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ABSTRACT

of the dissertation for the degree of Doctor of Philosophy

**THE ECONOMIC- GEOGRAPHICAL PROBLEMS OF THE
OIL INDUSTRY DEVELOPMENT IN SOUTHERN SUDAN**

Specialty: 5401.01 - Economic geography

Field of Science: Geography

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Baku- 2025

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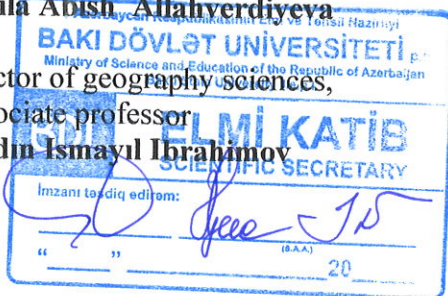
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GENERAL CHARACTERISTICS OF THE WORK

Actuality of the research: Sudan is one of the richest countries in Africa in oil. There are a few researchers who have been interested in studying the characteristics of the development of the oil industry, and most of these studies focus on analyzing the purely economic and technical aspects of the oil industry. At the same time, no studies have been conducted on the geographical distribution of the oil industry in Sudan. Therefore, the importance of this study can be considered because it is devoted to the geographical aspects of the development of the oil industry in Sudan and because it is the first study in this field.

The role of this industry in the economic and social development and the reflection on the ecological and political aspects of Sudan, for this purpose, this study is based on the literature and previous studies conducted by researchers in this field. The study also addressed about the experience of many countries in the field of oil industry development of Azerbaijan because Azerbaijan has a long history and rich experience in this field, which has led to a renaissance of comprehensive development in the economic and social fields. aspects...etc. and to what extent this experience can be benefited in the development of the oil industry in Sudan.

The plight of Sudan in the development of the oil industry was doubled in 2011, when South Sudan Republic seceded from Sudan, it became an independent country, and as a result, Sudan lost 75% of its oil production, which negatively affected the dynamics of oil production. The development of the oil industry in Sudan has brought many economic, social, political, and Ecological problems to the fore. in this research we will discuss and answering the questions raised about the geographical problems of the development of the oil industry in Sudan.

The degree of scientific elaboration of the problem: This research will inevitably enrich further discussions in its handling of the Sudanese experience in the oil industry and the problems it faces. The relationship between the oil industry and economic development was also discussed, and it was found that some advanced oil-producing countries have been able to achieve economic growth and

development, and provide social welfare for their people, while some developing oil-producing countries, especially in Africa, have failed to achieve significant economic progress and achieve the required development rates. Rather, oil has transformed from a blessing to a tone for leaders to more complex economic, social, and political conditions.

Various aspects of the research problem in the development of the oil industry are addressed in the works of both Sanders, Judah, , Pereira, Wifa, and Moses n.d, Goffey, Gluyas, and Schofield, Cooper, Considine, Kerr, Goffey, Gluyas, Schofield, Iheukwumere, Moore, Omotayo, Saylor Sharon, Claire, Graham, Abdullah, Siti Nabiha, Shahbuddin and others in list of reference.

The works of foreign and Sudanese scholars are of great importance from a theoretical and practical standpoint to the development of the oil industry and the issues it faces Chingiz Ismayilov, Barry Huynh, Trang ,Ng, Jack,Taga, Raijeli Diacomanolis, Violet, Sugra Humbatova, Suleyman Gasimov, Farid Hajiyev, Harris, Hugh, Yilan, Gülşa, Ciftcioglu, Gokcen, Yihdego, Yohannes, Salem, Hilmi S.Kafui, Bediaku,G.Veljkovic, Zarko, Vincent-Akpu, Ijeoma Favour, Babatunde, Bolaji Benard, Ndimele, Prince Emeka, Thurber, Mark C.Hults, David R, Heller, Patrick R.P, Yassin and Muhyiddin and others in the list of references.

The oil industry and its problems, as well as its role in achieving comprehensive economic and social development and its impact on political stability, along with the high scientific and scientific importance of solving it, determined the topic of the dissertation, its purpose, and main tasks.

The purpose and objectives of dissertation research:

1. Identifying the areas of the main oil production fields in Southern Sudan and their economic importance.
2. Revealing the economic influences of the development of the oil industry within the framework of the economic-geographical problems of the oil industry in Sudan.
3. Identifying the socio-geographical problems of the development of the oil industry in oil production areas.
4. Studying the regional ecological impacts of the industry on the development of the oil industry in production areas.
5. Studying the

political and geopolitical influences of the development of the oil industry on oil production areas. 6. An attempt to anticipate the future and prospects for the development of the oil industry in Sudan.

The object and subject of the research. of this study is the economic-geographical problems of the development of the oil industry within the development of the oil industry in the world. of the research is the geographical- economic problems of the oil industry development in southern Sudan.

