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Development of Agricultural Policies in Algeria (1962–2019): An Evaluative Study from Self-Management to the Agricultural Plan

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Abstract:
Given the significant role that agriculture plays in the national economy, particularly in its contribution to Gross Domestic Product and its importance in ensuring livelihoods and food supply for both rural and urban populations, Algeria has given considerable attention to this sector in order to develop and improve it through the implementation of several agricultural policies, starting from self-management (1962) up to the Agricultural Renewal Program (2014), followed by the Agricultural Plan (2015–2019).
This study aims to highlight the reasons behind the failure of these policies and to examine the current state of the agricultural sector through the latest program, relying on recent statistical data.
The study concludes that the sector remains caught in a vicious cycle, despite the financial resources allocated to it, particularly in terms of modernization, workforce qualification, and the increasing food dependency, especially in the cereal sector, which continues to drain foreign currency reserves.
Keywords: Agricultural policies, Agricultural Renewal Program, Agricultural Plan (2019), Agricultural production indicators.
Jel Classification Codes: Q18, Q11, O13

INTRODUCTION:

Since independence, Algeria has sought to develop the agricultural sector through a series of policies and reforms implemented over the period (1962–1999), starting with self-management, followed by the agrarian revolution, restructuring, and the system of agricultural holdings, leading to various development plans. With the beginning of the new millennium, a more integrated agricultural development

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strategy was adopted during the period (2000–2014), represented by the National Agricultural Development Plan (PNDA), then the National Agricultural and Rural Development Plan (PNDAR), culminating in the Agricultural Renewal Program (PRR).

Despite the efforts made and the increasing volume of investments in this sector, the achieved results have remained below the desired objectives, as reliance on food imports has continued to meet domestic demand, in light of a gap between supply and demand, population growth, and rising food prices.

Based on this, this research aims to evaluate and analyze agricultural policies in Algeria and to compare them with the new policy adopted after the Agricultural Renewal Program, namely the Agriculture Plan (2019), which seeks to enhance agricultural production, modernize the sector, and reduce food dependency within the framework of diversifying the national economy away from hydrocarbons.

Research Problem:

What is the current state of the agricultural sector in Algeria after the Agricultural Renewal Program? Has the new agricultural policy succeeded in addressing the shortcomings of previous policies and reducing the food import bill?

Sub-questions:

1. What are the reasons behind the failure of agricultural policies during the period (1962–2006)?
2. To what extent did the Agricultural Renewal Program achieve its objectives? What are its main shortcomings?
3. What are the features and outcomes of the new agricultural policy after (2014)?

Research Objective:

This research aims to diagnose the causes behind the failure of previous agricultural policies and to analyze the features of the new agricultural policy adopted by Algeria during the period (2015–2019), while examining the status of agricultural food production and its contribution to achieving food security, as well as the possibility of reducing food dependency and its impact on economic development.

Methodology:

The study relies on the descriptive approach, supported by both inductive and analytical methods, through the collection and analysis of data and information related to the research topic.

Study Plan:

The study is divided into four main sections:

- Section One: Agricultural policies and programs during the period (1962–2006) and an analysis of their shortcomings and imbalances.
- Section Two: The Agricultural Renewal Program (2006–2014) in the context of financial abundance.
- Section Three: The new agricultural policy (2015–2019): analysis and evaluation.
- Section Four: The position of the agricultural sector in the national economy and its role in stimulating economic growth.

SECTION ONE: GOVERNMENT AGRICULTURAL PROGRAMS AND POLICIES DURING THE PERIOD (1962–2006): SYMPTOMS, SHORTCOMINGS, AND STRUCTURAL DEFICIENCIES:

First – The Period (1962–1980) (Self-Management Phase):

This period was also characterized by the issuance of a set of laws and decrees directed at farmers and rural populations with the aim of improving their living conditions. However, field implementation did not meet the established objectives, as these laws often remained formal in nature, due to the weak involvement of farmers in decision-making related to their affairs and the dominance of centralized management. This negatively affected the performance of the agricultural sector and led to a decline in its indicators, most notably:

