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Towards Activating the Policy of Economic Diversification in Algeria

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Abstract:

This study aimed to explore the reality of Algeria's economic diversification strategy by analyzing the most significant indicators of economic diversification and discussing methods to enhance it. The study sought to answer the question: What are the ways to activate the economic diversification policy in Algeria?

The research yielded several findings, with the analysis of economic diversification indicators revealing the weakness of this policy in Algeria, as the country remains heavily reliant on the hydrocarbon sector, particularly in exports. In 2021, non-hydrocarbon exports accounted for only 11.7% of total exports. The study also identified potential ways to activate this strategy in Algeria by investing in the agricultural, tourism, industrial, and renewable energy sectors.

Keywords: Economic diversification, economic diversification indicators, oil, exports diversification
JEL Classification: Q1, Q30

1. Introduction:

Oil is considered one of the most important materials in the global markets, and the economic performance of the oil country, including Algeria, is directly linked to oil prices, as the fluctuations in the prices of this material affect its revenues, as it constitutes the largest part of its exports, which led these economies to think about activating the economic diversification policy away from oil revenues in order to diversify the sources of wealth and distribute it to other sectors, which ensures the relative stability of the state's economy.

The problem of the study:

Algeria, like other oil countries, aims to enhance the role of other sectors in its economy, and in this context we can raise the following problem: What are the ways to activate the economic diversification policy in Algeria?

Research objectives:

This study aims at the following points:

-Addressing concepts about economic diversification;

-Identifying the reality of economic diversification in Algeria and analyzing its indicators;

-Determining ways to activate economic diversification in Algeria.

Research methodology:

We relied on the descriptive approach in order to provide a clear picture of each aspect of the study related to the reality of the economic diversification policy in Algeria and analyzing its most important indicators.

.1The theoretical aspect of economic diversification

The topic of economic diversification has occupied an important position for a long time, as there is no doubt that it is dangerous for the economy of any country to depend on a single or limited source, because any fluctuations in this source will result in serious repercussions on the economy and its overall indicators.

1.1Definition of economic diversification:

-Economic diversification is defined as the process that refers to reliance on an increasing group of items that participate in the formation of output (outputs), and can also be translated in the form of diversification of export markets or diversification of sources of income away from local economic activities (i.e. income from foreign investment), or diversification of sources of public revenues. (Ben Muwaffaq, 2019, p. 24)

-indicated that while some link diversification to production and sources of income, others link it to the structure of commodity exports. Diversification is linked to measures aimed at reducing dependence on a limited number of exported goods whose price and volume change, or are subject to chronic decline; while (Le-Yin Z HANG) expands in proposing that economic diversification is achieved when moving to the stage of strengthening the industrial and agricultural base and creating a production base, which generally includes reducing dependence on the single resource, which means building a sound local economy that tends towards self-sufficiency in more than one sector. (Ben Moufak, 2019, p. 24) - In terms of focusing on the main goal of diversification, it is "reducing dependence on the oil sector and its revenues by developing a non-oil economy, non-oil exports and other sources of revenue, while at the same time reducing the role of the public sector and strengthening the role of the private sector in development. (Belama and Ben Abdel Fattah, 2018, p. 332)

.2.1Forms of economic diversification:

The forms of economic diversification can be identified as follows:

-Diversification of foreign trade: Talking about diversification of foreign trade is largely linked to the burden of its sound structure, in its two main aspects (the sound structure of imports The auditory structure of exports (through the auditory diversification study of exports and imports, it is possible to know the extent of dependence on exporting a single commodity by measuring its proportion to total exports and studying the nature of this commodity, is it primary or manufactured? The intensity of this dependence will affect the possibility of continuing the economic development process, and therefore diversifying the structure of exports will be the optimal solution for its continuation, and here the process of diversifying exports means, first of all, expanding its types in order to supply foreign markets with raw materials only, but also with products of their processing, transformation and manufacture, and then with semi-finished industries from local production. (Orisi, 2018, p. 693)

