

Agricultural Entrepreneurship in Algeria a mechanism for enhancing food security**Dr: Hadjira BETKA¹, PhD student: Mordjane IBTISSAM²**¹ Mohamed Boudiaf University - M'Sila, Laboratory of Economic Strategies and Policies in Algeria. (Algeria), hadjira.betka@univ-msila.dz² Mohamed Khider University – Biskra, Laboratory of Banking and Financial Management. (Algeria), ibtissam.mordjane@univ-biskra.dz**Received: 03 /02 /2024 ; Accepted: 05 / 20 /2024 ; Published: 06 / 30 /2024****Abstract :**

This research paper aims to identify the reality of the agricultural sector in Algeria in terms of natural resources, financial resources, and human resources. On the other hand, it seeks to highlight agricultural entrepreneurship and its financing mechanisms, as well as to recognize the crucial role it plays in Algeria in fulfilling food security for individuals by providing agricultural and animal products and reducing the burden of the import bill that has weighed heavily on the country. To achieve the study's objectives, a descriptive-analytical method was used, employing a set of tools such as tables and annual reports on the expansion of agricultural land and the development of agricultural production in Algeria and its implications for food security. Consequently, this study concludes that despite the significant attention given by the Algerian government to agricultural entrepreneurship, it does not achieve the desired results and the objectives set by the state.

Keywords: Agricultural sector; agricultural entrepreneurship; Food security.**Jel Classification Codes :** O13; Q17; Q18**المخلص:**

تهدف هذه الورقة البحثية إلى عرض واقع القطاع الفلاحي في الجزائر من خلال الموارد الطبيعية والموارد المالية والبشرية، ومن جهة أخرى تهدف إلى تسليط الضوء على المكافحة الفلاحية وآليات تمويلها إلى جانب التعرف على الدور الحيوي الذي تلعبه في الجزائر في تحقيق الأمن الغذائي للأفراد من خلال توفير المنتجات الزراعية والحيوانية والتخفيف من عبء فاتورة الاستيراد التي أثقلت كاهل الدولة، ومن أجل بلوغ أهداف هذه الدراسة تم استخدام المنهج الوصفي التحليلي وذلك من خلال استخدام مجموعة من الأدوات المتمثلة في الجداول والتقارير السنوية حول تزايد الأراضي الزراعية وتطور الإنتاج الفلاحي في الجزائر وانعكاساته على الأمن الغذائي؛ لتتوصل في الأخير من خلال هذه الدراسة أن رغم الاهتمام الكبير التي تُليه الحكومة الجزائرية للمقاولات الفلاحية إلى أن هذه الأخيرة لا تحقق النتائج المتوخاة منها والأهداف التي سطرتها الدولة.

الكلمات المفتاحية: القطاع الفلاحي، الأمن الغذائي، المكافحة الفلاحية.**تصنيفات جال:** O13; Q17; Q18**How to cite this article by the APA method:**

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1. Introduction:

Entrepreneurship is regarded as one of the most significant terms that has gained substantial popularity in the economy in recent decades. It has appeared as a response to the rapid developments witnessed by the world. Entrepreneurship is considered a suitable and effective model for establishing a solid foundation to build a new, advanced economy based on development. It strives to create employment opportunities, absorb unemployment, and promote the development and improvement of national economies. Entrepreneurship is broad, entailing various activities, particularly agricultural ones. The Algerian government's support and development of small and medium-sized enterprises have led to the emergence of several agricultural investments .

The agricultural sector is among the critical sectors that receive considerable attention from advanced and developing countries due to its advantages in providing food without relying on imports, ensuring the country's resilience compared to other nations.