The purpose and tasks of the reserach. The main purpose of the study is to analyze the development of the oil industry in Southern Sudan from an economic-geographic point of view. Along with this, there was an evaluation of the economic-geographical contributions of the development of the oil industry in the region and local communities, an examination of its social effects on local communities, and an explanation of the role of the government and its policies in relation to the development of the oil industry. To investigate the effects of oil industry development on the environment, targets for the future development prospects of the oil industry in Sudan have been determined.

Rresearch methods. In this research, quantitative and descriptive methods were used in a mixed manner, in addition to the statistical and analytical methods used in geographical studies. The research used statistics and secondary information provided by the Ministry of Oil and Energy and relevant authorities and Laboratory results were also relied upon during the work of the thesis. The research also used modern technologies such as GPS to determine the target points in the research, ArcGIS 10.5, and RS software, as well as visual observation and conducting interviews, in addition to the questionnaire that was distributed to the research population.

The main provisions of the dissertation defense. The main provisions for defending the thesis include the following:

- Economic-Geographical problems of the oil industry in Southern Sudan its social, economic, ecological, and political context.

- Consider the current state of development of the oil industry in Sudan.

- Aspects of the effects of the development of the oil industry on oil production areas and local communities.
- An attempt to develop a future vision about the prospects and future development of the oil industry in Sudan considering the current situation.

Scientific novelty of the research. This is the first study on the economic- geographical problems of the development of the oil industry in Sudan.

-For the first time, the main fields of oil industry production in Sudan and their economic importance were identified. The regional socio-economic problems of the development of the oil industry in Sudan were identified for the first time.

-For the first time, an ecological map was created describing the state of vegetation in oil production areas.

-For the first time, reference is made to the geopolitical and political impacts of the development of the oil industry on the geography of oil production areas.

-This is the first study to develop scenarios about the prospects and future of the oil industry in Sudan.

Theoretical and practical significance of the research. In its theoretical and methodological framework, this research relied on books and research that dealt with the development of the oil industry in the world and the leading countries in the field of the oil industry, such as the United States of America, Norway, and Azerbaijan. For example, the book *Oil Sparks in the Amazon: Local Conflicts, Indigenous Peoples, and Natural Resources* by Patricia Vasquez A. published by the University of Georgia (2014), in the United States, as well as the book *Oil and Gas in Africa* published by the African Development Bank and the African Union (2009).

The research also adopted a group of research, including, for example, Rebecca Lindsay's (2020) study *Capitalist Oil: Industry and Society in Baku, Azerbaijan, 1870 to the Present*, published at Central Washington University, United States of America. And a study on oil production in South Sudan: *Making it win-win*, by Bliss Matthew (2014). And another research related to this research.

The thesis is full of provisions and conclusions that may be useful to the government of Sudan, companies operating in the oil sector, as well as human rights civil society organizations, in addition to local communities located in oil production areas. The thesis materials may be of benefit to research centers, studies that are concerned with economic, social, ecological, and political problems for Natural Resources, especially the oil industry.

Approbation and application: The results of the thesis research were adopted at Azerbaijan and international in 5 scientific conferences including:

1. "International congress on social policy and international scientific research-ii, May 1, 2021, Samsun, Turkey.

2. "International conference on contemporary science research-vii, organized by the Arab university of Beirut 3-4 March 2022" organized by the Arab university of Beirut. Labuan.

3. International Scientific Research Conference, Dedicated to the 30th Anniversary of Baku Eurasia University, April 28, 2022, Baku, Azerbaijan.

4. International conference "Hoca Ahmat Yassavi international congress-vii scientific research" organized by Mingachevir state university, February 24-25, 2023, Mingachevir, Azerbaijan.

5. A 2nd international congress on innovation technologies & engineering organized by Ege university, Tashkent institute of chemical technology, Karakalpak state university, Tashkent state pedagogical university and Iksad institute, June 12-13, 2023 / Izmir, Türkiye.

9th directly published scientific papers on the research topic, including 2 articles in indexed journal publications Scopus and others.

Name of the company where the dissertation research is done. Baku State University, Faculty of Geography, Department of Economic & Social Geography is where the dissertation was finished.

Personal participation of the author: Conducting research, analysis and summarization of obtained results in the dissertation work was performed by the author.

Organization where the dissertation was performed. The dissertation work was carried out at Baku State University, Faculty of Geography, Department of Economic and Social Geography.

Volume and structure of the dissertation: Dissertation thesis consists of introduction, three chapters, conclusion, list of used literature and appendices. The main text of the thesis is 165 pages, consists of 10 maps, additional 36 tables and 16 figures.

Chapter I (45 pages, 71,493 characters) presents the theoretical basis and methodological approaches of oil industry development.

Chapter II (77 pages, 72,544 characters) defines the economic-geographical problems of oil industry development in southern Sudan.

Chapter III (10 pages, 14,694 characters) This Chapter III discussed the future and development prospects of the oil industry in Sudan based on the current situation of the development of the oil industry in Sudan.

