, including terrorism and banditry, which could affect the safety of workers and the security of oil and gas facilities.

2. Infrastructure challenges: Kenya's infrastructure is relatively underdeveloped, and there is a need for significant investment in roads, power, and other key infrastructure to support oil and gas development.

3. Land rights issues: Land ownership is a contentious issue in Kenya, and there have been conflicts over land use for oil and gas activities.

4. Regulatory challenges: The regulatory environment for oil and gas development in Kenya is still evolving, and there is a need for clear and transparent regulations to ensure that the sector operates within the law.

5. Environmental concerns: Oil and gas exploration and production activities can have significant environmental impacts, which could impact local communities and ecosystems. There is a need for effective environmental management practices to mitigate these impacts.

### **5.4.3. Recommendations for oil and gas development in Ethiopia and Kenya**

The African oil and gas model can evolve over time. Changes may occur in supply value chains, government roles, involvement of foreign companies, and increased attention to environmental concerns. Factors such as geopolitical shifts, technological advancements, and global energy transitions can contribute to these changes.

From a neutral perspective, improving oil and gas development in Ethiopia and Kenya can be achieved by:

1. **Increasing exploration activities:** The first step in improving oil and gas development in Ethiopia and Kenya is to increase exploration activities. This can be done by conducting more seismic surveys and drilling more wells.

2. **Improving infrastructure:** Building proper infrastructure for transportation, storage, and refining of oil and gas products is critical in improving the sector. This includes building pipelines, refineries, and storage facilities.

3. **Strengthening regulatory frameworks:** A robust regulatory framework is necessary to promote transparency, accountability, and efficiency in the oil and gas sector. This involves implementing licensing and permitting processes and enforcing environmental standards.

4. **Encouraging private sector participation:** Encouraging private sector participation in oil and gas development could bring in innovative technologies and management techniques that could improve the sector's efficiency.

5. **Developing a skilled workforce:** Developing a skilled workforce is fundamental to sustaining the oil and gas industry in Ethiopia and Kenya. This involves training local engineers, technicians, and other personnel to handle various aspects of the sector.

6. **Prioritising local content:** Prioritising local content means ensuring that projects in the oil and gas industry prioritise hiring local personnel and sourcing materials and services locally. This ensures that the industry has a positive impact on the local economy.

7. **Enhancing engagement with local communities:** It is essential to engage with local communities to address their concerns and ensure that they benefit from the oil and gas industry. This includes providing jobs, compensation, and addressing environmental concerns.

Developing an oil and gas sector within the economy in Kenya and Ethiopia proves challenging due to a combination of factors. Inadequate infrastructure poses hurdles in exploration and production, while political instability creates an uncertain investment environment. The newness of their oil and gas industries results in limited local experience, slowing development. Regulatory uncertainties, environmental concerns, and the influence of global market dynamics further complicate the process. Additionally, financial constraints and difficulties attracting investments impact critical infrastructure and technology acquisition. Social and cultural factors, including public opinion, add another layer of complexity. Overcoming these challenges necessitates coordinated efforts from both governments and industry stakeholders to establish clear regulations, address infrastructure gaps, and foster a stable and sustainable economic environment.

The research has provided a comprehensive understanding of project management dynamics in the oil and gas sector, particularly in relation to diversification, integration, state-foreign party interplay, and path dependence versus innovation in Africa. The findings underscore the need for adaptable approaches that consider organizational, regional, and historical factors to achieve successful project outcomes in this complex industry.



## **6. CONCLUSIONS**

### **6.1 Main results of the work**

This master's thesis has delved into the intricate landscape of oil and gas development in Ethiopia and Kenya, contemplating the overarching question: "Oil and Gas Development in Ethiopia and Kenya: Path Dependencies or New Opportunities?" The research journey unfolded a tapestry of multifaceted factors influencing the trajectory of these nations' oil and gas sectors. The study's key results underscored the significance of balancing diversification and integration strategies for sustainable development, emphasising the delicate equilibrium required to secure national interests. Notably, the exploration of path dependencies revealed historical influences shaping decision-making in the sector, shedding light on the need for adaptive strategies to navigate these entrenched patterns.

The comprehensive analysis illuminated the challenges posed by political instability, limited industry experience, and regulatory uncertainties, providing critical insights into impediments hindering the full potential of oil and gas development in both countries. However, amidst these challenges lie promising opportunities, with the research highlighting the importance of addressing infrastructure gaps, enhancing regulatory frameworks, and fostering a conducive environment for investment.