- Decline in production and productivity in many farms, due to heavy reliance on rainfall.
- Deterioration of agricultural land due to drought, water scarcity, urban pressure, and fires, as it decreased from (3.5) million hectares in (1939) to (3) million hectares in (1960), of which only (1.177) million hectares were utilized. (Bedrani, S., & Bouzi, A. (2008).)
- Decrease in cereal production by (11%) between (1964) and (1965), and by (5.4%) up to (1966). (Al-Suwaidi, M. (1986))
- Severe loss of agricultural expertise following the departure of a large number of qualified personnel and workers after independence. (Tayeb, N. M. (1982))
- Continuous decline in agricultural exports during the period (1960–1969), despite accounting for (86%) of total exports in (1959). (Behloul, H. (1985))
- Spread of small landholdings, with approximately (135,000) investors owning less than one hectare. (Aziz, K. (1983))
- Weak performance of agricultural production (-1.4%) compared to other Mediterranean countries during the period (1961–1969), according to the FAO. (Bedrani, S., & Bouzi, A. (2008))
- Increase in food imports, reaching (724) million DZD during the period (1967–1969), Agricultural value added reached (2.4) billion DZD in (1969) (16.4% of PIB), compared to (6.1) billion DZD for industry (41.9%), i.e., nearly three times higher. **(**Behloul, H. (1985)**)**
    - Per capita agricultural land decreased to (0.59) hectares due to urban expansion and population growth. (Cherif, A. H. (2007))

Second: The Agrarian Revolution Phase:

This phase came as an extension of self-management and was considered a structural process aimed at transforming agricultural structures. Its main features can be summarized as follows: (Hashmi, T. (2014))

1- The delay in the launch of the actual development process until (1967) with the Three-Year Plan, due to economic and demographic imbalances and political instability in the early years after independence, which led to a decline in national output and the loss of an important time period (1962–1967).

2- The delay in attention to the agricultural sector until the issuance of the Agrarian Reform Law in (1971), which resulted in the loss of the period (1962–1971), and allowed limited groups to benefit at the expense of the majority of farmers, thereby contributing to the continued weakness of the sector.

Among the most important indicators reflecting this weakness are:

- The spread of bureaucracy within agricultural cooperatives and the benefit of large landowners at the expense of small farmers, as the proportion of

beneficiaries did not exceed (8.7%) (approximately 87,000 beneficiaries) compared to a target of nearly one million beneficiaries. (Al-Amin, M. M.)

- A decline in the growth rate of the agricultural sector from (16.6%) in (1966) to (13.5%) in (1972).
- An increase in the population growth rate (3.1%) during the period (1966–1972), which led to rising food demand without a corresponding increase in production, resulting in greater dependence on food imports, which rose from (6.3) billion DZD in (1975) to (6.9) billion DZD in (1980). (Aziz, K. (1983))
- A continuous increase in the food dependency rate during the period (1973–1980), rising from (23%) in (1973) to (29%) in (1980). (Houchine, K. (2007))
- A decline in agricultural value added from (16.4%) in (1969) to (8%) in (1977), compared to an increase in the contribution of industry (45%) and services (36%).
- A decrease in irrigated areas from (4%) in (1970) to (3.8%) in (1980), along with a decline in per capita arable land during the same period. (Cherif, A. H. (2007))
- The exacerbation of social disparities in rural areas due to unequal land distribution, where a minority not exceeding (3%) controls (25%) of agricultural land using modern means, while a poor majority (about (6) million farmers out of (7) million) owns only (10%) and relies on traditional methods. (Aziz, K. (1983))

Second: The Period (1980–1989)

During this phase, the same previous approach continued, as reforms remained largely theoretical in nature, with the persistence of centralized decision-making and weak involvement of farmers. This led to limited outcomes and the continued fragility of the agricultural sector. This is reflected in the following indicators: (Gharbi, F. (2008))

A decline in agricultural production due to drought, water scarcity, limited financing, and instability of cooperatives, with an average production growth rate of (2.23%). This led to increased reliance on imports, especially in the early (1980s) under the “anti-shortage” program, for which (10) billion USD were allocated in (1982), at the expense of investment and employment.

Weak exports of agricultural equipment (0.5%–1.3% during (1986–1991)) due to the incapacity of local industry, with heavy reliance on imports such as tractors ((10,678) imported compared to (4,379) locally produced in (1982)).

A sharp increase in the prices of agricultural inputs, as equipment prices increased by (3.5) times in (1980), and fertilizers and seeds by (3) times. (Bedrani, S., & Bouzi, A. (2008).)

Weak growth in agricultural production (2.2%–2.4%) compared to demographic growth (3.2%) and rising food demand (6%).

A relative improvement in per capita caloric intake ((2125) to (2724) calories), but it remained lower than in neighboring countries, with wheat dominating consumption and low intake of meat and fruits. (Benachenhou, A. L. (1982))

The establishment of the Agricultural Development Bank, which, however, failed to support small farmers, as credit was mainly directed to private operators and traders (from (172) million DZD to (993) million DZD between (82/83) and (86/87)).