Like other countries, Algeria acknowledges the significance of the agricultural sector, particularly as it has transitioned to a market economy, abandoning the traditional economy that has proven its failure in facing several crises. Accordingly, Algeria has made substantial efforts to establish small and medium-sized enterprises in different fields. Since the agricultural sector is one of the most strategic sectors on which Algeria is betting, it has received significant attention through reforms and allocated financial resources, especially in the five-year growth program (2015-2019). Various financing mechanisms have been presented for agricultural activities, such as the "Companion" and "Challenge" loans, all to establish agricultural entrepreneurship, encouraging agricultural entrepreneurs and eventually fulfilling its primary goal of attaining food security. Food is regarded as one of the basic elements of life, especially in light of global warming and the resulting climate changes, which have led to a scarcity of rainfall and a decrease in crops that fail to meet the population's increasing demand.

Study problematic:

For decades, Algeria has sought to fulfill food security by encouraging the agricultural sector and providing all the necessary facilitations to establish agricultural enterprises through financing and support received by investors and agricultural entrepreneurs from different support agencies for small and medium-sized enterprises. This includes the various loans provided by the Agricultural and Rural Development Bank. This study aims to uncover the nature of agricultural entrepreneurship and its contribution to achieving food security, addressing the following research problematic:

What is the role of agricultural entrepreneurship in achieving food security in Algeria?

Research objective:

This research paper explores the reality of agricultural resources in Algeria and recognises agricultural entrepreneurship as an essential and influential mechanism for achieving food security.

Research importance:

The study holds importance in diagnosing the agricultural reality and highlighting crucial role of agricultural entrepreneurship in achieving food security, especially given the fluctuation of oil prices.

Research Structure:

First section: The theoretical framework of entrepreneurship and agricultural entrepreneurship.

Second section: The theoretical background of food security and agricultural resources in Algeria.

Third section: The role of agricultural entrepreneurship in enhancing food security.

2. The Theoretical Framework of Entrepreneurship and Agricultural Entrepreneurship:

Before delving into the concept of agricultural entrepreneurship, it is necessary to first uncover the concept of an entrepreneur and entrepreneurship, and ultimately, to grasp the concept of agricultural entrepreneurship.

2.1 The Concept of an Entrepreneur:

The definition of an entrepreneur has undergone several changes to adapt and keep pace with ongoing economic developments. We can define an entrepreneur as follows: an individual characterized by creativity who manages a small or medium-sized enterprise and holds a significant share of its capital, playing an essential and influential role in making decisions related to its direction or contributing to problem-solving (Al-Djoudi, 2015, p. 22).

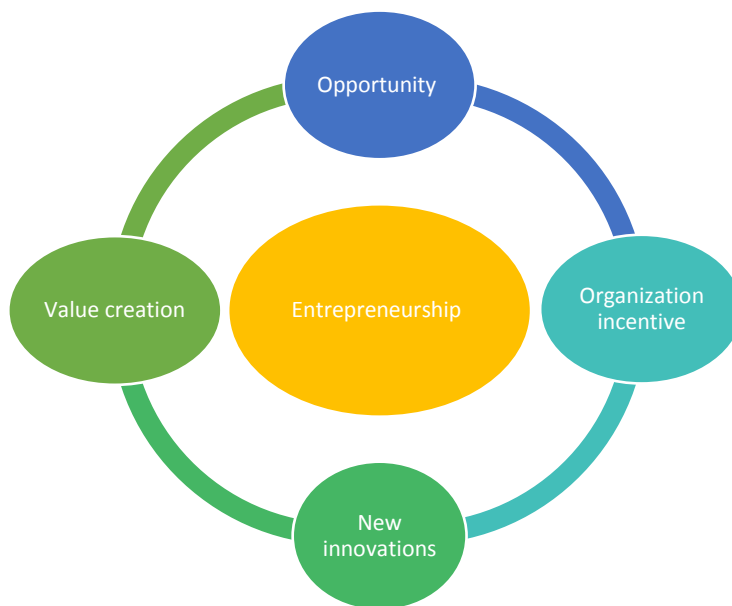
2.2 The Concept of Entrepreneurship:

The term "entrepreneurship" is one of many that has gained popularity in the business world in recent years. It is difficult to identify a specific meaning for this term, as it is for other concepts.