-Diversification of markets: Equally important, over-reliance on one or a very few markets has clear disadvantages, as a decline in demand can adversely affect the economy than if there were a more diversified mix or instead more stable demand in other markets. Moreover, there are external economies to be gained through access to new markets with new products that enable a country to achieve industrial competitiveness. For example, technological skills and the establishment of marketing channels are needed to open up potential export outlets, and specialized skills and start-ups need support to enter new product lines. Overall, market diversification reduces exposure to external shocks, and slows down the velocity of demand and new competition. Moreover, exporting to more than one country is an indicator of a country’s ability to compete internationally. (Bahi and Rawaina, 2016, p. 136)

.3.1Indicators of economic diversification:

There are several indicators that show us the extent of economic diversification in any country, the most important of which are: (Daif and Azouz, 2018, p. 23)

-The rate and degree of structural change, as indicated by the percentage of the contribution of different sectors to the gross domestic product. In addition to the increase or decrease in the contribution of these sectors over time. It is also useful to measure the real growth rates of the gross domestic product by sector, whenever data for that are available to us.

-The degree of instability of the gross domestic product, and its relationship to the stability of the oil price. It is understood that diversification is supposed to reduce this instability over time.

-The development of oil and gas revenues as a percentage of total government revenues, because one of the goals of diversification is to reduce dependence on oil revenues. Another useful indicator is the pace of expansion of the non-oil revenue base over time, as this indicates success in developing new sources of non-oil revenues.

-The ratio of non-oil exports to total exports, and the components of non-oil exports. In general, the steady rise in non-oil exports indicates increasing economic diversification. However, short-term changes in this measure may be misleading, as they may result from fluctuations in oil prices and exports.

-The development of total employment as a whole by sector. It is clear that this measure should reflect and reinforce changes in the sectoral composition of GDP.

-Change in the relative contribution of the public and private sectors to the GDP, which is an important indicator because economic diversification implicitly means increasing the contribution of the private sector to the overall economic activity.

-Productivity measures, as these measures can be applied especially to various activities in the private sector, to assess the rate of its development and modernization.

4.1 Pillars of economic diversification:

In order to ensure the success and sustainability of economic diversification, some determinants and pillars must be taken into account, which are shown below: (Masoudi, 2018, p. 228)

-Material aspects: investment and human capital;

-Macroeconomic indicators: inflation rate, exchange rate, employment, GDP;

-Public policies: i.e. programs and policies related to the financial, industrial and commercial aspects;

-The economic environment and general climate: especially governance, investment climate, general financial, political and security conditions;

-Access to markets: usually refers to the extent of commercial and financial openness.

5.1 Reasons for the necessity of economic diversification:

Various experiences have confirmed the necessity of not relying primarily on oil production and export, for many reasons and justifications, the most important of which are: (Hafez and Hafez, 2017, p. 431)

-Oil is a natural resource that is exhaustible, and therefore it is necessary to rely on alternative non-exhaustive economic sources to achieve sustainable development, in addition to the volatility of its prices, their instability and their dependence on the conditions of international markets;

-Relying on oil revenues as a exhaustible economic resource is fraught with great risks, as a country does not depend on its revenues from taxes, the agricultural sector does not have the elements of sustainability, the industry does not depend on productive foundations, and no promising economic sectors appear on the horizon;

-Another important reason that drives diversification is the intensity of competition, especially with the emergence of new competitors, as well as lagging behind technological developments. It is difficult for a country to protect itself from new competitors or new technologies if it remains on the margins of technological progress or in the absence of any economic diversification;

-Reducing the percentage of economic risks and the ability to deal with external crises and shocks, such as fluctuations in the prices of raw materials such as oil, or drought for agricultural and food materials, or the deterioration of economic activity in the markets;

Decreasing the financial reserves of these resources.

The state's objectives in adopting the economic diversification policy are summarized as follows: (Houtia, 2018, p. 8)

-Avoiding fluctuations in the prices of a single resource (oil, for example) and thus public revenues and expenditures;

-Ensuring the continuation of the pace of sustainable development and enhancing the economy's ability to rely on itself;

-Achieving self-sufficiency in goods and services;

-Increasing exports and reducing imports and maintaining a high standard of living for citizens.