A decline in food self-sufficiency despite increased production, due to demographic growth and insufficient production, leading to higher imports, particularly cereals and milk (about (20%) of the food import bill),

Third: The (1990–1999) Period

Despite the economic and security crisis, the state attempted to support the agricultural sector. In (1996), approximately (168.5) billion DZD (about (3) billion USD) were allocated to revive the sector over a five-year period, with joint financing between the state and farmers. However, the results remained limited and did not achieve self-sufficiency or improve farmers' living conditions. This is reflected in the following: (MADR, 2003)

A continuous decline in per capita agricultural land to (0.28) hectares in (1999), compared to (0.6) hectares in (1955), remaining low compared to neighboring countries (Tunisia (0.5) hectares, Morocco (1) hectare).

Weak irrigated areas, which did not exceed (6.91%) in (1999), despite an increase compared to (1990), representing only (29.7%) of agricultural holdings, which is lower than in neighboring countries. In addition, water availability per capita remained low ((4,000) m^3 per person annually compared to (11.36) thousand m^3 in Morocco).

A decline in the agricultural growth rate to (2.91%) compared to (3.83%) previously, along with a decrease in per capita agricultural output from (258) USD in (1990) to (148) USD in (1994).

Wheat productivity in Algeria is considered among the lowest in the Arab world, as it did not exceed (10.71) quintals/hectare in (1999), compared to Saudi Arabia ((46.03)), Morocco ((63.5)), and Tunisia ((13.98) quintals/hectare).

Overall, one of the main reasons for the failure of the agricultural sector was the adoption of the structural adjustment program, which included the removal of subsidies on agricultural inputs (fertilizers, seeds, feed, and equipment), leading to a significant increase in production costs. The price of a tractor rose from (80,000) DZD in the mid-(1980s) to (260,000) DZD in (1991), while food prices increased by (40%) in (1994). Reports by (CNES) and (CENEAP) confirmed that these reforms had negative effects on Algerian households. (CENEAP, 1999)

Fourth: The Phase of Launching Agricultural and Rural Development Plans (2000–2006)

This phase witnessed the launch of programs such as (PNDA) and (PNDAR), which were considered a break from previous policies. However, they did not achieve the desired results, particularly with regard to food security, which remained limited to the quantitative aspect without price stability. Food imports continued to rise, and Algeria ranked among the leading importing countries compared to other Maghreb countries. Despite allocating approximately (40) billion DZD (about (4) billion euros) between (2000) and (2005), food dependency remained high. As for the agricultural trade balance,

SECTION TWO: REVIVING THE AGRICULTURAL SECTOR – THE AGRICULTURAL RENEWAL PROGRAM DURING THE PERIOD (2006–2014) IN THE CONTEXT OF FINANCIAL ABUNDANCE AND AVAILABLE RESOURCES:

The program emphasized making agriculture a driver of economic growth through the adoption of integrated agricultural and rural development. However, the results remained limited despite the significant financial envelope estimated at (185) billion

DZD, distributed between rural renewal ((42) billion DZD), agricultural renewal ((160) billion DZD), and capacity building ((28) billion DZD). The Ministry of Agriculture's report for (2013) confirmed the weak achievement of performance contract objectives, as most wilayas did not record significant improvements in production, except for a very limited number. This situation further increased reliance on imports and oil revenues to cover the food deficit. (Ministry of Agriculture and Rural Development, 2013)

SECTION THREE: THE NEW ORIENTATION OF AGRICULTURAL POLICY (2015–2019): ANALYSIS AND EVALUATION

The Algerian economy entered a crisis in (2014) due to the collapse of oil prices (a decline of (55%) reaching approximately (27) USD at the beginning of (2016)), which affected macroeconomic indicators such as the trade balance, budget, balance of payments, currency value, unemployment, and inflation. It also led to a decline in social transfers from (25%) to (23%) of PIB during the period (2010–2017).

Despite this, the Agriculture Plan (2019) was launched with the aim of enhancing agricultural production and achieving food security within the framework of reducing dependence on hydrocarbons, as the economy still relies on them for (96%) of revenues since (2014), as shown in the following table:

Table (01): Macroeconomic Indicators during the Period (2015–2019)

Item	2015	2016	2017	2018	(1)2019
PIB (billion $)	166,295	160,047	167,515	178,344	199
Real PIB Growth Rate (%)	3,7	3,2	1,3	1,4	2,7
PIB per Capita Growth Rate (%)	1,71	1,6	1,1	0,75-	0,61-
Unemployment Rate (%)	11,2	10,5	11,7	11,7	11,4
Inflation Rate (%)	4,8	6,4	5,6	4.27	1,95
Trade Balance (billion $)	18,1-	20,4-	14,3-	9,4-	11,6-
Foreign Exchange Reserves (billion $)	143	113	96	83	64
Exchange Rate (1 DZD per 1 $)	100,7	109,4	110.95	116,91	118,61
State Budget Balance (Deficit as % of PIB)	15,3	13,5	6,4	9	9,2
Balance of Payments (10⁹ USD)	27,53-	26,03-	21,76-	15,82-	-

Source: Based on a set of statistics from the Bank of Algeria, the National Office of Statistics, the IMF report (2018), the Unified Arab Economic Report (2019), and the World Bank (http://data.albankaldawli.org). (1): Forecast year.

