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**Appendix**

**Natural Resources: Case Study of North Africa**

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## **Abstract**

Natural resources are dispersed throughout North Africa. This thesis describes the many forms of natural resources and discusses the economic impact of natural resources in emerging and developed countries, as well as the impact of oil countries on the region. The consequences and aspects of natural resources in North Africa will be highlighted in this case study.

Natural resource scarcity, depletion, and sustainability are all highlighted. Examples of natural resource classifications from throughout the world will be included in this section.

The function of natural resources in North Africa will be the focus of the practical section.

Describes the economic impact of North Africa's developing and developed countries. Economic indicators are used to show information on natural resource production and consumption in North Africa. Following that, highlighting the issues that North Africa faces as a region. Finally, a summary of natural resource impacts across the region.

**Keywords:** Africa, Soil, Timber, Natural gas

## **• Objectives and Methodology**

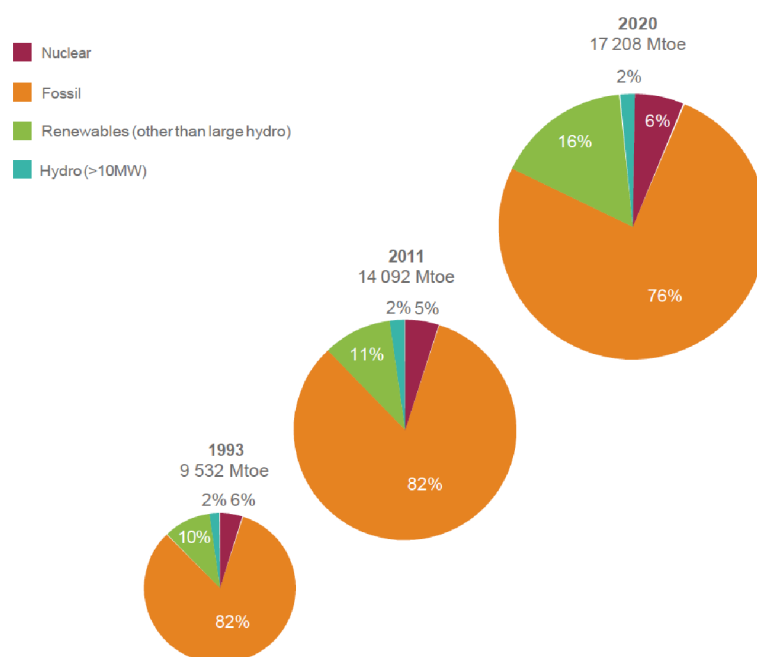
### **▪ Objectives**

This thesis portrays Africa's natural resources in two parts theoretical and practical, mentioning different types of natural resources and their available reserve. describing the effect on economy.

### **▪ Methodology**

Comparative and descriptive methods are used in the thesis focusing on renewable and non-renewable resources in Africa, analyzing the magnitude of the minerals, especially main important ones as soil, timber, and natural gas.

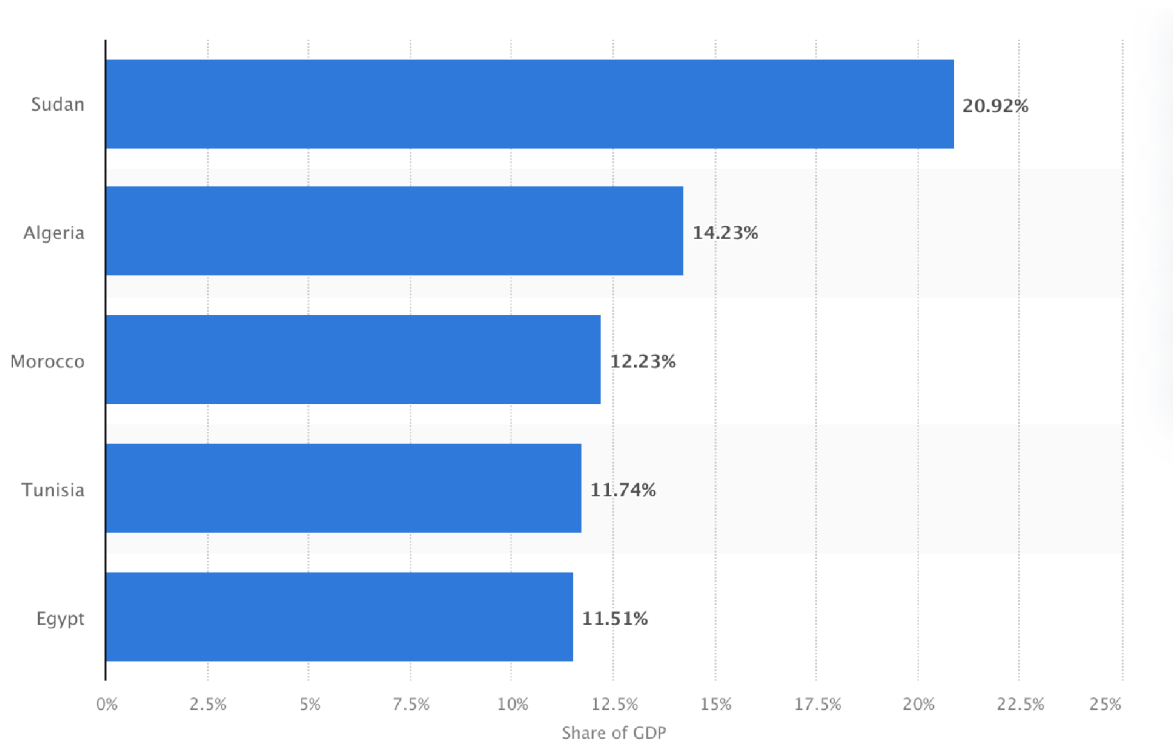
*Figure 1: Total Primary Energy Supply by resource 1993, 2011 and 2020*