The most important benefits of economic diversification are as follows: (Houtia, 2018, p. 8(

-It allows greater economic stability when reliance is placed on a wide range of activities that make the national economy less vulnerable to the negative effects of business cycles and shocks resulting from external causes;

-It contributes to the transmission of positive effects between various economic activities in the form of large-scale economies;

-The wide application of technologies and the spread of advanced organizational and administrative skills;

-Adding greater market flexibility to production factors, and strengthening the forward and backward links and interconnections of economic sectors;

-Contributing to increasing the competitive capabilities of national economies and giving them greater flexibility to adapt to economic crises.

.2Economic diversification in Algeria

Algeria seeks to reduce its oil dependency by reducing the dependence of its exports on the hydrocarbon sector and thus diversifying wealth incomes by following a policy of economic diversification.

2.1 Analysis of economic diversification indicators in Algeria:

We discussed the most important indicators of economic diversification in Algeria as follows:

A. Contribution of sectors to the formation of the gross domestic product:

This indicator shows the economic sectors that contribute to the formation of the added value of the gross domestic product, which is shown in the following table:

Table (1): Contribution of sectors to GDP (2010-2017) (%)

Years	administration services	Services outside public administration Public	Construction and public works	Industry Non-hydrocarbons	Agriculture	Hydrocarbons
2010	13.2	21.6	10.5	5.1	8.5	34.9
2011	16.3	20.1	9.1	4.6	8.1	35.9
2012	16.3	20.4	9.2	4.5	8.8	34.2
2013	15.3	23.1	9.8	4.6	9.9	29.8
2014	16.4	25.1	10.8	5	10.6	27

2015	17.4	27.2	11.5	5.4	11.6	18.8
2016	17.3	27.8	11.9	5.6	12.3	17.4
2017	16.3	27.4	11.7	5.5	11.8	19.6
2018	14.7	26.8	11.5	5.4	11.8	22.2
2019	15.5	27	12.2	5.7	12.3	19.5
2020	18.3	26.2	13	6.3	14.1	14
2021	15.8	24.4	12.3	5.8	13	21.5

Source: Prepared by the researcher based on reports from the Bank of Algeria for different years

We note from the table the decline in the contribution of the hydrocarbon sector to the gross domestic product from 34.9% in 2010 to 14% in 2020, then rose again in 2021 to 21.5%, as with the economic recovery, global demand for oil rebounded strongly to approach pre-pandemic levels. In this context, the production and export of hydrocarbons to the national economy witnessed a clear recovery, as 2021 recorded a strong growth of 10.3% in the hydrocarbon sector in terms of volume, after an unprecedented historical contraction for more than 20 years by 10.2%. The added value of this sector, according to the current value, amounted to 4734.4 billion dinars, i.e. a very significant increase of 83.9% compared to the previous year. This is due to the significant increase in the average price of Algerian crude oil, which rose from $ 42.07 per barrel in 2020 to $ 72.75 per barrel in 2021. (Bank of Algeria, 2021)

In contrast, the total contribution of other sectors to GDP increased, but we can say that the decline in the contribution of hydrocarbons to GDP starting from 2013 was not due to the improvement in the performance of other sectors, but rather due to the decline in oil prices, and the contribution rates of agriculture and industry remained almost stable, which confirms the weakness of these two sectors.

A. Export diversification:

Both the diversification and concentration indicators are among the evidence that reveal the level of economic diversification in any country, and export diversification is of great importance in oil economies that want to reduce their dependence on the oil sector. The following table shows the diversification and concentration indicators of Algerian exports:

Table (2): Diversity Index and Concentration Index for the period 2000-2021

Years	index Concentration	Diversity index	Number of goods
2000	0.515	0.835	101
2001	0.502	0.821	85
2002	0.520	0.836	101
2003	0.541	0.818	105
2004	0.586	0.827	110
2005	0.588	0.812	108
2006	0.602	0.801	108
2007	0.598	0.803	121
2008	0.580	0.762	119
2009	0.554	0.792	106
2010	0.523	0.783	108
2011	0.538	0.720	98
2012	0.540	0.726	98
2013	0.541	0.733	95
2014	0.485	0.745	99
2015	0.485	0.781	91
2016	0.489	0.815	93
2017	0.480	0.790	108
2018	0.483	0.813	121
2019	0.470	0.816	116
2020	0.443	0.845	113
2021	0.498	0.825	108

https://unctadstat.unctad.org/wds/TableViewer/tableView.aspx?ReportId=120
27/02/2023