Entrepreneurship is "the dynamic process of creating and exploiting business opportunities by an individual or group of individuals through the establishment of new organizations to create value" (Kara, Tahraoui Douma, & Salah, 2020, p. 94).

Based on this definition, entrepreneurship is based on four elements, summarized in the figure below:

Figure 01: Elements of the Concept of Entrepreneurship



Prepared by researchers

2.3 Concept of Agricultural Entrepreneurship

Numerous terms describe the concept of agricultural entrepreneurship. From a linguistic perspective, it is logical for scholars from various disciplines to use diverse terms to describe similar and analogous phenomena. The following words have been used: rural entrepreneur, innovator, new or diversified project, multifunctional or multi-activity, in collaboration with a farm,

household, or agricultural, all them signify the meaning of an agricultural entrepreneur (Fitz-Koch, Nordqvist, Carter, & Hunter, 2018, p. 131).

Agricultural entrepreneurship is defined as:

- Agricultural entrepreneurship is defined as a specialized enterprise involved in cultivating, managing, producing, and marketing agricultural products, encompassing animal wealth and crops. It is also called agricultural business entrepreneurship (Rezazi, 2020, p. 293).
- It is an institution that relies on local resources and employs local workers to generate directed income for rural communities (Medjahdaoui & Tabet Aouel, 2022, p. 112).
- Individuals to start a serious agricultural business (Arafat, Saleem, Dwivedi, & Khan, 2020, p. 3).
- Some argue that the opportunity approach is the most precise and appropriate definition for agricultural entrepreneurship, supported by the following arguments:
 - The study of agricultural entrepreneurship is more comprehensive than specific situations, such as establishing new projects (for example, most agricultural activities have existed for decades).
 - Learning and development are at the core of entrepreneurship. Some farmers seize available opportunities, unlike others who need more specific skills and experience.
 - The significance of the entrepreneurial environment in which the entrepreneur engages, as the fundamental processes of opportunity development (interpretation, understanding, and creativity) are not isolated but influenced, for example, by employees, competitors, and others (Lans, Seuneke, & Klerkx, 2013, p. 2).

Based on those mentioned above, we can define agricultural entrepreneurship as **institutions primarily engaged in agricultural activities targeted at the local market, resulting in resources that benefit the agricultural entrepreneur.**

2.4 Agricultural Entrepreneurship Strategies

Agricultural entrepreneurs adopt managerial strategies that enable them to adapt to various structural and fundamental changes affecting the agricultural sector, regardless of farm size, revenue, or geographic location. These policies include (Boudjelkha & Amamra, 2018, pp. 164-165):

- A. **Specialized Agricultural Companies:** Often encompassing trade activities centred around essential commodities, these companies strive to achieve optimal quality by adopting recognized and established technological techniques. Alternatively, they may expand and develop their product scope. Some studies have revealed that agricultural specialization may be the most suitable strategy for business continuity.
- B. **Specialized Agricultural Companies:** These companies engage in other related business ventures to supplement their primary income derived from agriculture. It should be noted that these other ventures are not necessarily agricultural but are associated with agricultural-related services.
- C. **Supplementary agricultural companies** include those operated by families engaged in farming as a secondary profession. Their income from non-agricultural activities often contributes to their agricultural work.

2.5 .Forms of agricultural entrepreneurship

It can be classified into two main types (Medjahdaoui & Tabet Aouel, 2022, p. 113):

- A. **Rural agricultural entrepreneurship:** This type operates within a rural environment, and the owner possesses competencies and knowledge that allow him to manifest his creativity, capabilities, and diversify his activities while interacting with consumers.

- B. Modern agricultural entrepreneurship:** This type of entrepreneurship constantly strives to develop production structures. Modernity here is linked to the scale of investment agricultural investors and work divisions. The entrepreneur can mobilize production resources to create added value, increase production, or open new outlets.