*Source: (World Energy Council, 2013)*

- In the figure above, estimation of how by the time the world is shifting to depend on renewable energies little by little, as it is estimated that the reserves of non-renewable energy resources would run out sometime between 2050 and 2150 that's due to the high rate of consumption that is more than that of newly discovered resources.
- The North African countries are confronted with issues, whether they be political, economic, or social. However, in this part, the focus is on the issues faced by resource-rich countries that import labor. The reason for this is that the majority of resource-poor and resource-rich labor abundant populations are confronted with a variety of obstacles that have led to their economic insecurity and unstable growth. Resource-rich labor-importing countries, on the other hand, have experienced consistent economic growth in recent years. Nonetheless, other countries, such as Libya, still reliant on natural resources (specially oil) for general income. The country with the largest reliance on natural resources in the region.

*Figure 2: Contribution of share of agriculture, fishing to the GDP in North Africa, By country (2020)*

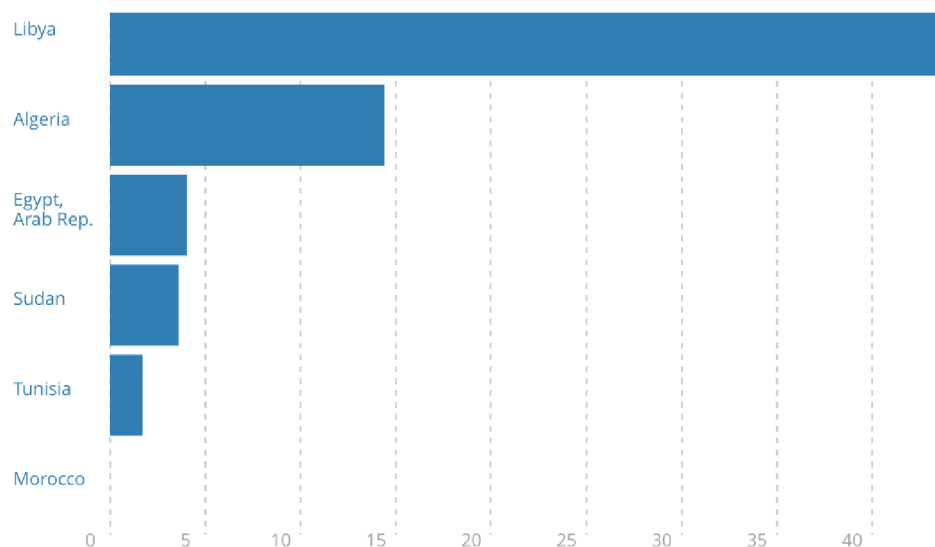


source: <https://www.statista.com/statistics/1193834/agriculture-as-a-share-of-gdp-in-north-africa-by-country/>.

Due to increased temperature, precipitation fluctuation, and population growth, Northern Africa, and the Sahel in particular, are extremely vulnerable to climate change. Land usage and accompanying land cover change, particularly where subsistence farming is practiced, are a crucial relationship between climate and humans in this region. Agriculture has a critical role in the region's economy, even if it only accounts for 13% of the region's GDP. Water is already scarce in the region, and climate change is making it even more difficult to meet the region's agricultural needs.

In the figure above, data presents the contribution of agriculture to the gross domestic product of the North African countries in order, as Sudan has the highest rate of share 20.92% of its GDP, Algeria is the second highest country with 14.32%, Morocco with 12.23% in the fourth place, Tunisia 11.74%, and Egypt comes in the bottom with 11.51%.

Figure 3: Oil rents (% of GDP) - Egypt, Algeria, Libya, Tunisia, Sudan, Morocco



source: <https://data.worldbank.org/indicator/NY.GDP.PETR.RT.ZS?end=2019&locations=EG-DZ-LY-TN-SD-MA&start=2019&view=bar>.