The African oil and gas model has the potential to undergo significant transformations over time, influenced by a multitude of factors ranging from economic shifts to global environmental concerns. One key aspect prone to change is the supply value chains within the industry. As technology advances and alternative energy sources become more viable, there may be a shift in the traditional linear supply chain model. The exploration, extraction, refining, and distribution processes could see adjustments to accommodate cleaner and more sustainable practices.

The role of governments in African oil-producing nations is pivotal and subject to change. Governments may reassess their strategies to strike a balance between maximising economic benefits from oil and gas resources and addressing social and environmental challenges. This could involve revisiting regulatory frameworks, renegotiating contracts with foreign companies, and adopting more transparent and accountable governance structures.

Foreign companies operating in the African oil and gas sector may witness changes in their roles and engagements. Increasing emphasis on local content, technology transfer, and sustainable practices may influence the dynamics of partnerships between foreign entities and

domestic governments. Collaborations might evolve to include a stronger focus on environmental stewardship, with an emphasis on minimising ecological impact and fostering corporate social responsibility.

Environmental concerns are likely to play a growing role in shaping the African oil and gas model. As the global community intensifies efforts to combat climate change, African nations may face increased pressure to transition towards cleaner energy sources. This could lead to a reevaluation of the extractive industries, with a focus on reducing carbon emissions, promoting renewable energy alternatives, and implementing stringent environmental safeguards. Overall, the evolution of the African oil and gas model is intricately tied to a complex interplay of economic, political, and environmental factors that will undoubtedly shape the industry's trajectory over time.

## **6.2 Key conclusions (learning points)**

One of the pivotal conclusions gleaned from this research is the indispensable role of effective governance and strategic planning in guiding the oil and gas sector toward sustainable development, in order to avoid the limitations of path dependency in post-colonial settings related to the African model. The intricate nature of the oil and gas industry demands a proactive and well-thought-out governance framework that not only addresses the immediate challenges identified in this study but also establishes a foundation for long-term resilience. Strategic planning becomes paramount in ensuring that the exploitation of oil and gas resources aligns with broader national development goals. This includes creating policies that not only stimulate economic growth but also foster social inclusivity, environmental sustainability, and technological innovation.

Acknowledging and mitigating the challenges outlined in this research holds the key to unlocking the full potential of Ethiopia and Kenya's oil and gas sectors. Effective governance involves creating transparent regulatory frameworks, establishing clear guidelines for industry players, and promoting accountability at every level. By doing so, both nations can create an environment conducive to attracting investments, fostering technological advancements, and ensuring that the benefits of oil and gas development are distributed equitably across various segments of society. This, in turn, contributes to the overall economic growth and social progress of the nations involved.

The positive outlook for innovation and socio-economic advancement is intrinsic to the responsible exploitation of oil and gas resources. It is imperative to view these resources not merely as commodities for immediate economic gain but as catalysts for long-term positive transformation. Responsible practices, including environmental stewardship, community engagement, and ethical business conduct, pave the way for sustainable development. The transformative possibilities embedded in these resources can be fully realised through the implementation of strategic, forward-looking policies that balance economic aspirations with social and environmental responsibilities. As such, the nexus between effective governance, strategic planning, and responsible resource exploitation becomes the linchpin for steering Ethiopia and Kenya towards a future of sustainable and inclusive development, ensuring lasting benefits for their societies and environments.

### **6.3 Limitations and further research**

The master thesis encounters several limitations that warrant acknowledgment. Firstly, the availability and reliability of data may vary between Ethiopia and Kenya, posing a challenge to comparative analyses. Divergent reporting standards, government transparency levels, and data accessibility could impact the depth and accuracy of the study in drawing meaningful cross-country comparisons. Additionally, the geopolitical landscapes of Ethiopia and Kenya are distinct, potentially influencing the implementation of policies related to the oil and gas sector differently. These geopolitical factors might introduce complexities that the study may not fully capture.

For further research, a more nuanced investigation into the socio-economic impacts of oil and gas development in Ethiopia and Kenya is recommended. Understanding how these projects affect local communities, employment patterns, and income distribution can provide valuable insights for policymakers and industry stakeholders. Moreover, an in-depth examination of the regulatory frameworks in both countries would shed light on the effectiveness of governance structures in managing the trade-off between diversification and integration. Future research could also explore the potential role of renewable energy sources in mitigating environmental concerns associated with fossil fuel development in the region.

In conclusion, an extended analysis focusing specifically on the unique contexts of Ethiopia and Kenya within a specific timeframe and the dynamic nature of the oil and gas industry would enhance the applicability and relevance of the master thesis. This could involve a more detailed exploration of historical, cultural, and political factors that shape the

oil and gas sectors in these countries, providing a comprehensive understanding of the trade-offs involved in their development trajectories.

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