2.6 .Loans directed towards financing the agricultural sector by the Agricultural and Rural Development Bank

The Agricultural and Rural Development Bank has allocated a range of loans to finance agricultural activities, including (Ministry of Agriculture and Rural Development):

2.6.1. R'fig Loan:

It is a seasonal loan directed towards farmers and investors as per the Agricultural Orientation Law 2008, whether individually or collectively in cooperatives, groups, associations, unions, agricultural units, or agricultural product warehouses with wide consumption. It includes both seasonal and federal loans.

- **R'fig Loan Advantages:** It offers numerous advantages, including:

- 0% interest rate,
- Personal contribution of 0.00 DZD
- Loan amount based on the size of the activity and repayable over 06 to 24 months.

- **Areas Covered by the R'fig Loan:**

A. Seasonal Loan:

- Acquisition of necessary inputs related to agricultural investment activities (seeds, seedlings, fertilizers, etc.),
- Purchase of animal feed for breeding, irrigation equipment, and veterinary medicines,
- Acquisition of agricultural products for storage within the wide consumption agricultural product control system,
- Agricultural operations,
- Harvesting and threshing.

B. Federal Loan: It is sought at economic operators, economic institutions, cooperatives, and groups participating in the following activities:

- Processing of agricultural tomatoes,
- Milk production,
- Potato seed production,
- Pasta manufacturing units,
- Packaging and export of dates,
- Table oil and olive oil production,
- Honey production,
- Production of local products,
- Establishment of animal wealth units and fattening centres,

- Artificial insemination and embryo transfer,
- Slaughtering and cutting of poultry,
- Marketing, storage, packaging, and valorization of agricultural products,
- Production and distribution of small agricultural tools, irrigation, and plastic greenhouses.

2.6.2 ETTAHADI Loan

ETTAHADI Loan targets farmers, cooperatives, model farms, and economic institutions. It is an enhanced investment loan from the Agricultural and Rural Development Bank. It aims to establish new investments in agriculture and animal husbandry on unused agricultural land owned by private individuals or the state. The Ministry of Agriculture and Rural Development and Fisheries covers the accrued interest.

- **ETTAHADI Loan Advantages:** It offers numerous advantages, including:
 - 0% interest rates for the first five years.
 - Personal contributions range from 10% to 20% of the project's value.
 - The loan amount ranges between 1,000,000 DZD and 100,000,000 DZD.
 - If the repayment period is five years or less, the Ministry bears the interest.
 - The loan beneficiary pays 1% interest upon repayment between the sixth and seventh years.
 - The loan beneficiary pays 3% interest upon repayment from the eighth to the ninth year.
 - The beneficiary bears the full interest burden if the project lasts more than ten years.
- **Areas covered by the Challenge Loan:**
 - Establishing and upgrading agricultural and animal husbandry equipment.
 - Enhancing the productive capacities of current and unused investments.
 - Economic institutions that contribute to intensifying agricultural and animal products, their processing, and value addition and require medium-term financing needs (federal financing).

2.7 .Obstacles to the development of agricultural entrepreneurship

Despite the active role played by agricultural entrepreneurship and its direct connection to the national excellence of society, it has needed more attention. Suppose we consider rural areas as strategic axes for agriculture, food production, and the growing need for them. We will understand their unparalleled role in development, growth, and prosperity. We will realize that this disregard and negligence will lead to significant costs and consequences. What exists today under social and economic problems causes various social disturbances and anxieties, particularly insecurity, behavioural distortions, social and moral corruption, nervousness, and the emergence of ominous phenomena such as excessive migration growth and increased marginalization. The increase in marginalization around major cities and many other problems are examples of these consequences. However, despite the benefits and advantages enjoyed by agricultural entrepreneurship, some obstacles can hinder the flourishing of the agricultural sector. The most important of these obstacles are as follows:

- Policy and planning obstacles,
- Economic obstacles,
- Support obstacles,
- Education and media readiness,
- Infrastructure obstacles,
- Cultural obstacles (Fatemi Asl, 2020, pp. 8-9).