THE CONTENT OF THE WORK

Chapter I. Theoretical and methodology approaches of the oil industry development.

The section 1.1 highlights some global experiences in the development of the industry, especially the leading countries in the industry such as the United States, Britain, and Azerbaijan. The part also reviews some of the experiences of African countries like Sudan in the east, north, south, and west of the continent, such as Nigeria, Libya, and others, in the development of the oil industry.

The section 1.2 and 1.3 deals with the relationship between economic development and the development of the oil industry, as well as the relationship of social change to the development of the oil industry, in addition to the theory of social conflict and how it can help explain the conflict resulting from the development of Sudan's industry between stakeholders.

The section 1.5 discusses the methodological methods that are used in this research. Both quantitative and qualitative methods were adopted, which scholars identified to discuss the geographical problems of the development of the oil industry in Sudan. Methods of observation, interviews, and questionnaires were also developed

during the field survey of the study area. This is in addition to documents and statistical records from entities related to the oil industry in Sudan.

Chapter II. the economic-geographical problems of the oil industry development in southern Sudan. General background:

Sudan is in the northeastern part of Africa between the 12.8628 latitude northern equator and 30.2176 E longitude. The country occupies the middle part between Africa and the Arab World which. Such a location distinguishes Sudan with a unique characteristic considering it the main passage between north and south of Africa. Sudan also was the main passage for the pilgrim and trade convoys that forward from the east of Africa to the Holy Lands until the mid of the current century.

Total area of the Sudan is (about 1.882.000 million km square) which makes it one of the largest African countries and it comes sixteenth among the largest countries of the world. Sudan is the third largest Arab country and the second African's,

The climate in Sudan is hot, tropical, semi-arid. Average annual temperatures in Sudan range between 26 and 32 degrees, and summer temperatures in the north often exceed 43 degrees Celsius. Rainfall in Sudan falls from June to October, and rainfall rates range between 200 mm and 700 mm annually. Some southern regions see more than 1,500 mm annually. Most precipitation falls during the rainy season from March to October, with the greatest concentration between June and September.

Sudan is the second largest country in Africa after Algeria. According to the latest statistics, Sudan's population is estimated at about 45 million people, with youth making up 46% of the population.

This large area gave an advantage in the diversity of the climate and thus made it suitable for growing many crops and fruits. This made agriculture the primary economic activity in Sudan, with more than 60% of the population relying on agriculture, while industry constitutes only 8% of Sudan's economic activity including the oil industry.

Oil industry development in Sudan: Sudan like other oil countries, its oil industry has gone through several stages that shaped its oil history since the post-independence period in 1956. The most important characteristic of Sudan’s oil history is instability and continuity, because of political problems and Instability at the same time. The most important stages of the development of the oil industry in Sudan can be referred to as follows:

Table 1. Brief history of the oil industry development in Sudan.

Period:	The most important events
1959-1983, first period.	The first beginnings of oil exploration in Sudan and the entry of foreign companies ((AGIP, Total, Chevron.) and their obtaining concession rights for oil exploration on the Red Sea coast.
1983–1998: Exploration in the internal basins.	Expanding the scope of exploration and prospecting in the interior basins away from the Red Sea coast (Muglad, Malut Basins...etc) and finding some encouraging oil reserves.
1999-2004 First Reinforcement.	The entry of Asian oil companies (GNPOC, GPC) and national companies to invest (Sudapet) in the oil sector and then the beginning of oil production and export for commercial purposes.
2005-present, CPA and after the secession of the State of South Sudan.	The growth in the volume of production continued, reaching its highest rates in 2008, and with it coincided with the expansion of exploration and drilling operations in new blocks. However, this did not continue for a long period, as South Sudan separated from Sudan, and 75% of oil production went to the nascent state, beginning the period of major decline in production Oil to last up to the present.

Dynamics of oil production in Sudan The volume of oil production in barrels since the first oil production in Sudan in the year 1999, and through historical tracking of production we find that it continued to rise until it reached its peak in the year 2011 with the production of about 168.8 million barrels per year, then it began to decline rapidly because of the secession of South Sudan. Which led to a decrease in production by 75%, according to a report by the Ministry of Energy and Mining at the time. The decline continued until it reached less than 21.2 million barrels per year in 2022, and the oil sector is still suffering to this day from deteriorating production, especially after the political change that occurred in Sudan with the fall of Al-Bashir. The regime and its subsequent political, economic, and geopolitical events are all named in the situation he hopes for. The authorities responsible for the oil industry in Sudan want it to disappear soon, and for this vital sector in the country's economy to revive.



Chart 1. Total production per year (million/barrels).

Study Area: The study area is located between latitudes 11°20'0" to 11°40'0"0" N and longitudes 28°10'0" to 28°40'0" E. The area in general is of a flat topography, with elevation ranging between 502m to 690m and a slope of 0 to 24 degrees. The area is dissected by many surface-water courses (khors and wadis) in a dendritic pattern. The general topography of the project site is a gentle hilly land. The site elevation is about 509.05 to 511.1m above sea level.