Second: The Agriculture Plan for the Year (2019)

The plan is based on three main pillars: agriculture and livestock, forests and water basins, and fisheries and aquaculture, with the noticeable absence of the rural development component compared to previous programs.

A) Agriculture and Livestock: This pillar focuses on modernizing the agricultural sector, supporting skills and projects, and developing agricultural clusters across (11) main branches (cereals, potatoes, dates, milk, olives, meat, fruits, vegetables, dry legumes, etc.) according to geographical specializations. (Ministry of Agriculture and Rural Development, 2016)

B) Forests and Water Basins: It focuses on developing forest production and promoting eco-tourism.

C) Fisheries and Aquaculture: It aims to support investment, develop fish exports, and protect fishing zones. (Abdelli, I., & Djaafri, J. (2017))

2.3 Objectives: The plan aims to achieve an agricultural growth rate of (5%), reach production valued at (4300) billion DZD, reduce imports by (2) billion USD, increase exports by (1.1) billion USD, and create (1.5) million jobs, in addition to other production targets detailed in the following table:

Table (02): Expected Agricultural Production for the Year (2019), Unit: Quintals

Branch	Achieved Increase (2009/2014)	Actual Production in (2014)	Expected Production (2019)	Expected Growth Rate
Cereals	4,2%	34.321.780	69,800.000	104%
Citrus fruits	/	10.889.000	13.500.000	24%
Olives	/	4.765.000	8.100.000	70%
Milk	8,3%	1.683.000	4.300.000	155%
Red meat	12,5%	2.387.000	6.300.000	164%
White meat	12,6%	2.179.000	5.800.000	166%
Potatoes	12,6%	20.129.000	67.000.000	238%
Dates	/	9.344.000	12.500.000	34%

Source: Agricultural Renewal, (03.05.2015), www.madr.dz, (01.09.2015).

Third: Analysis of Agricultural Sector Indicators during the Period (2015–2019)

After reviewing the main reasons behind the failure of agricultural reforms (1962–2014), the situation of the sector during the period (2015–2019) is analyzed in order to evaluate the plan by comparing the set objectives with the achieved results.

3.1. Agricultural Land Use and Natural Resource Management:

The utilized agricultural area (SAU) is considered a key indicator for measuring productive capacity and is currently estimated at (8.5) million hectares. Production contribution varies according to natural regions, as coastal areas differ from mountainous areas, high plateaus, and desert regions. The Ministry of Agriculture report (2013) indicates a clear disparity in contributions, with coastal areas accounting for (42.3%) compared to only (17%) for desert and mountainous regions (MADR, 2013), Thanks to the efforts of farmers to improve their agricultural holdings and adapt to current conditions, changes have occurred in agricultural land, as follows (MADR, 2012):

- A reduction in fallow land by (11%).
- An increase in afforested areas by (82%).
- A decrease in natural pastures by (30%).
- An increase in irrigated areas by (99%).

2.3. Climatic Factors:

Climatic conditions have a direct impact on the agricultural sector in Algeria, particularly through the low and irregular rainfall, which limits the possibility of intensive agriculture without reliance on irrigation. Studies show a positive relationship between rainfall and agricultural production, as a (1%) increase in rainfall leads to a (0.27%) increase in production, reflecting the sector's dependence on natural conditions and the weakness of modern irrigation techniques. The average annual rainfall in Algeria is (241.5) mm, which is lower

compared to Morocco ((287.5) mm) and Tunisia ((326.1) mm), according to the FAO, as shown in the following table:

Table (03): Annual Per Capita Share for Algeria Compared to Neighboring Countries during the Period (2000–2020), Unit: m³

Countries	2000	2006	2010	2011	*2020
Algeria	163m³	149m³	43m³	319,8	290,44m³
Morocco	416m³	378m³	316m³	889,6m³	826,73m³
Tunisia	340m³	321m³	154m³	429,2m³	398,94m³

Source: Arab Organization for Agricultural Development, A Comprehensive Study on Documenting Agricultural Policies in Arab Countries during the First Decade of the Third Millennium, Khartoum (2010), p. 23.)

