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Opportunities and Challenges for Oil and Gas Production in Somalia

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Abstract

Somalia is a country with diverse natural resources, including minerals, renewable and non-renewable energy sources, etc. Recent oil and gas discoveries in Mozambique, Tanzania, and Kenya (offshore) have sparked belief in the huge potential for oil and gas reserves in offshore Somalia. The discovery of hydrocarbons in the Somali offshore oil fields will be a blessing if they are properly managed.

Although Somalia's upstream exploration programs are still in their infancy, oil industry experts believe the country has high potential for oil and gas exploration and production. This underscores the importance of maintaining strong financial management, stabilization, and political stability. Conversely, mismanagement and lack of transparency may transform the oil and gas resource into a looming resource curse, exacerbating environmental and social damage and conflicts.

Rapid economic development and stability in Somalia can be achieved through the extraction of oil, gas, and minerals, as well as the development of agriculture and livestock, alongside the utilization of marine resources and fisheries.

Keywords: Oil production, gas production, political stability, Somalia.

Introduction

With the world population projected to increase by 2 billion to 9 billion people by 2050 and the global economy expected to be four times larger, energy consumption is certain to rise significantly. Certainly, oil and gas are and will be the core of the energy source in a few decades.

Global occurrences of oil and gas are now well understood in most parts of the world, with Antarctica and the Arctic remaining largely unexplored.

Crude oil is expected to remain the leading primary energy resource until at least 2030. As a result, the current global economic context and geopolitics are playing a crucial role in oil and gas production. The oil and gas industry is undergoing massive disruption, and due to our continued heavy reliance on these organic energy sources, it becomes essential to examine the emerging macro and micro trends affecting this global industry.

Investments in the energy renaissance will continue to shift within the oil and gas industry. Consequently, new innovative trends will flow from the upstream sector to midstream infrastructure, refinery operations, and petrochemical facilities. Upstream operators in the oil and gas industry will focus on extracting value from recent discoveries and acquisitions through more efficient operations. They will also need to assess the industry's risks and explore the application of new technologies and innovations.

Previously, oil and gas exploration had been concentrated in politically safe areas, leaving much of the developing world largely unexplored (Lax, 1983). For instance, Somalia has remained unexplored for over three decades due to civil war and political unrest.

Today, with growing energy demands worldwide, the oil and gas-rich nations have garnered global attention. It is noteworthy that only about 1 trillion barrels of oil have been produced to date, and there may still be 2.5-3 trillion barrels of conventional oil left to be produced. A significant portion of this oil remains undiscovered, presenting opportunities for Transnational Oil Corporations (TNOCs) to explore new areas, including emerging markets.

To harness its natural resources for generating revenue and meeting the needs of its people, the government of Somalia should prioritize the opening of certain minerals for exploration and establish a comprehensive hydrocarbon exploration program. Addressing the "force majeure" issue on a case-by-case basis is vital for the Somali government. The government should not allow some concession holders to retain control over the nation's assets by declaring "force majeure," as it is mandated to protect the interests of its citizens. Notably, companies like Shell and ExxonMobil have already entered discussions with the Ministry of Petroleum to recommence exploration work.

This article aims to look at the history of hydrocarbon exploration in Somalia and the opportunities and challenges that might face future oil and gas production in Somalia. The objective of the article is also to educate the general public about hydrocarbon exploration and production. The public does not understand the contributions of oil and gas to base load electricity production.

History of Hydrocarbon Exploration in Somalia

Petroleum exploration in Somalia began in 1912 when an oil seep was reported at Dagah Shabel, 38 km southeast of Berbera. In 1948, Sinchair Oil, Connoco, and Agin discovered eight sedimentary basins: Daban,

Migiurtinia, Mudugh, Mogadishu, El-Wak Mandera, Ogaden, and Chismajo and Lamu Basin (Balthasar, 2014).

The interest in oil exploration recommenced in the late 1970s but it was intensified in the mid-1980s during which most of the concessions were awarded to different oil companies. In 1991, when the civil war started in Somalia, all the oil majors frozen exploration activities, declaring "force majeure" until the stability returnes to the country.

Therefore, from 1991 to 2010, there has been a standstill to all exploration activities due to continued civil unrest. In 2011, Genel energy signed two production sharing agreements with Somaliland authority. In 2012, Africa Oil and its partner Range Resources started initial drilling in the Shabeel-1 well after they signed an exploration program with Puntland authority. In 2013, a new era has started for Somali Oil and gas sector as the Federal Government initiated new policy and regulations framework in the management of natural resources of Somalia.