3. The theoretical background of food security and the Reality of agricultural resources in Algeria

Global warming has resulted in numerous environmental problems and droughts experienced by most countries worldwide. As a result, many crises, such as food crises, have emerged. All countries, especially developing ones, strive to achieve food security today.

3.1 The concept of food security

Despite the recent term, it has been defined in various ways. Some notable definitions include:

- The Food and Agriculture Organization defines it as ensuring that all people, at all times, have material and economic Access to the basic food they need (Rahmani, 2020, p. 237).
- The World Bank, in its report on poverty and hunger in 1986, defines it as providing sufficient food for all people, at all times, to lead an active and healthy life (Hamlouche & Madi, 2023, p. 135).

3.2 Dimensions of food security

Based on the definition provided by the World Bank, the dimensions of food security are manifested in the following ways:

A. Food availability

Ensuring the availability of appropriate food in terms of quantity and quality, which can be met through either domestic production or imports (including food aid).

B. Access to food

The ability of individuals to access appropriate food entitlements, defined as goods that a person can command or control based on legal, political, economic, and social aspects (Mouloudj, Bouarar, & Fechit, 2020, p. 164).

C. Food use

People should have access to an adequate and diverse quantity of food to meet their nutritional needs. However, they should also be capable of correctly consuming and metabolizing these foods. Food use can be influenced by the following:

- The nutritional value provided by consumed foods is measured in terms of calories, vitamins, proteins, and various micronutrients (such as iron, iodine, and vitamin A).
- Health status: The impact of diseases (e.g., HIV/AIDS or diarrhoea) on the ability to eat, absorb nutrients, and metabolize them.
 - Food safety: Obtaining non-perishable and toxin-free foods during production, distribution, and marketing. Salmonella is an example of a foodborne disease.
- Preparation and consumption: Resources (such as cooking utensils and fuel), knowledge, and the ability to prepare and consume food hygienically and cleanly.

D. Food stability

Food may be available and accessible to individuals who can utilise it effectively. However, to prevent worsening malnutrition and alleviate concerns about food security, this state should be enduring rather than temporary or susceptible to fluctuations.

Hotspots for food security include:

- Vulnerable populations affected by war, where logistical services and distribution face difficulties even under normal circumstances.
 - Countries are impacted by crises stemming from severe weather conditions and pests, such as the worst locust plague in decades, affecting food production in 23 nations.
- The poor and marginalized, including over 821 million individuals already experiencing food insecurity before the onset of the COVID-19 pandemic, further affecting mobility and access.
- Countries experiencing significant currency devaluation, leading to increased costs of food imports and those witnessing a collapse in the prices of other essential commodities, diminishing their ability to import food items (Rahal & Tahri, 2021, pp. 243-244).

3.3 . Levels of food security

Encompasses three levels as follows (Ammrani & Maatallah, 2017, p. 59):

A. Subsistence level

Aligns with the concept of the poverty line and represents a state where a nation can meet the minimum requirements to keep an individual alive.

B. Moderate levels

This is the ordinary level that falls between subsistence and potential levels. It signifies the capacity to overcome malnutrition by ensuring the adequate biological food needs of all members of society.

C. Potential level

Refers to the state where a nation guarantees the minimum required calorie intake based on international standards for individuals within the community. Consequently, individuals can engage in productive activities.

3.4. Agricultural resources in Algeria

Algeria possesses abundant natural and water resources that effectively contribute to the construction and development of the agricultural sector. These resources can be classified as follows:

A. Land resources

According to statistics from the Ministry of Agriculture and Rural Development, the agricultural land in Algeria is minimal compared to the total area, estimated at 43 million hectares, accounting for only 17.8%. Moreover, only 8.5 million hectares are utilized, gradually decreasing due to urban expansion. Agricultural land in Algeria is distributed as follows:

B. Arable land: includes all lands actively used in agricultural and pastoral activities or have the potential for future use.