The climate of the region is tropical and semi-arid. Temperatures range from 20 to 45 degrees. It rains from late May to October, and the amount of rain ranges from 400 to 1,200 mm per year.

Due to the absence of official statistics, the population of the region is estimated at approximately 10 million distributed in Rural settlements, some of whom are nomads. The region is characterized by gender and cultural diversity, as it is inhabited by a group of tribes. The Misseriya tribes constitute the main group in the region, and agriculture and grazing constitute the main activities of these local communities.

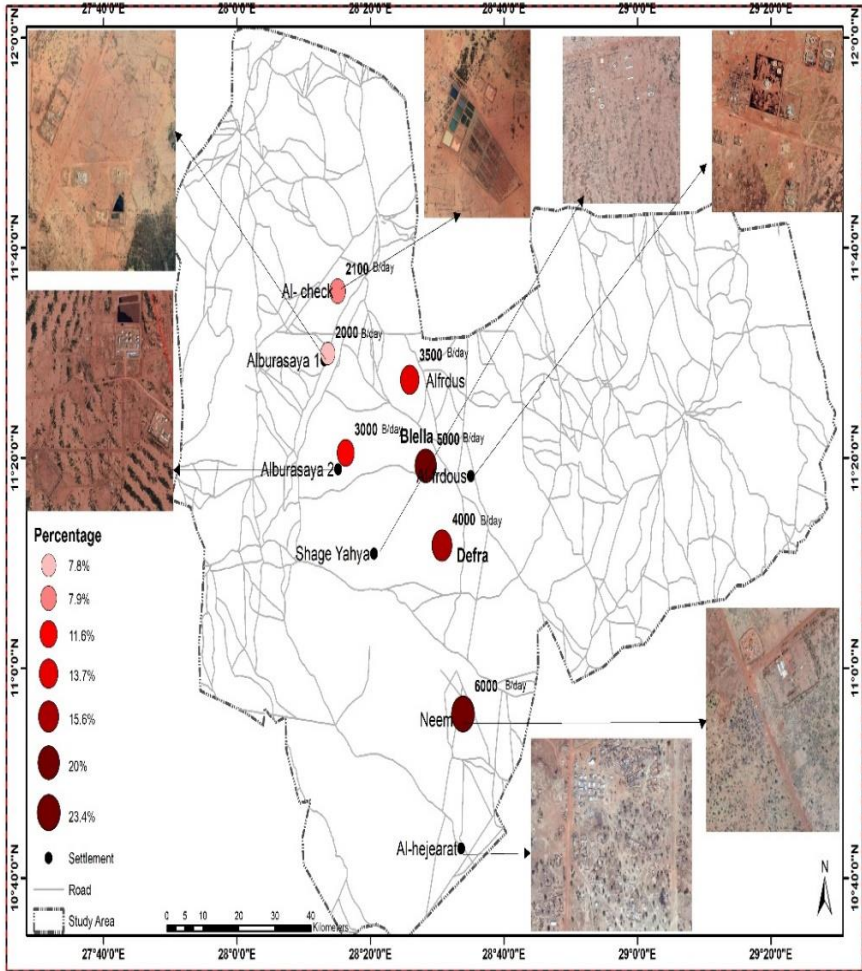
In the study, seven oil fields were identified, as shown on the map, to conduct the applied study on them. They include the fields of Defra, Al-Bersayi 1, Al-Bersayi 2, Nim, Al-Firdus, Shage Yaha and Al-Jeck.

The Economic-Geographical Problems of The Oil Industry Development in Southern Sudan.

Socio-geographical problems of the development of the oil industry in oil production areas: The social problems arising from the development of the oil industry include several elements that can be discussed. For example, the settlement of people around oil fields and their distribution, migration to and from villages surrounding oil fields, crimes that occur as a result of the diversity of the population composition, etc. The results of the economic-geographical problems of the development of the oil industry in the social context are presented in the form of figures and graphs.

Features of settlement in oil field areas.

The following map shows the areas of population settlement around the oil fields in the area. Al-Hujeerat, Al-Barsay 1, Al-Barsay2, Al-Jeck and Nim villages attract attention as ancient settlements. Newly operating oil companies have ensured the relocation of residents due to the fact that their residences are very close to oil fields (Shaq settlement and Yahya Al-Firdous settlement).



Map 1. The settlements in the oil fields Areas.

The map also shows the specific weight of the seven fields according to their daily oil production. The Neem field is the most productive field with a production of 6,000 bpd, while the Al-Jik and Barsai 1 fields are the least productive fields with a production of 2000 and 2.100 bpd.

Through this map, it is possible to study and investigate the relationship between human settlements and the locations of oil

fields and to determine the extent to which the fields affect settlements and the environment.