In 2015, Spectrum company acquired approximately 20,000 km of long-offset 2D seismic data offshore Somalia (see figure below) from Barawe to Hobyo. The data has been used to de-risk source rock presence, distribution, and maturity. There are strong indications of widespread distribution of good quality source rocks that modelling has shown to be in the petroleum window, potentially charging significant traps. The interpretation of the 2D seismic surveys revealed the presence of geological structures and stratigraphic traps offshore that seem favorable in holding significant amounts of hydrocarbons. The next exploration phase will identify areas where oil and gas have been produced from a source rock, such as shale, and then migrated to a porous reservoir rock before becoming trapped by another layer of dense rock or naturally occurring faults.

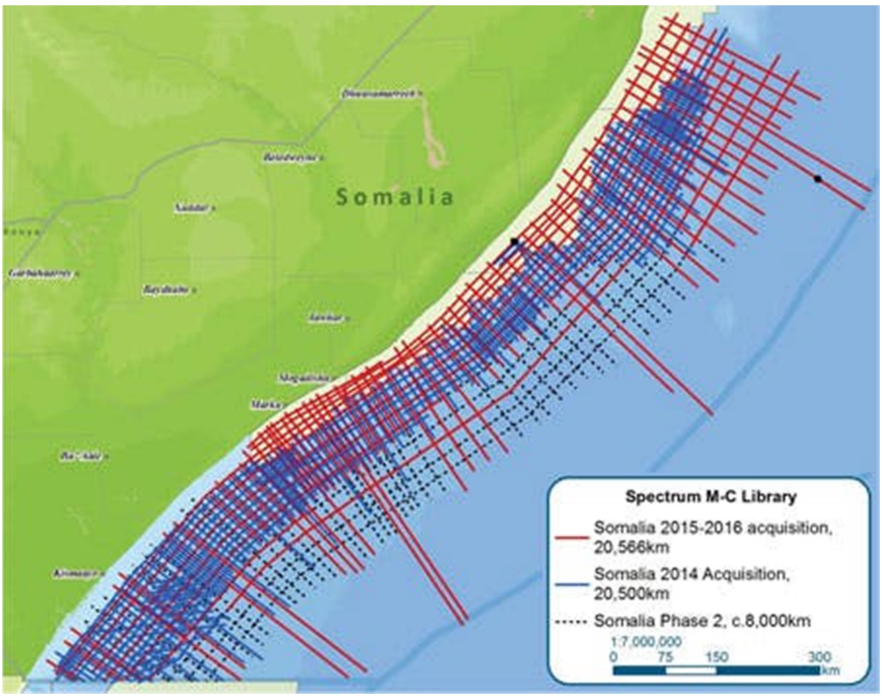

Image Provided by Hodgson (2016) from Spectrum Geo Ltd.

In 2018, the Federal Government and Regional Member States signed the Petroleum Ownership Management and Revenue Sharing Agreement. It states that natural resources are owned by the Somali people and that future revenues from petroleum development should divided between the Federal Government, Federal Member State and local authorities in a certain proportion. In 2019, Shell and Exxon agreed to resume petroleum exploration in Somalia. In 2020, they made a legacy payment of $1.7m, which was for the first time distributed in accordance with the new Revenue Sharing Agreement. The 2020 Petroleum Law established the Somali Petroleum Authority (SPA), a new regulatory for petroleum operations in the country.

In a nutshell, since 1950s only less than 70 wells were drilled onshore and 6 wells offshore. So far most of the drilled wells have no prospect of extracting-commercial oil. This indicates that Somalia is still under-

explored country compared to the other East of African countries. Somalia needs an extensive geological and geophysical exploration. Federal Government of Somali had contacted the major international oil & gas companies who currently hold concessions in Somalia since the 1980s to re-start their operations in Somalia since the security situation continued to improve. In 2022, Somalia has signed a petroleum exploration agreement for seven offshore blocks with United States-based Coastline Exploration,

Opportunity of Oil and Gas Production

Recent oil and gas discoveries in Mozambique, Tanzania and Kenya (offshore) have led to the belief of huge potential for oil and gas reserves in offshore Somalia because of similar regional geological trends and extended reservoir basins.