The previous indicators show that Algeria has not exceeded the water poverty threshold set by the World Bank ((1000) m³/person/year), as the actual share ranges only between (500) and (600) m³ per capita, compared to (800) m³ as the Arab average and (7525) m³ as the global average. Algeria also records high water losses in distribution networks, reaching (43%) in Oran and (51%) in Algiers, compared to (18%) in Tunisia, (25%) in Rabat, and (7–20%) in some developed countries, which calls for improving the maintenance of distribution networks.

3.3. Agricultural Land Area and Irrigated Areas:

A) Agricultural Land:

The total agricultural area increased from (40.9) million hectares in (2000) to (42.5) million hectares in (2017) (about (17.8%) of the country's total area), as a result of reform programs, land reclamation, and agricultural development policies (PNDA, PNDAR, and Agricultural and Rural Renewal). However, this expansion was not reflected in actual utilization, as the proportion of utilized agricultural area slightly declined from (20.1%) in (2000) to (19.9%) in (2012), then stabilized at (20%) in (2017), as shown in the following table:

Table (04): Evolution of Agricultural Land Areas in Algeria during the Period (2000–2017), Unit: Million Hectares

Item	2000	2005	2011	2014	2017
Total Agricultural Area	40,9	42.38	42.44	42,5	42,5
Agricultural Area as % of Total Area	17,2	17,8	17,82	17,8	17,8
Utilized Agricultural Area	8,2	8,39	8,45	8,48	8,53
Utilized Agricultural Area / Total Agricultural Area (%)	20,1	19,8	19,9	19,8	20,0
Irrigated Areas (thousand hectares)	350.000	793.334	981.736	1.260.508	1.301.231
Irrigated Areas / Utilized Agricultural Area (%)	4,26	9,54	11,61	14,85	15,24

Source: Prepared by the authors based on statistics from the Ministry of Agriculture and Rural Development and statistics from the National Office of Statistics.

The table shows that agricultural land increased from (7.745) million hectares in (1975) to (8.390) million hectares in (2005), and then to (8.53) million hectares. However, most of this land is not regularly irrigated and is insufficient to meet agricultural needs, which has negatively affected the per capita share of agricultural land.

Agricultural land in Algeria is subject to several natural and human pressures that affect its sustainability, most notably urban expansion, which has led to encroachment on agricultural land (example: the expansion of Algiers from (7,500) hectares in (1977) to (80,900) hectares in (2017)). Drought and desertification also constitute major factors in land degradation, with affected areas estimated at about (729.1) thousand hectares, and nearly (44%) of agricultural land threatened by desertification. The annual loss is estimated at approximately (7,000) hectares, making Algeria one of the most exposed Arab countries to this phenomenon (ranked ninth in the Arab world).

The decline in agricultural land is explained by three main factors: urban expansion, unsustainable agricultural practices, and the degradation of soil characteristics. (Gharbi, F. (2008))

B) Irrigated Areas:

Irrigated areas have recorded a significant improvement, increasing from (350,000) hectares in (2000) to more than (1.3) million hectares in (2017) (over (15%) of the utilized area). This progress was supported by land reclamation policies and the development of dams, whose number increased from (44) dams in (1994) to about (100) dams with a capacity of (12) billion m^3, with more than (6) billion m^3 allocated to the agricultural sector.

3.4. Evolution of the Number of Agricultural Holdings:

The number of agricultural holdings reached approximately (1.2) million holdings in (2011) and remained almost stable in (2017), with an overall growth of about (17%) between (2002) and (2016) (from (1.035) million to (1.2) million), which represents a limited growth compared to the expansion of agricultural land. These agricultural holdings are also characterized by an unbalanced structure, as small holdings (less than (10) hectares) account for about (70%) of the total and occupy (25.4%) of agricultural land, and are generally oriented toward household consumption. In contrast, medium-sized holdings ((10–50) hectares) represent (22.6%) of the total number and cover (51.8%) of the area, and are characterized by a higher level of organization, stronger market integration, and greater competitiveness.

Comparisons indicate that Algeria records the lowest share of medium-sized holdings compared to Mediterranean countries, reaching (40%) in Tunisia and (77%) in France, while the availability of arable land remains limited. The average size of holdings has also declined from (11.9) hectares to (8.26) hectares (a decrease of (30%)). In addition, the size of small holdings decreased from (4.74) to (3.0) hectares, medium-sized holdings from (23) to (21.7) hectares, and large holdings (more than (100) hectares) from (273) to (186) hectares. (Ait Amara, H. (2007))

5.3. Contribution of the Agricultural Sector to Gross Domestic Product (2010–2018):

The agricultural sector recorded a relative improvement, as its contribution to PIB increased from (8.46%) in (2010) to (12.4%) in (2018), due to the growth of agricultural production from (13,644) million USD to (178,344) million USD ((+162.5%)), which led to an increase in per capita share from (379) to (521) USD. This improvement is attributed to the agricultural policy after (2014) (Agriculture Plan (2019)) and public spending. However, the sector's contribution remains low compared to hydrocarbons ((22%)) and trade and

services ((41.33%)) in (2018), reflecting the persistence of sectoral imbalance, as illustrated in the following table:

Table (05): Contribution of Total Agricultural Output and Per Capita Share of Total Agricultural Output during the Period (2010–2018), Unit: 10^6 USD

Year	2010	2015	2016	2017	2018
Gross Domestic Product (A)	161,159	166,295	160,047	167,515	178,344
Total Agricultural Output (B)	13,644	19,255	19,546	20,557	22,178
B as a Percentage of A (%)	8,46	11,6	12,2	12,3	12,4
Per Capita Agricultural Output ($)	379	482	479	493	521

Source: Unified Arab Economic Report, (2019), p. 306.

3.6. Contribution of the Agricultural Sector to Job Creation:

The agricultural sector plays a significant role in reducing unemployment by providing job opportunities, and it has the potential to absorb a large portion of the rural labor force. The sector recorded a growth of (9.6%) in (2019), compared to (8%) in (2014), representing an increase of (1.5) percentage points. However, this growth remains modest compared to other sectors such as services and trade, as shown in the following table:

Table (06): Evolution of Agricultural Employment Compared to Other Sectors during the Period (2010–2017), Unit: 1000 Persons

Sectors	2014	2015	2016	2017	2018	2019
Total Employment	10.239	10.594	10.845	10.858	11.001	11.281
Agricultural Employment	899	917	865	1.102	1.067	1.083
Industry	1.290	1.377	1.465	1.493	1.434	1.450
Construction and Public Works	1.826	1.776	1.895	1.847	1.774	1.890
Trade and Services	6.224	6.524	6.620	6.417	6.726	6.857

Source: Based on ONS statistics, Bulletin (2018, 2019).

It is observed that total employment increased from (10.2) million in (2014) to (11.2) million in (2019), but without a clear impact on the agricultural sector, whose contribution to employment remained weak. It stabilized at around (8%) during (2014–2016) and then reached approximately (9.6%) in (2019).

3.7. Agricultural Value Added:

Agricultural value added increased from (1,936.4) billion DZD in (2015) to (2,318.9) billion DZD in (2017), representing a rise from (15.6%) to (16.2%) of total value added. The share of agricultural workers also increased from (4,112) USD in (2010) to (7,387) USD in (2017) ((+79.6%)). However, the sector's contribution to PIB has shown a gradual slowdown in recent years ((6%), (1.8%), (1.2%)), due to declining growth in several agricultural products and weak production performance (Harrigan, J. (2018)). Statistics indicate that national agricultural production increased from (3281) billion DZD (approximately (28) billion USD) in (2018) to (3482) billion DZD (approximately (29.1) billion USD) in (2019), representing a growth rate of (6.1%). It also recorded an increase of approximately (700%) compared to (2001) ((500) billion DZD). However, this growth is partly attributed to rising prices and not solely to an increase in production volumes.

Agricultural production consists of two main components:

The following table presents the evolution of plant and animal agricultural production during the period (2015–2018) and the extent of its alignment with the objectives of the Agriculture Plan (2019).

Table (07): Achieved Results during the Period (2015–2018), Unit: 10^6 Quintals

Item	2015	2016	2017	2018	-2000 2009	-2010 2017	Growth Rate (%)
Cereals	37,6	34,5	34,7	60,57	32,6	41,2	26+%
Citrus fruits	13,4	12,0	13,4	14,8	61,3	117,1	91+%
Olives	6,5	6,9	6,8	8,6	27,65	54,9	99+%
Milk (10^9 liters)	3,75	3,6	3,5	3,2	19,42	29,6	52+%
Red meat	5,4	5,38	5,44	5,29	3,0	4,7	55+%
White meat	4,6	5,15	5,3	5,4	19,65	21,5	109+%
Vegetables	124,7	131,0	130,8	130,0	516,3	624,7	121+%
Dates	9,9	10,2	10,5	10,9	48,25	87,8	82+%

Source: Prepared by the authors based on the following: Bank of Algeria reports (2015, 2016, 2017) and statistics from the Ministry of Agriculture and Rural Development.

The results show that self-sufficiency levels in Algeria vary by commodity and can be classified into three categories:

A) High Self-Sufficiency (91–121%):

This category includes citrus fruits, olives, vegetables, and white meat. The improvement in these products is due to the expansion of cultivated areas (olives +58%, citrus fruits +41%), increased vegetable production, particularly potatoes and onions (+143% and +102%), as well as state support (subsidies,

B) Medium Self-Sufficiency (52–82%):

This category includes red meat, milk and its derivatives, and dates.