The economic influences of the development of the oil industry within the framework of economic-geographical problems: The economic importance of oil is highlighted through the role it plays in the development of other economic sectors such as industry, agriculture, and others. This results in effects that extend to the national and local levels. The results on the geographical problems of the development of the oil industry in its economic context were presented in the form of figures and graphs. Here we point out the most important of these figures:

Contribution of the oil industry to support the Sudanese exports and revenues. Estimates indicate that the volume of foreign and national investment in the oil sector in Sudan in the period from 2012 to 2018 amounted to \$4.5 billion, but it declined to \$450 million in the year 2019 because of political unrest and a decline in oil production in the country. This volume of investment is very small, therefore. It was compared to other countries, such as Azerbaijan, which invested more than 20 billion in the period from 2015 to 2019 in the oil and gas sector.

Sudan obtained oil revenues in the period from 2012 to 2018, estimated at about 8.9 billion dollars, and they declined to less than a billion dollars in the year 2019 after a decline in investment, followed by political turmoil and conflicts in the oil production areas.

Most of these oil revenues go to support the sector because of the unrest in the country, while less than 2% goes to support health and education, and 3% goes to support the agricultural and industrial sector. It is expected that these revenues will decline further in the next five years, which will reflect negatively on these sectors and the future of economic development in the country Sudan.

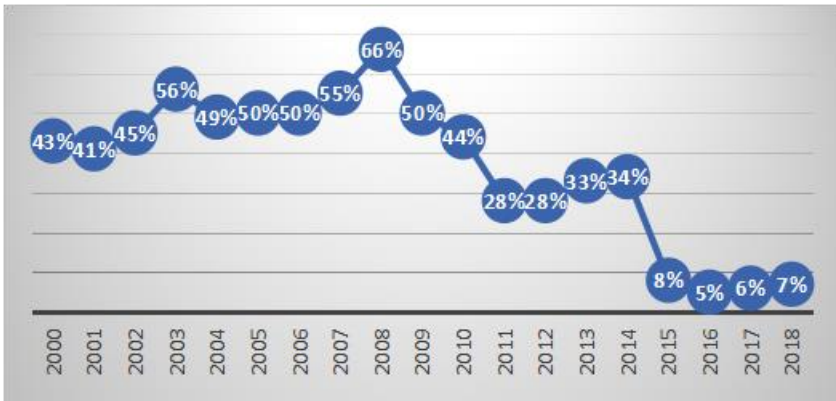


Chart 2. Contribution of oil to the state’s general budget.

The figure above shows the contribution of oil to the general budget of the Sudanese government, and oil played a role in the gross domestic product in Sudan in the first decade of the third millennium, and the government became clearly dependent on it to support the general budget, as we found that the contribution of oil has reached more than 60% In 2008, however, we found that this contribution began to decline rapidly until it reached the lowest 10% in the last three years.

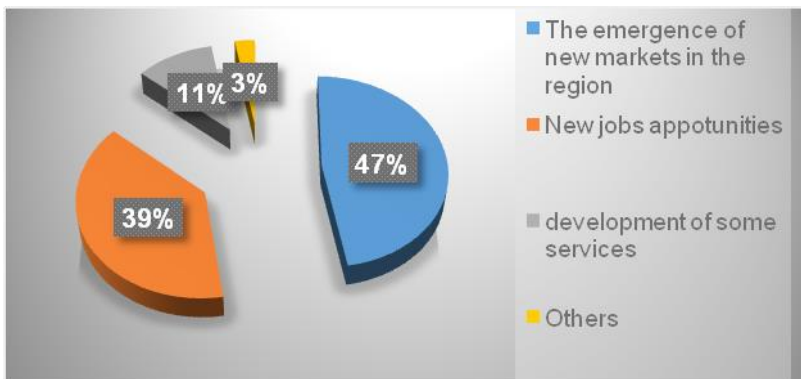
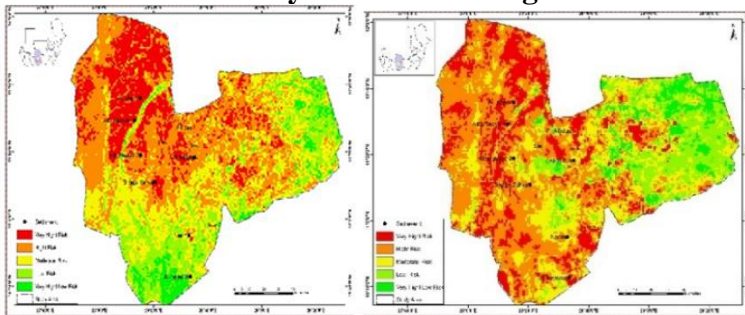


Chart 3. Influence and contribution of the oil industry to the local Economic.