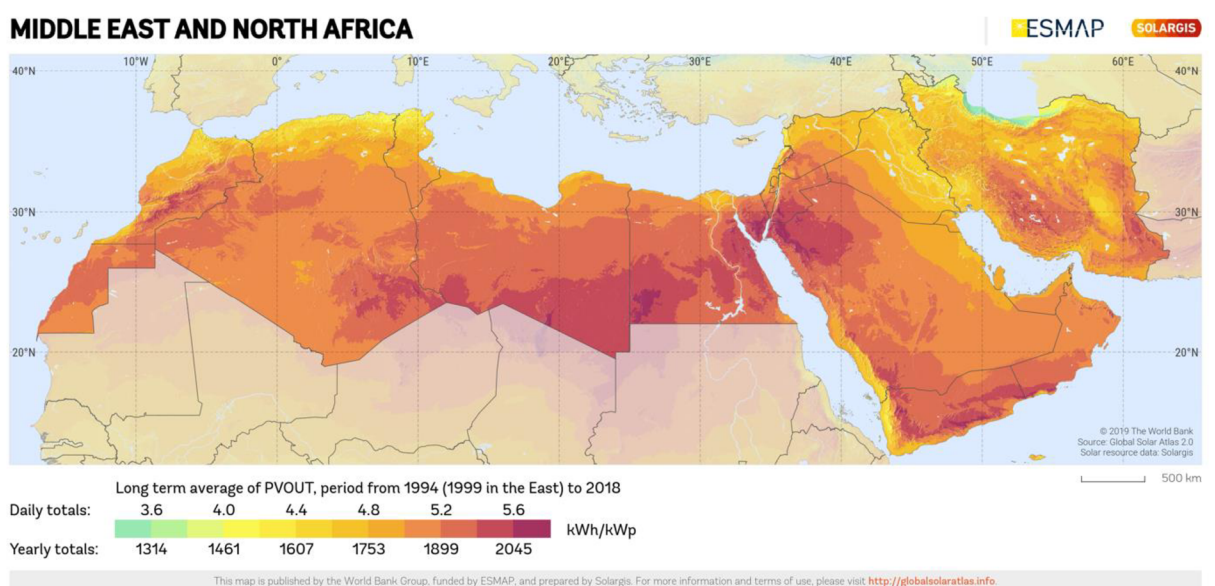
In the figure above, Libya's oil rent represents 43.9% of its GDP in 2019 that's after an increase in the previous years as in 2017 oil's share of the country's GDP was 36.7%. While Algeria's oil's share of GDP in 2019 was 14.4% which had an increase about 2.1% from 2017. Egypt's Oil rents decreased from 2017 as it was 4.2% then to 4% in 2019. 3.6%. Tunisia's Oil's share of its GDP increased by 0.3% from 2017 till 2019.

- **Diversification and Sustainable Growth**

The energy consumption of North African economies has increased faster than that of most other countries, particularly during the 1970s. Energy demand in the region is expected to rise because of continued industrialization, urbanization, and growing living standards. According to OECD figures, North Africa's aggregate energy demand would grow at a rate far above the global average, at over 3% per year from 2010 to 2030, with electricity demand expanding at around 6% per year.

Fortunately, several resource-rich countries have begun to diversify their income streams in order to keep their economies from overheating. In some situations, these efforts are directed toward the energy industry, while in others, they are directed toward investment. Only 411 megawatts of renewable energy are produced in Algeria. Officials anticipate that the new plan would re-energize efforts to bring more than 1 gigawatt of solar energy online by the end of the year and another 13 gigawatts by 2030. For example, Egypt aims to diversify its clean energy resources by 2025, and to generate 40% of its electricity from solar and wind by 2030. The Egyptian plan to establish the East Mediterranean Gas Forum (EMGF) as a platform for efficient cooperation among the region's countries to maximize the economic benefits from natural gas resources was mentioned by the minister, which intends to diversify exports. Invest in renewable energy to expand the energy sector.

*Figure 4: GIS Solar Radiation in North Africa 2020*



source: <https://solargis.com/maps-and-gis-data/download/middle-east-and-north-africa>.

## • Conclusion

This indicates a high importance towards diversification of exports to expand other sectors rather than a decline in employment. Countries with abundant resources tend to experience growth volatility due to reliance of one source for income while the price of oil or

natural gas is volatile in the market. Generally, the volatile revenue effects long term financing and future planning. In addition, uncertainty might lead to repel investments internally and externally due to the absence of diversification. However, countries, like Egypt and Algeria, should apply constant changes in the infrastructure and projects to raise investment and create jobs for the growing population. Achieved diversification in exports results in sustainable growth.

As a result, the Middle East, with its unevenly distributed overabundance of resources, comes out on top. Many problems have been faced, and diversification is the key to reviving and prospering this region. By implementing structural reforms for economic diversification and sustainable and inclusive growth, building resilience in post conflict situation, enhancing youth skills, employability, and inclusion, tackling gender inequality, and encouraging regional development, increasing agricultural productivity and food security. Diversification may result in the creation of jobs in previously underserved areas. Other nations in the area should follow Qatar lead in decreasing oil and gas GDP rents. And, after being reliant on phosphate, most of the MENA area, including Morocco, has invested in renewable energy. Therefore, nations will prosper, and employment rates will rise because of sustained growth and a high-quality lifestyle. To decrease the impact of variable resource commodity prices, the economy is shifting from a single-sector to a varied one.

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