From the table, we note that the diversity index, considering the number of goods, indicates that the diversity of Algerian exports has not yet reached the acceptable level of diversity, as this ratio ranged between 0.7 and 0.8. We also note that the concentration index ranges between 0.5 and 0.6, which shows that Algerian exports are concentrated in a few goods, as we can say that the Algerian economy is one of the most concentrated and least diversified economies, and this is due to the heavy reliance on the hydrocarbon sector in exports. As the following table shows, the development of

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the percentage of contribution of exports outside the hydrocarbon sector to total exports, as we note that it is a very small percentage, and this is because the Algerian economy depends almost entirely on hydrocarbon exports, but it increased slightly in 2021:

Table (3): Percentage of contribution of exports outside the hydrocarbon sector to total exports 2010-2017

2021	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010	
11.7	8.7	5.9	5.4	4	4.7	4.3	2.7	1.6	1.6	1.7	1.7	**Non-hydrocarbon exports**

Source: Prepared by the researchers based on reports from the Bank of Algeria for various years.

A. Diversification of revenues:

Diversifying the structure of the Algerian economy's revenues is of utmost importance, as it depends entirely on oil revenues, which makes the latter control public expenditures in turn. Here, it was necessary to increase the percentage of non-oil revenues to total government revenues. The following table shows the distribution of Algerian revenues**:**

Table (4): Distribution of government revenues 2010-2021

Years	Non-hydrocarbon revenues	Fuel revenues
2010	33.9	66.1
2011	31.3	68.7
2012	34	66
2013	38.3	61.7
2014	41	59
2015	53.5	46.5
2016	65.1	34.9
2017	64	36
2018	57.7	42.3
2019	59.6	40.4
2020	65.9	34.1
2021	60.3	39.6

Source: Prepared by the researcher based on reports of the Bank of Algeria for various years.

From the table, we note that the percentage of hydrocarbon revenues decreased from 66.1% in 2010 to 39.6% in 2021, a decrease estimated at 26.5% percentage points, which supports that reliance on hydrocarbon revenues has decreased in Algeria, offset by an increase in non-hydrocarbon revenues.

A. Distribution of labor:

One of the important indicators of economic diversification is the distribution of labor across economic sectors, as diversifying production requires diversifying the labor responsible for that production. The following table shows the distribution of the labor force in Algeria as follows:

Table (5): Distribution of employment by economic sector during 2010-2019

2019	2018	2017	2016	2015	2014	2013	2012	2011	2010	years
1083	1067	1102	865	917	899	1141	912	1034	1136	Agriculture
1450	1434	1493	1465	1377	1290	1407	1335	1367	1337	Industry
1890	1774	1847	1895	1776	1826	1791	1663	1595	1886	Construction and Public Works
6857	6726	6417	6620	6524	6224	6449	6260	5603	5377	Transport and Communications, Trade and Services

Source: Prepared by the researcher based on reports from the Bank of Algeria for various years.

We note from the table that there is a distribution of the workforce across various sectors, and the transportation, communications, trade and services sectors account for the largest share of the workforce in the Algerian economy.

2.2 Activating the economic diversification policy in Algeria:

Activating economic diversification in Algeria requires achieving the following methods:

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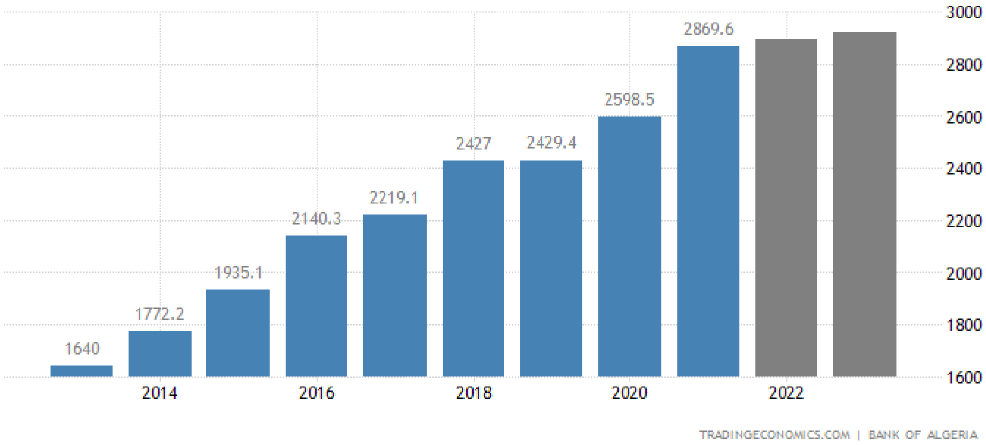
A. Investment in the agricultural sector:

Algeria has many opportunities in the agricultural sector due to its possession of vast fertile agricultural lands with many water resources. Investment in the agricultural sector is considered one of the most important strategies in developing the economy and thus sustainable development. The following graph shows the development of the added value of the agricultural sector for the period 2013-2021, with expectations for its direction for the coming years:

Figure (1): Development of the agricultural sector's contribution to the gross domestic product



https://ar.tradingeconomics.com/algeria/gdp-from-agriculture27/02/2023

We notice through the graphs the increase in the contribution of the agricultural sector to the gross domestic product, which shows the efforts made by the Algerian state to improve the revenues of this sector, and it is expected that the contribution of the agricultural sector to the gross domestic product will continue in the coming years.

The agricultural sector can be promoted through a set of decisions and reforms for the following obstacles: (Issawi, 2016, p. 65)

-Solving the problem of land ownership before implementing any reform in this sector;

-Reforming the banking sector in general and the banks financing the agricultural sector in particular;

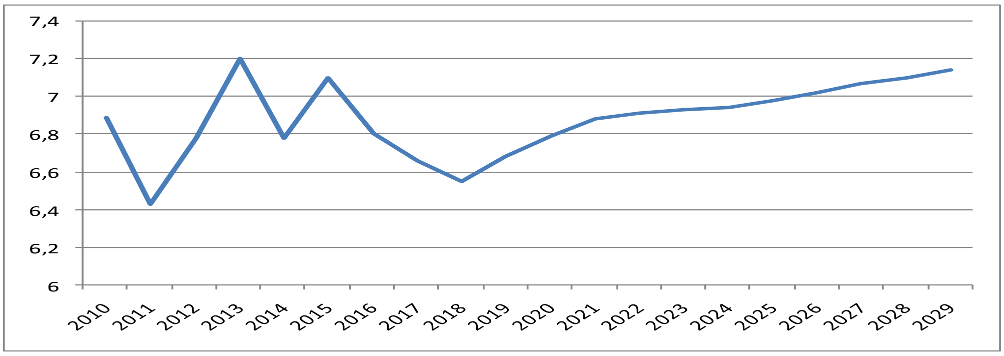
-Encouraging land reclamation in the high plateaus and desert areas;

-Reviewing the duration of the lands granted for exploitation within the framework of concession contracts, by reducing this period and monitoring their exploitation or transferring them to those who serve them;

-Training cadres and research in the agricultural sector.

A. Investment in the tourism sector: The tourism sector plays an important role in the economies of many countries. It is considered one of the most important sources that generate large financial revenues, especially in hard currency. There are many countries in the world, including oil countries, that have found their way to the tourism sector, and have exploited their tourism resources and capabilities in a way that ensures their sustainability and makes them independent of relying on a single source of wealth (Boutalaa and Ben Debish, 2018, p. 306). The tourism capabilities that Algeria abounds with qualify it to be a tourist hub, in terms of tourist archaeological sites and multiple cultures, which makes it necessary to invest in this sector. By 2025, the Ministry of Tourism plans to receive 11 million tourists, which requires a wise strategy to make Algeria a first-class tourist destination. The choice of this period of time was to take enough time to encourage partnerships with those with extensive experience in Algeria and around the world, who want to invest in Algeria in the field of tourism, thanks to the legal arrangements that provide very attractive mechanisms and programs currently in place in our country (Hafez and Haffaz, 2017, p. 449). The following curve shows the contribution of the tourism sector to the GDP and its expected direction for the coming years:

Figure (2): Contribution of the tourism sector to the gross domestic product (%)



We notice through the curve the fluctuation of the contribution of the tourism sector to the GDP during the period 2010-2018, but it is expected that the value of the contribution will increase starting from 2018 until 2029.