Chart 3. Based on a field survey of the study area in the year 2022, which included about 380 people from the study population, the result it was found that 47% of the respondents stated that the contribution of oil to the economic development of the region was through the emergence of new markets in the locations of oil fields, while 11% of the respondents saw that the contribution of the oil industry to the development of the region was through the development of some services. Which include communications and other services, while 39% of respondents stated that the economic contribution was through the emergence of new jobs that accompanied the development of the oil industry in oil that did not exist before. As for 3% of respondents, they stated that the economic contribution of the oil industry in the region was through other things represented in the development of other economic sectors.

Regional Ecological impacts of the development of the oil industry on oil production areas: The development of the oil industry in any place has direct and indirect repercussions on the environment, especially in the production areas. Therefore, discussing the ecological problems resulting from the development of the oil industry, such as oil spills, soil, and water pollution, diseases ... etc. The impact of all this on humans and animals is very important. Here we point out the most important of these results as follows:

The oil industry in influences vegetation cover:



Vegetation in 1999

Vegetation cover in 2020

Map 2. Impact of the oil industry development on vegetation cover in study Area.

shows the vegetation cover in the study area during the periods 1999 and 2020 using satellite images. It is possible to notice the changes that occurred in the vegetation cover during these periods, as shown by the clear influence of the oil industry on the vegetation cover in the region, taking into account the factors Other factors that led to a decline in the area of vegetation, such as drought and non-oil human activities, except that the oil industry is the main activity since the area covered by the satellite images is designated for oil exploration. Through these maps, the villages around the oil production areas show the processes of vegetation deterioration, especially in the villages of Al-Jick and Barsiya, and to a lesser extent in the villages of Nim and Al-Hajeerat.

Table 2. Effects of the oil industry on air quality in the study area.

Work activity	Aspects	Consequences	Risk Rate
Combustion processes	NO2 emission	Causing respiratory problems reduce immunity to lung infections. Acid rain harms sensitive ecosystems such as lakes and forests	Low
Drilling, production, and fermentation process	CH4 emission	Reduce the amount of oxygen in air. contribute to global warming	Moderate
Drilling process	H2S emission	Irritate eyes, nose, throat, and respiratory system. Loss the ability of smell	Low
Vehicles movement and diesel generators	PM10	It may cause, irritation of the eyes, coughing, and sneezing and asthma attacks. Damage plants and trees. Black smoke and acid smut	Moderate
	PM2.5	significantly increased not only the chances of cardiopulmonary problems but also the mortality of lung cancers Damage plants and trees.	Moderate

The political and geopolitical influences of the development of the oil industry in production areas.: The oil industry is linked to the political aspect through the conflict of interests between the local community, the oil fields, and the central government, as well as the oil companies operating in this sector. Therefore, it produces problems with multiple dimensions that can be discussed in several elements. Here we point out the most important of these results, which were presented in graphical form as follows:

Political and social conflict in the oil fields Areas.

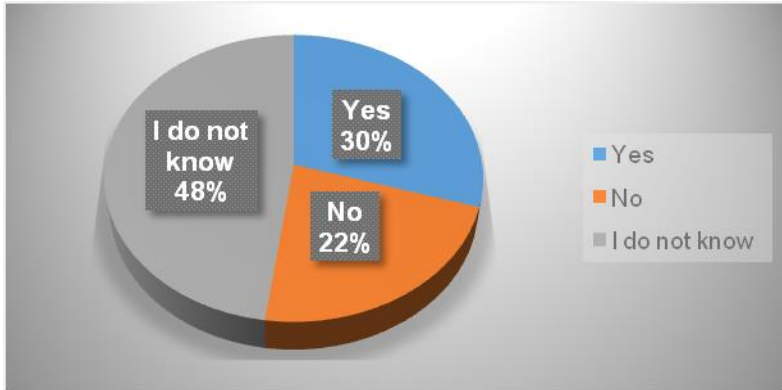


Chart 4. Effects of the oil industry on the ethnic and political conflicts in the region.