Somalia's perceived petroleum potential holds hopes for revenue streams that could contribute to the inclusive economic development of the country. Despite the fact that no discoveries have yet been made, regional geological trends and domestic data collection indicate the presence of petroleum in Somalia.

If oil or gas discovered in Somalia, it will be a new era of opportunities in the Somali oil and gas industry, due to its geographic location; Somalia should look for markets and investors from the East. Countries such as Malaysia, Japan, India and China will be eager to gain access to Somalia’s oil and gas if its reserves are deemed to be viable.

Build Economic Capability:

Main Objective of finding an oil and gas is to widen and deepen economic, political, social and cultural integration to improve the quality of life of Somali people. The oil and gas resources will boost investment

which in turn, could result in revenues with the potential to provide sustainable economic benefits for all Somalis (Hussein, 2022). Furthermore, the country will have an opportunity to develop the local economy and alleviate living standard of Somali people, who have been suffering poverty and ruthless war for decades.

The UNDP estimated that > 70% of Somalis live in poverty in 2020. The oil and natural gas industry within Somalia will be a significant contributor to employment, the national economy as well as government revenues. It will create new employment and expand business opportunities by promoting investment, foreign and domestic whilst providing a strong base for a strong local content.

Further more, the petroleum resources will provide lower energy costs for Somali people, and will help build a high performing and sustainable business that stabilize the economic environment and paves the path for financial independence.

Infrastructure and Capacity Building

Oil and gas production will generate revenue that will help build infrastructure of the country such as educational system, basic healthcare, securoity, job creation and realize sustainable economic growth.

The capacity building effort will improve the provision of basic public services to overcome the gaps that prevent society from taking advantage of natural resources – education, health, infrastructure, science, and technology, among others. Furtheemore, vocational and training centers should be set up to provide trainings to unskilled and skilled people and improve good governance in oil and gas industry both in the public and private sectors. The quality of education and the skills people need also to be integrated into society as well as contribute to the country's

development and help build human capacity in Somalia. Due to the rapidly changing technology used in the oil industry, will provide adequate training programs to enhance employees' capabilities

Challanges of Oil and Gas Production

The main challenges that face oil and gas production in Somalia are building inclusive politics, security, justice, economic foundations, revenue collection and Dutch disease whereby it is the negative consequences arising from the spike in the value of a nation"s currency due to the increase in the developmentof a specific sectorand a decline in other sectors. (Bature, 2013).

Exploration and production operations are likely to induce economic, social and cultural changes. These changes might cause negative impacts on politics, economics, social structure, natural resources such as agriculture, fishing, logging as well as road, air and sea infrastructure.

Political Risk

The discovery of oil and gas might cause political risk in Somalia. Political risk is the probability that changes in the political environment will reduce returns to the point where the project would be no longer acceptable on the basis of ex ante criteria (Kobrin , 1979). The name 'political risk' was first used after the 1973 oil crisis, and interest increased after the Falklands crisis between Argentina and Britain, along with the war between Iran and Iraq (Fitzpatrick, 1983). The political risk is increasing in importance, and as such, companies need to ensure they take the right steps towards being able to forecast risk as well as having plans in place should such risk arise (Brink, 2004). In the case of Somalia, civil war, personal safety, health condition and hostile attitude will be major causes of politic risk to explore and produce oil and gas in the

offshore. Furthermore, social tensions are deep-rooted and entrenched in Somalia.

Political stability is another crucial factor that must be persistent and characterized by the principles of good governance, which include transparency, accountability, access to information, respect for the rule of law, and citizens' participation. Hence, a permanent political agreement between the Federal Government and Federal Member States is necessary to preserve political stability, which in turn protects both nationals and foreign employees from threats like kidnapping, crime, piracy, infections, and illness.

In a nutshell, Somalia is a country that is coming out of decades of civil war, conflict, and destruction of governance structure, economic infrastructure, but it is a providentially blessed country with varied natural resources such as minerals, renewal and non-renewal energy, etc.

Owing to these important natural resources, they must be managed sustainably because exploitation of natural resource has often come with economic mismanagement, corruption, political instability when mismanaged by weak fiscal regulations, secrecy, nepotism. Somali should not o be "Paradox Plenty", which means a country with a plenty of natural resource and yet to have worse economic situation than nations with no or fewer natural resource like Nigeria, despite its oil wealth, 90% of its citizens live on less than $2 per day (The Nigerian Voice. 2013).