- **Cultivated land:** To avoid the high costs associated with cultivating agricultural land in Algeria, farmers have resorted to intensive use of their farmland and maximizing its cultivated area. This is achieved by multiplying the area of land planted annually with successive crops within the same year.
- **Irrigated land:** These are very limited, accounting for at most 14% of the utilized agricultural area. They usually rely on personal efforts (Benamor & Bourzama, 2018, pp. 33-34).

C. Water Resources

Algeria possesses numerous water resources, primarily due to its vast expanse and diverse terrain. The water resources in Algeria amount to approximately 20 billion m³, including 13 billion

m³ of surface water in the north and 7 billion m³ of groundwater, with 2 billion m³ in the north and 5 billion m³ in the south. Approximately 75% of these resources are renewable. Generally, water resources in Algeria are classified into three categories: rainwater, surface water, and groundwater.

D. Human resources

The workforce in the agricultural sector in Algeria reached 1,102,000 workers, accounting for 10.6% of the total workforce. The average agricultural workforce was estimated to be around 984,000 workers during the period from 2013 to 2017.

E. Capital Resources

According to the Food and Agriculture Organization (FAO), capital resources in agriculture encompass animal wealth, cultivated trees, agricultural machinery, land improvement expenses, and structures utilized in animal production. Agricultural capital has experienced fluctuating growth from year to year, reaching \$12.99 billion in 2013 and \$14.20 billion in 2017. On the other hand, agricultural mechanization has witnessed significant advancements, with an average of approximately 99,646 tractors from 2013 to 2017. Using fertilizers has also seen a noticeable increase in recent years, with an average application rate of 14 kg per hectare in 2013, rising to 21.7 kg per hectare in 2015 (Bouabdellah, 2021, pp. 88-89).

3.5. Agricultural Policies in Algeria

The agricultural sector in Algeria has experienced different programs and policies starting from the self-management policy that appeared with independence in 1962. Followed by the policy of agricultural revolution and the structural adjustment program in the 1980s, which did not prove effective. Algeria then shifted to other policies, including:

3.5.1. National Agricultural Development Plan (PNDA)

The National Agricultural Development Plan seeks to enhance food security by improving individuals' material, social, and economic capacities to access food in appropriate quantity and quality according to international standards. It also endeavours to raise self-sufficiency rates for food commodities to improve the trade balance and decrease food imports. This is fulfilled by developing productive capacities of structures and production branches within a rational use of natural resources (Souahlia, Rahmoun, Maqas, & Fatoum, 2018, p. 324)

3.5.2. Agricultural and Rural Renewal Policy (2006-2014)

The Agricultural and Rural Renewal Policy originates from the Agricultural Guidance Law No. 08-16 issued on August 3, 2008, outlining its objectives and general framework. It aims to enable national agriculture to contribute to enhancing food security and fulfilling sustainable development through a participatory strategy that combines both rural and agricultural expertise. This strategy seeks to realign the sector's practical objectives and adopt a grassroots approach as an organizing principle for the value chain, determining strategic agricultural sectors that strengthen the country's food production foundations and significantly contribute to economic growth (Haboul, 2019, p. 308).