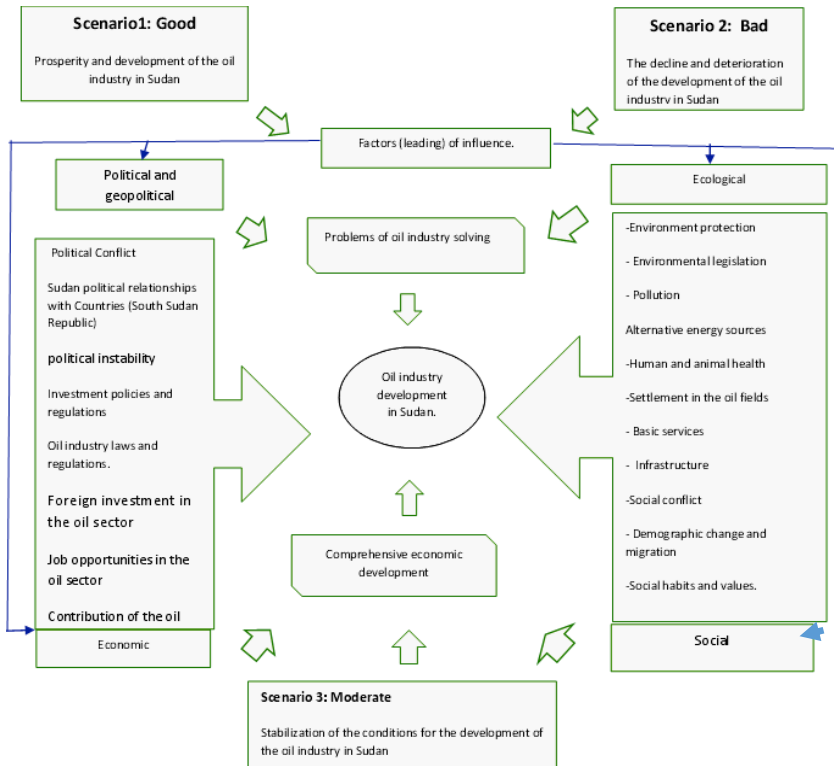
Chart 4. Based on a field survey of the study area in the year 2022, which included about 380 people from the study population, the result it was found that 48% of the respondents do not know if the oil industry in the region has led to an increase in the intensity of political and ethnic conflicts in the production areas, while 30% of the respondents believe that the emergence of the oil industry in the region has led to an increase in the extent of ethnic and political conflicts. 22% of the respondents indicated that the oil industry did not have a clear impact in increasing the intensity of political and ethnic conflicts in the region.

Chapter III: the prospects for the development of the oil industry in Sudan. This chapter III dealt with the future and prospects for the development of the oil industry in Sudan, based on the current situation of the development of the oil industry in Sudan, which was dealt with in the second chapter of this research through analysis and discussion. Through three scenarios, the study developed three scenarios about the future of the development of the oil industry in Sudan that could occur, and which are based on in its light, the state of development of the oil industry in Sudan can be read, at least in the short and medium term. Whereas the first scenario is somewhat more optimistic, which is that the oil industry will witness prosperity and development by overcoming the various problems facing the development of oil in Sudan. while the second

scenario is more pessimistic about the future development of the oil industry, as a kind of uncertainty and exacerbation of the problems of the development of the oil industry in Sudan is expected, through the decline and deterioration of the oil industry in various aspects.

As for the third scenario, which is moderate, it expects stability and continuity for the current situation in the development of the oil industry in Sudan without any significant changes, whether negative or positive.

Diagram 1. Model scenarios for the future and prospects for the development of the oil industry in Sudan.



CONCLUSIONS

1. Based on the research, the geography of the main oil fields in the studied area was determined and a map-scheme reflecting this was prepared. The economic importance of these deposits is indicated by their specific weight in total production.
2. The impact of the development of the oil industry on the improvement of social services to the population has been studied. It has become clear that the services sector has a small contribution through social responsibility programs of oil companies.
3. The economic effects of the development of the oil industry are defined within the framework of the geographical problems of the oil industry in Sudan. The study found that during peak years of oil production, foreign financial flows supported 66% of the budget, but that this effect has decreased due to the secession of South Sudan. At the local level, the impact on the economic situation was manifested in the creation of new markets near the oil fields, as well as in the provision of jobs for residents to work in the oil fields.
4. For the first time, this research has been reflected in a map-scheme depicting the change and condition of vegetation in oil-producing areas based on satellite images for the years 1999 and 2020.
5. Although soil samples were analyzed in the laboratory, the study found low to moderate levels of sulfur hydrocarbon contamination at oil production sites, and despite the breakdown of these toxic petroleum materials, there remains a threat of adverse effects on elements of the natural environment over time.
6. The political and geopolitical effects of the development of the oil industry in Sudan on oil production areas have been determined. The study found that the discovery of oil in the region has led to increased conflict and tension between residents and the country.
7. The study showed the importance of stabilizing the political and geopolitical situation in both Sudan and South Sudan and the

impact of all this on the development of the oil industry of the two countries, because both countries use oil infrastructure, especially the pipeline that transports oil to export ports.

8. Regarding the prospects for the future development of the oil industry in Sudan, the study identified three scenarios towards which the development of the oil industry in Sudan could be directed. The first scenario expects prosperity and development in the oil industry in Sudan, which is a good scenario. The second scenario expects deterioration and declines in the development of the oil industry in Sudan, which is the bad scenario. The third scenario expects the continuation and stability of the conditions for the development of the oil industry and a clear role of change, whether for better or for worse, which is the moderate scenario. However, this study believes that the second scenario is the most realistic to occur, at least during the next five years, in light of the political instability and current war in Sudan, which affects the oil infrastructure and hinders production and export operations and even foreign direct investment in the oil sector.