Creating more Poverty, Inequality

Although petroleum resources may boost investment that could result in revenues with the potential to overcome poverty, inequality and provide sustainable economic benefits for all Somalis, however, across the globe

there are many examples of countries where the discovery of natural resources has fuelled conflicts and economic regression instead.

The research on the relationship between natural resources, poverty and inequality are rare. Cavendish (1999) studied a relationship between natural resources, poverty and inequality in Zimbabwe and he underlined that the importance of natural resources and environmental services when assessing poverty and inequality. By calculating these measures with and without considering the income derived from natural resources, he shows that poverty and inequality can be overstated using conventional household surveys (by as much as 98% for poverty and 44% for inequality, depending on the poverty line and the specific measure used). If income from natural resource extraction reduces poverty and inequality, then poverty and inequality estimates should increase when this income is not taken into account.

Natural Resource Curse

The Somali people have been suffered tremendously for the last 30 years during the civil war and its aftermath. No one intends to have the quest for oil and gas to reignite divisions and violence.

If poor and insane financial governance prevail in the country as occurred previously, then the oil and gas discovery will lead to a resource curse and the country might go back to conflict, civil war and economic regression. We could recall what happened in Iraq and Libya where there were high oil revenues but associated with poor governance, lack of economic and social development, lack of respect for basic human rights and poverty amidst plenty.

Furthermore, If the relationship between the Federal Government and Federal Member States remains volatile relationship, the quest for oil and

gas to re-ignite divisions and violence and both nationals and foreign employees will be unprotected from threats such as kidnapping, crime, piracy, illness etc.

If a hydrocarbon is discovered offshore Somalia, will a "*resource curse*" occur? Or will it improve the security situation and bring enhanced and accelerated development? Or will it bring conflict and further military activity, as seen in the raging conflict in Libya, Iraq, South Sudan etc? Or will oil bring greater collaboration between federal and local governments?

Manpower Challenge

Somalia is still emerging from post conflict status so it might take some time until Somali professionals in the oil and gas sector available by graduating from local universities or returning from aboard. Somali Federal Government must address the shortage of manpower by enhancing the existing geoscience and engineering departments to produce outstanding engineers and geologists and also to train further the current petroleum and oil and gas professionals who are skilled, knowledgeable and adaptable to the dynamic environment. Such experts must have a combination of technological and management skills, knowledge and competencies. The field offers diverse career opportunities and graduates may find themselves employed in areas such as Exploration, Production, Reservoir, Facilities, Transportation, Drilling, Economics, Management and many more.

Furthermore, establishing training centers are crucial to provide trainings to unskilled and skilled people and enhance good governance in oil and gas industry both in the public and private sectors. The quality of the education and the skills people need to be integrated into society and contribute to the country's development.

Environmental Impact

The oil and gas industry faces a number of issues and operational constraints that make it difficult to completely eliminate its environmental footprint. For instance, drilling and resource extraction create a number of wastes, such as produced water and drilling waste. Wastes that cannot be reused or recycled must be stored or disposed of in some manner, increasing the land area affected by oil and gas extraction and raising concerns over potential leakage of drilling fluids and other wastes from storage sites.

Drilling operate also generating pollution, fueling climate change, disrupting wildlife, marine ecosystems. Moreover , the drilling operation might cause personal injury, loss of life, and natural disasters. Therefore, the federal government should give a major priority to proctect human life and environment by setting up environmental protection policies and regulations. It is the government's duty is to develop and enforce regulations that can mitigate the environmental hazards associated with oil and gas production.

The company should be instructed to developed mitigation efforts that are driven by win-win technologies, that is: technologies that would reduce the environmental footprint of fossil fuels and reduce global climate change, and at the same time help sustain global economic prosperity.

Conclusion

Somalia is a country that is coming out of decades of civil war, conflict, and destruction of governance structure and economic infrastructure. But it is a providentially country with varied natural resources such as minerals, renewal and non-renewal energy, etc. The potential discovery of

hydrocarbons could significantly impact the nation's trajectory. Proper governance and capable institutions will play pivotal roles in enhancing Somalia's oil and gas sector. These factors influence the interactions between the government, private sector, market, and local communities. Mismanagement and a lack of transparency could lead to a looming resource curse, presenting environmental, social, and conflict-related risks. Ensuring the integrity of governance within the oil and gas sector in Somalia requires vigilance against fraud, malpractice, and corruption. A crucial question remains: *who will take the lead in preserving the integrity of good governance in Somalia's oil and gas sector*?

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