3.5.3. Agricultural, Rural, and Fisheries Development Policy (2015-2019)

The Agricultural, Rural, and Fisheries Development Policy was launched in 2015 and is an extension of agricultural and rural renewal chain, but the fishing and marine resources sector has been integrated with the agriculture and rural development sector in order to combine efforts to develop the sector. (Siyar & Bassi, 2022, p. 229)

3.6. Expenditure on the Agricultural Sector within Development Programs

The Algerian state has dedicated substantial financial resources to revitalize the agricultural sector, developing agricultural and farming production, and fulfilling sustainable food security. The Ministry of Agriculture and Rural Development has established a program for the renewal of the agricultural and rural economy based on three key pillars (Rahal & Touil, 2019, pp. 98-99):

- **Agricultural Renewal 2010-2014:** The sector dedicated approximately 600 billion dinars over five years, equivalent to 120 billion dinars annually, for the Agricultural Renewal Program.
- **Rural Renewal 2010-2014:** The sector dedicated approximately 300 billion dinars over five years, equivalent to 60 billion dinars annually, for the Rural Renewal Program.
- **New Growth Program 2015-2019:** This program sought to expand irrigated areas to over one million hectares and create new agricultural investments in the highlands and southern regions. Furthermore, ambitious programs were set to plant over 400,000 hectares of fruit-bearing and non-fruit-bearing trees and to double the production of fishery and aquaculture products by improving existing infrastructure in ports and fishing shelters.

3.7. The Role of agricultural entrepreneurship in enhancing food security

Agricultural entrepreneurship plays a vital role in achieving food security. The Algerian government, recognizing the importance of this principle, has dedicated all means and granted various privileges to developing this crucial sector. We will delve into

A. Development of Some Plant Products in Algeria (2016-2020)

Table No. (01): Development of Plant and Animal Products (2020-2016)

Year	2016	2017	2018	2019	2020
Cereal	3 445.15	3 478.07	6 065.94	5 633.45	4 392.30
Wheat	2 440.10	2 456.50	3 981.22	3 876.88	3 106.00
Legumes	77.31	107.21	146.30	146.56	115.05
Vegetables	8 880.20	8 882.46	9 409.39	8 619.98	10 287.21
Potatoes	4 759.68	4 606.40	4 653.32	5 0.25	4 659.40
Fruits	4 796.74	4 942.65	14 634.71	5 006.10	4 552.00
Red meats	537.74	543.89	507.67	529.00	505.89
Poultry meats	515.44	529.81	540.00	299.43	292.64
Fish	102.14	108.30	120.35	105.13	86.90

Source: Prepared by researchers based on the Yearbook of Agricultural Statistics (Arab Organization for Agriculture).

Plant and animal products have witnessed fluctuating developments in recent years. The plant products, in particular, have experienced a decline due to harsh natural conditions and water scarcity in many regions. Additionally, large-scale fires have devastated crops and led to the loss of livestock. The high cost of animal feed has also compelled many farmers to abandon certain activities. Moreover, farmers' need for more efficiency in combating various diseases and viruses afflict crops and animal resources has further exacerbated the situation. The table below illustrates the evolution of some plant and animal products.

B. Development of Self-Sufficiency Rates for Major Food Commodities in Algeria (2010-2021)

Algeria, through its different agricultural programs, aims to fulfill self-sufficiency on a larger scale for food products to reduce the food import bill and raise exports. The following table illustrates the development of self-sufficiency rates for some products:

Table No. 2: Development of Self-Sufficiency Rates for Major Food Commodities in Algeria (2010-2021) Unit: (%)

Years	Average period From 2010-2014	Average period From 2015-2019	2020	2022
Wheat and flour	35,212	27,82	28.2	20.8
Potatoes	97,448	97,60	98.7	98.6
Vegetables	99,748	99,81	99.8	99.7
Fruits	91,39	98,02	96.1	98.7
Legumes	29,892	46,16	37.5	29.6
Red meat	90,84	93,78	96.0	99.0

Source: Prepared by researchers based on the Yearbook of Agricultural Statistics, (Arab Organization for Agriculture).

Algeria has consistently achieved the highest self-sufficiency rate in the vegetable sector, which has stayed below 99% since 2010. Following closely is the fruit sector, where Algeria has fulfilled respectable percentages of not less than 90%. Similarly, red meat reached a rate of 99% by the end of 2022. However, Algeria needs more self-sufficiency in the legume sector, as it has not exceeded a rate of 50% since 2010. The self-sufficiency rate in wheat and flour continues to decline from 2010 to 2022.