Recommendations:

Based on the findings and the information learned from the literature, it is recommended that steps be taken to address the challenges that have been identified:

1. It became clear from the results of the study that there was a defect that led to the inability of the oil industry to solve social problems and bring about the desired social development, especially in oil production areas. Therefore, this study suggests that a financial fund be established to undertake social development tasks, especially in oil production areas, by employing a percentage 2% was allocated to production areas from oil revenues in the basic services development program (education, health, water, etc.), in addition to financing small productive projects for families. In addition, this fund must be independent from government agencies so that it is subject to accountability and transparency, and at the same time it can put pressure on the government and oil companies to obtain the

allocated funds away from any influences that may hinder its work and empty it of its tasks for which it was established.

2. There is no doubt that the aim and purpose of oil discovery and production is to bring about economic development at the local and national levels by employing oil revenues in economic development programs to form a solid base upon which the prosperity and development of countries is based. However, the Sudanese experience in the development of the oil industry may have gone the opposite of this trend, as it became clear from... The results of this study are that the Sudanese experience is permeated by many economic problems that resulted from the development of the oil industry, whether at the local or national level. Therefore, this study suggests that a sovereign wealth fund be established, like the Azerbaijani experience, for example, which is concerned with managing oil revenues and investing them in a solution. Current economic problems and contributing to economic development at the national and local levels, especially in oil production areas, through the establishment of productive projects led by the oil industry in the fields of agriculture and livestock. On the other hand, this requires the formulation of strict legislation and regulations that regulate the work of this sovereign fund and that it is subject to oversight, governance, and transparency to achieve its purpose.
3. Environmental impact assessments of the oil industry in the region are weak and face many difficulties in conducting them, as oil waste basins around villages in the region are being destroyed by seasonal rains, and this is considered one of the biggest environmental threats due to the lack of a comprehensive and periodic environmental assessment by the responsible authorities. This research recommends an environmental assessment policy that should be conducted continuously on the oil industry, coupled with monitoring of all exploration operations in the region, with the involvement of the local community and civil society organizations in this. This would protect the environment, especially with the establishment of a specific environmental body for this purpose that includes all Stakeholders.

4. The study recommends the necessity of integration and cooperation in the field of oil policy between Sudan and the state of South Sudan to contribute to the development of the oil sector and its exploitation for the benefit of both countries, in addition to working to sustain the instability of the geopolitical situation in the region.
5. It became clear through this study the necessity of adopting an approach to involve the local community in developing the oil sector through participation in developing and implementing oil policies, especially those related to the management of oil revenues and compensation for residents, to avoid social conflicts and political instability in oil production areas.

The following articles were published according to the content of the dissertation.

1. Adam Abdelsamad, The modern problems of the oil industry in Sudan The annual book of the conference International scientific research congress Samsun, Türkiye, 2021 p.146
2. Adam Abdelsamad, Assessment of International Interests, and their Relationship to political change in Sudan and its Impact on the development of the oil industry in Sudan, The annual book of the conference International Conference on modern sciences research-VII Beirut ArabUniversity, Lebanon, 2022, p.599.
3. Adam Abdelsamad, The consequences of the armed group's attacks on the oil fields in western Kordofan state, Sudan, The annual book of the conference International scientific research congress dedicated to the 30th anniversary of Baku Eurasia University, Baku, Azerbaijan,2022, p.254.
4. Adam Abdelsamad, Social Responsibility of the Oil Companies in Sudan, International Journal of Innovative Science and Research Technology: 8 pp. 2 (8).2023, p.818.
5. Adam Abdelsamad, Comparative characteristics of the legal and regulatory framework of the oil industry in Sudan and Azerbaijan, Russian Law Journal - Q2,2023, pp.173.
6. Adam Abdelsamad,The impacts of the oil industry development on the soil pollution, a case study Flua and jake oil fields in western kordofan state, Sudan, Journal of Survey in Fisheries

Sciences- Q2,2023, 16870-pp.16879.

7. Adam Abdelsamad, Noise Measurement in The Oil Production Areas, A Case Study of Fula, "Gənc tədqiqatçı" elmi-praktiki jurnal, 2024, 47-pp.52.
8. Adam Abdelsamad, Impact of war and political instability on the industry development, the case of Sudan, Coğrafiya və təbii resurslar, Azərbaycan Coğrafiya Cəmiyyətinin əsərləri, 2024, pp.88-95.
9. Adam Abdelsamad, The impacts of the oil industry development on the vegetation cover in the oil production areas in western Kordofan state, Sudan, Azərbaycan Texniki Universiteti, Elmi əsərlər, 2024, pp. 45-50.



The defense of the dissertation will be held on **31 October, 2025** at **11⁰⁰** at the meeting of the Dissertation Council FD 2.51 operating under the Baku State University.

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The dissertation is accessible at the library of Baku State University.

Electron versions of dissertation and its abstract are available on the official website of the Baku State University: bsu.edu.az

Abstract was sent to the required addresses on "29" September 2025.

Signed for print: 25.09.2025
Paper format: 60x84 1/16
Volume: 28082
Number of hard copies: 100