- Red meat recorded an improvement (+55%) but remained unstable due to climatic variations and did not achieve the targeted objectives, which necessitated imports.
- Milk production increased (+52%) but remained weak, with declines in some years (2015–2018), and a high dependence on imports (more than (1.4) billion USD in (2017)). (Gharbi, F. (2008))
- Dates showed strong performance (+84%) due to the expansion of palm cultivation and improved production, especially Deglet Nour.

C) Low Self-Sufficiency (around 26%):

This category concerns cereals, which remain the most vulnerable due to their dependence on climatic conditions and low productivity. Despite the increase in production in (2018) (+74.5%), expansion of cultivated areas (+6%), and public support, high consumption levels and low productivity ((7–15) quintals/hectare) have led Algeria to rely heavily on imports to meet demand. (Bessaoud, O., et al. (2019))

3.9. Agricultural Trade Balance Deficit:

The agricultural sector recorded a persistent deficit during (2015–2019), exceeding (9) billion USD in (2017) ((83%) of the total deficit), due to rising imports, depreciation of the dinar, and increasing global prices. Food imports account for about (18%) of total imports, with expectations of rising to (20.2%).

Cereals and milk account for more than (50%) of the import bill, with cereal imports alone reaching (2.75) billion USD in (2017) ((13) million tons), while consumption far exceeds domestic production, in addition to the issue of bread waste. Algeria also depends on cereal imports by more than (70%) and continues to experience a steady increase in milk imports (over (1.4) billion USD in (2017)). Thus, the growing food import bill without corresponding export revenues reflects the weakness of domestic production and the widening gap between population growth and agricultural production. (Bank of Algeria, 2017)

Table (08): Evolution of Agricultural and Food Imports and Exports during the Period (2015–2020)

Item	2015	2016	2017	2018	2019	))2020
Food Exports (million $)	235	326	349	373,77	32,04	26,34
Food Exports as a Percentage of Total Exports (%)	%0,68	%1,1	%0,98	%0,89	%14,54	%15,29
Food Imports (million $)	9.316	7.860	8.438	8.573,58	4.130	625,84
Food Imports as a Percentage of Total Exports (%)	%18,02	%17,5	%18,32	%18,51	%18,76	%20,21
Cereals Share of Food Imports (%)	38	34,97	31,98	35,75	33,63	26,84
MilkShare of Food Imports (%)	13,18	11,92	17,18	16,34	18,18	19,80

Source: Based on statistics from the General Directorate of Customs (foreign trade statistics) and Bank of Algeria reports (2015, 2016, 2017). Data for (2019) correspond to the first half of the year. (1): Forecast year.

SECTION FOUR: THE POSITION OF THE AGRICULTURAL SECTOR AFTER THE REFORMS OF (2000) AND THE STIMULATION OF ECONOMIC GROWTH RATES:

A) The Position of the Agricultural Sector within Economic Growth Support Programs during the Period (2000–2019):

Since (2000), the agricultural sector has benefited from significant financial allocations within various development programs. These allocations have experienced a gradual increase with the succession of these programs over the period (2000–2019), reflecting the inclusion of the sector among the priorities for supporting economic growth, as illustrated in the following table:

Table (09): Allocations to the Agricultural Sector from Economic Recovery Programs, Unit: Billion DZD

Program	Economic Recovery Support Program (2001–2004)	Complementary Program to Support Economic Growth (2005–2009)	Second Five-Year Program (2010–2014)	Five-Year Program (2015–2019)

	Amount	Percentage	Amount	Percentage	Amount	Percentage	Amount	Percentage
Agricultural Sector	65,4	12,4 %	312	%7,43	1000	%4,71	Not Available	--
Other Sectors	459,6	87,6 %	3890,7	92,57 %	20214	95,29 %	Not Available	--
Total	525,0	100 %	4202,7	%100	21214	%100	22100	100 %

Source:

1- **National Economic and Social Council (2005), Report on the Economic and Social Situation of Algeria, Second Half of (2005), p. 87.**
2- **People's Democratic Republic of Algeria, Prime Minister's Office, Complementary Program to Support Growth for the Period (2005–2009), April (2005), pp. 06–07. Available at: http://www.premierministre.gov.dz/arabe/media/PDF/TexteReference/TexteEssentiels/ProgBilan/ProgCroissance.pdf (12/08/2015).**
3- **Prime Minister's Services, Annex to the General Policy Statement, Annex (2): Lists of Economic and Social Development Programs, (2010), p. 06.**

The total allocations directed to the agricultural sector amounted to approximately (1377.4) billion DZD, representing about (5.3%) of the total development programs.