C. Food Imports

Table No. 3: Development of Agricultural and Food Imports (2010-2014) Unit: Billion Dollars

Years	Food imports	Agricultural imports
Average 2010-2014	36941,63	58240,87
Average 2015-2019	7053,368	10239,376
2020	7601.1	8462.3
2021	9145.8	9893.1

Source: Prepared by researchers based on the Yearbook of Agricultural Statistics, (Arab Organization for Agriculture)

From the table above, we note that imports have witnessed fluctuations. They demonstrated an increase from 2010 to 2014, where food imports reached 36,941.63 billion dollars, while the average value of agricultural imports was 58,240.87 billion dollars. A significant decrease in import bills was recorded in 2015 due to the transition towards the economic growth model sought mainly at fulfilling sustainable food security. Algeria also adopted an austerity policy, which mandated a reduction in imports. However, imports started to rise again from 2017 onwards, reaching 9,145.8 billion dollars for food imports and 9,893.1 billion for agricultural imports by the end of 2021.

D. Food Exports

Table No. 4: Development of Agricultural and Food Exports (2010-2014) Unit: Billion Dollars

Years	Food exports	Agricultural exports
Average 2010-2014	312,738	518,128
Average 2015-2019	305,788	972,548
2020	477.6	1404.6
2021	477.6	1404.6

Source: Prepared by researchers based on the Yearbook of Agricultural Statistics, (Arab Organization for Agriculture)

The table above indicates that the volume of food and agricultural exports was low from 2010 to 2014. However, they demonstrated a remarkable increase from 2015 until 2019. The years were stable in 2020 and 2021, with values of 477.6 billion dollars for food exports and 1,404.6 billion for agricultural exports.

E. Statistics on Beneficiaries of ETTAHADI Loan

Within the framework of ETTAHADI Loan provided by the Agricultural and Rural Development Bank "Badr" for the present agricultural season 2023/2024, according to preliminary figures from the same bank, the number of beneficiaries of ETTAHADI Loan until November 2023 reached a total of 199,600 farmers who benefited from funding estimated at around 330 billion DZD. 54% of this amount was allocated to the cereal sector, equivalent to approximately 177 billion DZD. In addition to the cereal sector, which accounted for most of the loans, the financing covered different investment projects in the agricultural field to acquire various inputs, seeds, and raw materials for livestock farming (Algerian radio).

Conclusion:

Agricultural entrepreneurship receives substantial attention from governments due to its positive economic and social effects, particularly its contributions to economic growth, diversification of products to reduce dependence on oil, employment generation, food security, and decreasing imports. Through this study, we reached the following conclusions:

- Agricultural entrepreneurship is similar to other types of entrepreneurship, with the primary difference in the activity field.
- Agricultural entrepreneurship plays an effective role in fulfilling self-sufficiency and food security.
- Agricultural entrepreneurship contributes to economic diversification beyond fossil fuels.
- Agricultural entrepreneurship effectively decreases the import bill.
- Despite the privileges granted by the state, the agricultural sector's profitability still needs to achieve self-sufficiency and food security.

Based on these findings, we suggest the following recommendations:

- Encouraging entrepreneurial spirit among youth and university students.
- Facilitating administrative and legal procedures for agricultural investors to apply for financing.
- Providing non-interest-bearing loans to finance agricultural activities.

- Providing support to agricultural entrepreneurs to develop their skills and technical efficiency.
- Establishing partnership agreements with leading agricultural countries to benefit from their expertise.
- Employing technology in the agricultural sector.
- Expanding rural electrification networks to encourage entrepreneurs to expand their investments.
- Organizing exhibitions for agricultural products to introduce products and exchange experiences among farmers.

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