Investment in the tourism sector must meet a set of conditions and rules: (Hamidi, 2017, p. 467)

-The existence of clear legislation and regulation governing the various structures and relationships of the sector;

-Developing tourism plans that control and prioritize tourism activities;

-Valuing human resources working in the sector and continuously upgrading them;

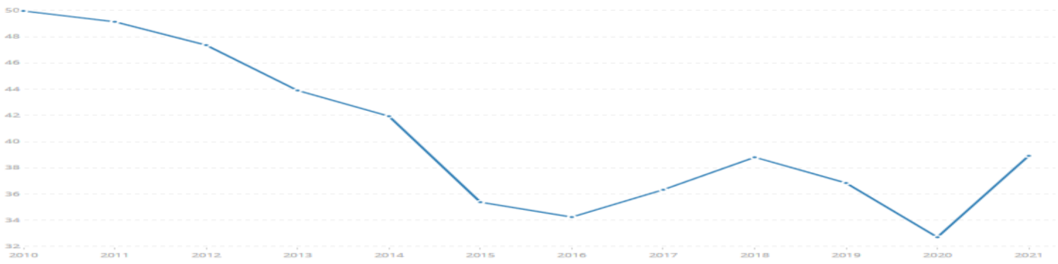
-Establishing standards for managing the tourism sector; in accordance with applicable international standards;

-Establishing a tourism culture among Algerians so that they can absorb the economic effects of the prosperity of the tourism sector and its relationship to the development of the Algerian individual.

A. Investment in the industrial sector:

The industrial sector in Algeria is considered one of the largest untapped sectors, as its contribution to the GDP is very small, and this can be explained through the following curve:

Figure (3): Percentage of added value of the industrial sector 2010-2020 (%)



Source

We note from the curve that the contribution of the industrial sector to the GDP fluctuated during the period 2010-2020, but we notice the beginning of the decline due to the increase in the contribution of other sectors, especially services, but it returned to rise again starting from 2020. In 2021, this sector witnessed a growth in terms of volume of 5.7%, thus exceeding its pre-crisis pace by gaining 9 percentage points compared to 2020, and 7.1 percentage points compared to 2019 (Bank of Algeria, 2021). Therefore, the Algerian authorities must pay more attention to investing in this sector, especially with regard to manufacturing industries, which allow for reducing the value of imports and achieving part of self-sufficiency. A. Investment in renewable energies: Integrating renewable energy into the national energy mix represents a major challenge in order to preserve fossil resources, diversify electricity production branches and contribute to sustainable development. Thanks to the National Renewable Energy Program 2011-2030, these energies are at the heart of the energy and economic policies pursued by Algeria, particularly through the development of solar and wind energy on a large scale, the introduction of biomass branches (waste recovery valorization), thermal and geothermal energy, and the development of solar thermal energy. The capacity of the renewable energy program required to be achieved to meet the needs of the national market during the period 2015-2030 is estimated at 22,000 megawatts, of which 4,500 megawatts will be achieved by 2020. This program will be implemented in two phases: (Ministry of Energy and Mines) - Phase 1 2015 - 2020: This phase will see the achievement of a capacity of 4,010 megawatts, between photovoltaic and wind energy, in addition to 515 megawatts, between biomass, cogeneration, and geothermal energy.

-Phase II 2021-2030: The development of the North-Sahara (Adrar) electrical interconnection will allow the installation of large renewable energy plants in the regions of In Salah, Adrar, Timimoun and Bechar and their integration into the national energy system. By then, solar thermal energy could be economically viable. Algeria's strategy in this area aims to develop a real renewable energy industry combined with a training and knowledge development program, which will ultimately allow the employment of local Algerian engineers, especially in the field of engineering and project management. The renewable energy program, meeting the electricity needs of the national market, will provide several thousand direct and indirect jobs. This program is distributed by technological sectors as follows:

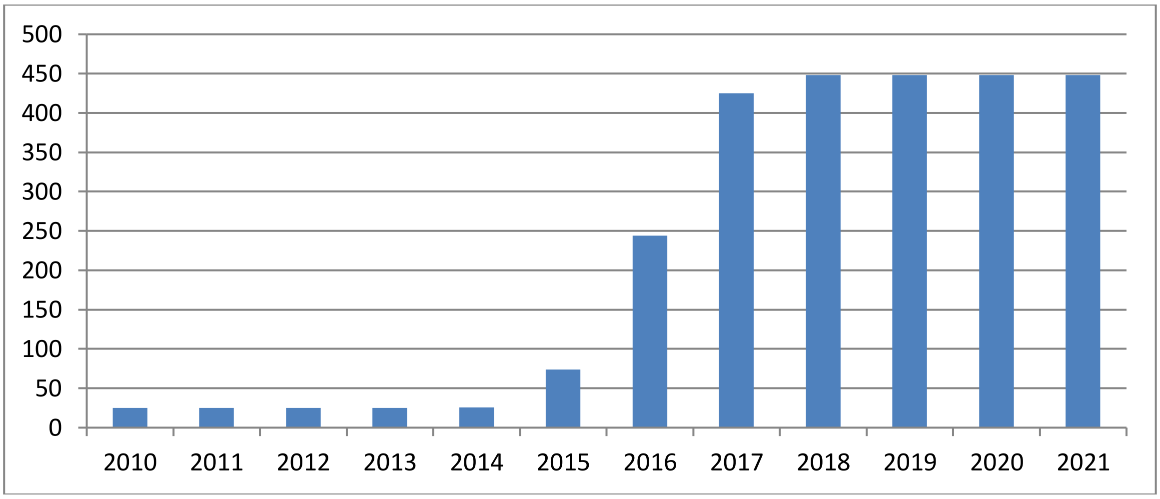
Table (6): Division of program objectives by sectors ** **Megawatt**

Production	Sector
13575	Solar
5010	Wind
2000	Thermal
1000	Biomass
400	Cogeneration
15	Geothermal

:http://www.andi.dz/index.php/fr/les-energies-renouvelables2019/10/29

In support of this program, the Algerian government has established the Algerian Institute for Research and Development of Renewable Energies, as well as a network of research and development centers such as the Research and Development Center for Electricity and Gas, the National Agency for the Promotion and Rationalization of Energy Use, the Renewable Energy Development Center and the Solar Energy Equipment Development Unit. The objectives of this project can be summarized in the following figure, where we note that the goal is to create 40% of renewable energies from the total energy in Algeria:

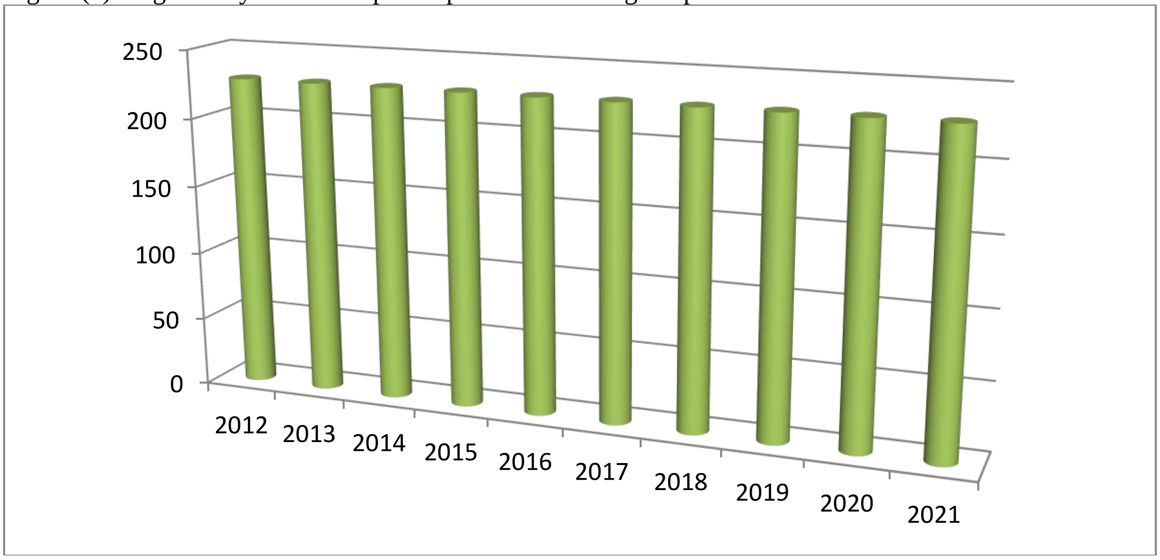
The following figures represent some of Algeria's potential and production in renewable energy: Figure (5): Solar energy in Algeria during the period 2010-2021



:(IRENA, 2022, p. 40)

We notice from the table that solar energy production has increased over the years, but it has been stable in recent years, which is considered small compared to the potential Algeria has in this field.