B) The Role of the Agricultural Sector in Stimulating Economic Growth:

Assessing this role requires analyzing the evolution of Gross Domestic Product during the same period, as illustrated in the following table:

Table (10): Sectoral Distribution and Real Growth Rates of Gross Domestic Product Components during the Period (2000–2019), Unit: %

Sector	2000	2004	2008	2010	2012	2015	2017	2018
A). Hydrocarbons • Contribution to Output (%) • Real Growth Rate of the Sector	39,194,9	37,853,3	45,062,3-	34,692,6-	32,873,4-	18,8-32,7	19,922,3	22,422,9
B). Services • Contribution to Output (%) • Real Growth Rate of the Sector	30,735,1	30,9711,7	29,1616,2	35,3512,9	37,0710,6	44,614,7	42,70,8	41,07,1
C). Construction and Public Works • Contribution to Output (%)	8,125,1	8,298,0	8,629,8	10,436,6	9,338,2	11,56,9	11,96,3	11,66,5

• Real Growth Rate of the Sector								
D). Agriculture • Contribution to Output (%) • Real Growth Rate of the Sector	8,39 5,0-	9,44 3,1	6,55 5,3-	8,42 6,0	8,97 7,2	11,6 9,2	11,9 3,7	12,0 9,4
E). Industry • Contribution to Output (%) • Real Growth Rate of the Sector	7,07 4,0	6,16 1,2	4,68 1,9	4,96 2,5-	4,5 1,6	5,5 9,8	5,6 6,7	5,6 7,9

Source: Bank of Algeria reports (2005, 2010, 2019), Annual Report on Algeria's Economic Indicators.

The analysis of the data shows that the agricultural sector still makes a weak contribution to stimulating economic growth compared to the hydrocarbons and services sectors, with an average contribution of only (9.65%). Meanwhile, the national economy remains dependent on fluctuations in oil prices. The agricultural sector is also characterized by unstable performance and low stability due to its direct dependence on climatic conditions.

General Conclusion:

The study concluded that successive agricultural policies, despite their intensity, have not achieved the desired food security, and that the position of agriculture in the national economy has remained secondary compared to other sectors, with the continued persistence of food dependency on external markets. A set of recommendations was also proposed, the most important of which include: modernizing production methods, developing irrigation, encouraging youth participation, improving agricultural research and extension services, and optimizing land use while strengthening governance and oversight of subsidies.

As for the results, several key points were identified, most notably:

- Some targets were not achieved, including: agricultural production expected to reach (4.3) billion DZD, while the actual figure was (3.4) billion DZD in (2019); expected agricultural employment was (1.5) million workers, while the actual figure was (1) million in (2019); the expected reduction in imports was (2) billion USD, whereas the actual reduction amounted to (480) million USD during the first half of (2019) (4.13 billion USD) compared to the same period in (2018) (4.61 billion USD). As for food exports, the expected value was (1.1) billion USD, while the actual value reached (283.86) million USD in the first half of (2019), compared to (224.80) million USD during the same period in (2018). These targets remain far from being achieved, and overall, non-hydrocarbon exports continue to be marginal.
- The share of agriculture in productive activities, as an average for the period (2010–2018), represents approximately (11.4%), ranking third after hydrocarbons and services. This relative stability reflects the rapid growth of non-agricultural sectors, indicating a decline in the economic importance

of agriculture in favor of other sectors, particularly hydrocarbons, public works, and services.

- The import bill for cereals and milk continues to account for (50%) or more of total food imports over the past (50) years. It is projected that cereal demand will range between (116) and (127) million quintals, and milk demand between (48) and (52) million quintals by (2038), with a population estimated between (46) and (51) million inhabitants in the same year (Cherif, A. H. (2007)).
- Agricultural labor continues to decline as workers shift to other sectors offering better advantages, while the proportion of older workers and women in agriculture increases.
- There is a lack of training and qualification among agricultural labor, along with high illiteracy rates.
- Algeria is among the countries with the lowest use of fertilizers compared to Morocco and Tunisia. Fertilizer use decreased from (24 kg/ha) in (1986) to (8.58 kg/ha) in (2009), compared to Morocco (from 36 to 53.81 kg/ha) and Tunisia (from 21 to 34.38 kg/ha) during the same period (Hervieu, B., et al. (2000)).

Based on these results, the following recommendations are proposed:

1- Developing agriculture and achieving food security in Algeria requires the continuation of agricultural economic renewal, based on a supportive environment and effective regulation of widely consumed goods, in order to ensure an efficient agricultural policy.
2- The use of modern technologies remains very limited in soil preparation, fertilization, harvesting, as well as storage and distribution systems, which have not undergone significant modernization.
3- Expanding the use of modern irrigation systems.

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