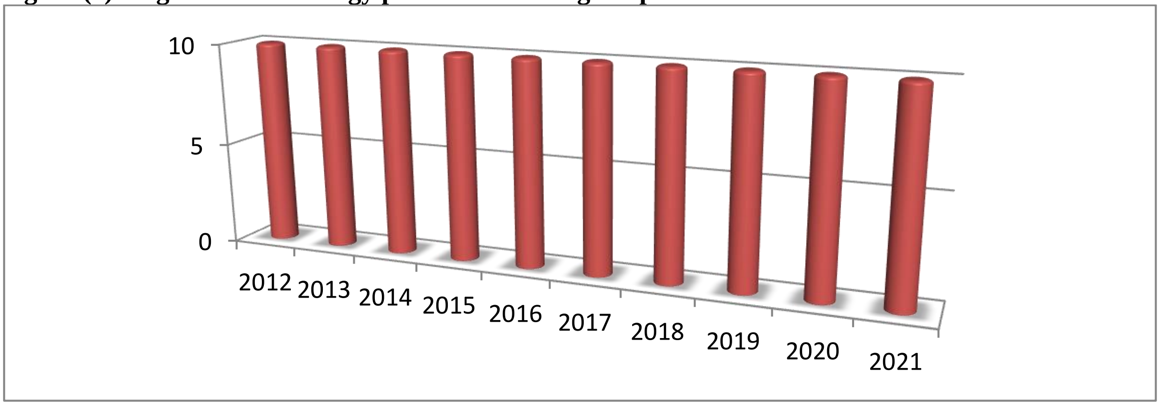
Figure (6): Algerian hydroelectric power production during the period 2012-2021



(IRENA, 2022, p. 10)

We notice from the figure the stability of hydroelectric power production in Algeria over the years, which shows the lack of optimal exploitation of this resource in Algeria. However, this is due to the concentration of rain in some areas rather than others, as geographically the rain decreases the further south we go, and most of this rain flows into groundwater fields.

Figure (7): Algerian wind energy production during the period 2013-2017



:(IRENA, 2022, p. 27)

We note from the figure the stability of wind energy production in Algeria, and this is due to the lack of embrace of wind energy generators in a way that allows for increased exploitation of this resource.

3. Conclusion (results and recommendations) :

The dependence of countries on one sector as a main source of wealth and economic financing makes it vulnerable to fluctuations in this sector, and thus the need to move towards economic diversification and investment in other sectors appears, as economic diversification has become a necessity and an inevitability for Arab oil countries, including Algeria; so that they can stand in the face of the crises witnessed by the oil markets, which can cause economic crises, and through this study we reached the following results:

-Economic diversification supports the process of expanding the scope of economic activities, whether in the production or distribution of goods and services, and in expanding the economy's ability to create opportunities for various economic activities;

-The Algerian economy is one of the most concentrated and least diversified economies, due to its heavy reliance on oil as the sole source of income;

-The industrial and tourism sector in Algeria is among the most untapped sectors in generating income for the state;

-Algeria seeks to invest in the renewable energy sector due to the large resources it enjoys, which aim to cover the market's energy needs.

To enhance economic diversification in Algeria and get out of oil dependency, we propose the following measures:

-Framing the financial and economic climate of the state with a set of legislation and laws that serve the economic diversification policy in Algeria;

-Opening the field to foreign investment that serves non-oil industries;

-Paying great attention to the development and growth of human capital through support in the fields of education, training and training;

-Enhancing the competitiveness of economic institutions;

-Adopting a clear and long-term strategy to achieve and implement the economic diversification policy in Algeria;

-Benefiting from the experiences of countries and states that have succeeded in establishing a policy of economic diversification and getting out of oil dependency.

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