

The Food Industry in Algeria: Reality and Challenges

- An Analytical Study for the Period 2000-2022-

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Abstract:

This study aims to provide insights into the status of the food industry in Algeria, a critical sector for achieving food security, self-sufficiency, and economic diversification away from reliance on the fuel sector. The analysis covers the period from 2000 to 2023, revealing significant growth in the food industry. However, it still struggles to meet local food demands due to inadequate infrastructure, lack of financial support, outdated technology, management issues, and marketing difficulties. Additionally, the sector is impacted by climate change and unstable environmental conditions, affecting agricultural productivity and output quality. The study emphasizes the urgent need for government policies and strategies to support the sector's growth and development.

Keywords: *food industry, food security, economic diversification.*

Jel Classification Codes : *XNN ; XNN.*

1. Introduction :

The food industry represents a cornerstone of the Algerian economy, as it contributes significantly to providing the necessary food products to the local market and achieving food security. In recent years, Algeria has witnessed remarkable developments in this sector, influenced by economic, political, and social factors, as well as the challenges it faces in the context of globalization and technological innovation. Despite the efforts made by the government and relevant institutions to improve and develop the food industry, this sector still faces a set of major challenges. These challenges include a shortage of raw agricultural materials, not keeping up with advanced technology, a lack of funding, poor infrastructure, and bureaucratic and regulatory constraints that hinder innovation and growth. Moreover, fluctuations in the world market and prices for raw materials affect the sustainability and competitiveness of this sector. In this research, we will shed light on the current reality of the food industry in Algeria, analysing the factors affecting it and identifying its challenges. We will also review the opportunities available to improve this sector and enhance its role in achieving sustainable economic development. We aim to provide a comprehensive vision that helps decision-makers and investors and enables those involved in the industry to comprehend the current situation and proactively envision the future positively and constructively by addressing the following question:

The problem :

-What is the current state of the food industry in Algeria, and what are the key challenges impeding the development and growth of this sector?

Sub-questions:

- 1 .How can the present state of the food industry in Algeria be described?
- 2 .What role does the food industry play in the Algerian economy?
- 3 .What are the primary challenges that hinder the development and growth of the food industry in Algeria?

Hypotheses:

- 1 .Algeria has made substantial progress in advancing the development of its food industry.
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- 2 .The food industry in Algeria is crucial in satisfying local food demands and reducing the overall import bill.
- 3 .The food industries in Algeria still face various challenges that impede their progress toward achieving the intended goals.

Research objectives:

- 1 .Identify the food industry sector, its contribution, and standing in the national economy ;
- 2 .Examine the current state of the food industry and the key challenges and obstacles it encounters ;
- 3 .Proposing solutions to advance the role of this sector in achieving food security .

Importance of research :

This study's relevance is apparent, as it focuses on a key sector that directly contributes to the attainment of food security, developing the national economy, and providing job opportunities. This research helps identify challenges facing the food processing industry, such as a lack of technology and financing, and highlights opportunities to improve this sector. It also recommends that decision-makers develop effective policies that support growth and encourage innovation and technological development in the food industry .

Study Methodology: This study utilized a descriptive approach, relying on a desk survey to explore the theoretical framework and collect data and information related to the topic. The analytical approach was then applied to analyze the gathered statistics and data.

Study structure:

- ✚ The theoretical framework of the study;
- ✚ The reality of the food industry in Algeria;
- ✚ Challenges and obstacles facing the food industry in Algeria.

1. The theoretical framework of the study:

Preface: The industrial sector is pivotal in promoting the economic development of nations, with countries striving to enhance this sector and boost its contribution to the gross domestic product (GDP). This contribution serves as a key indicator, widely accepted internationally, for evaluating the economic and social progress of a country. A higher contribution from the industrial sector to the national product signifies a greater potential for sustainable development and long-term resilience. A strong industrial base also fortifies the economy, enabling it to better navigate challenges and economic fluctuations.

1.1 Definition of the food industry: Agro-industrialization, also known as the food industry, represents a segment of the manufacturing sector focused on processing raw materials and intermediate products originating from agriculture, including food, beverages, and tobacco.

1.1.1 The first definition: The food industry is the scientific investigation of processing plant and animal raw materials into various forms of food products. These products are preserved for extended periods, allowing consumption during different seasons or other locations. This preservation ensures that the food remains usable from a health and nutritional standpoint (Guettaf Souhaila & Bouzroua Lynda, 2019).

1.1.2 Second definition: Materials are processed through various production methods to create goods of different types and forms. (Momtaz Nagy Mohamed Al-Sebaai, 2002, p. 204) According to specific standards, these industries aim to preserve food products for the longest possible duration, thanks to processing, preservation, canning, conditioning, etc., and use in line with the new consumer conditions imposed by civilizational development (Nourhan Groun, 2017, pp. 160–161).

1.1.3 Third definition: The food industry refers to the transformation of agricultural raw materials into finished or semi-finished products ready for consumption, use, or sale. This involves using different technologies and methods to modify raw materials' physical, chemical, or biological properties, which adds value (PricewaterhouseCoopers, 2023).

1.2 The Strategic Importance of the Food Industry: The food industry sector holds significant importance in Algeria's economy, being one of the primary branches of the manufacturing sector that the Algerian government seeks to strengthen in order to enhance its contribution to the GDP. The substantial food import bill further compels the state to develop a strategic plan aimed at improving the performance of enterprises operating within the food industry sector. Currently, imports of food commodities represent 28% of the country's total industrial imports.

Manufacturing and preserving foodstuffs from agricultural sources that exceed the need for consumption in the seasons of their natural production to benefit from them throughout the year, which achieves a balance between supply and demand:

- Preserving public health through the provision of healthy and safe food (Elham Mohamed Sayed Ahmed, 2019, p. 60)
- Manufacturing of surplus agricultural products and converting them into products of higher economic value
- Minimizing the costs of storing and transporting agricultural raw materials, with the added advantage of exporting surplus in the form of preserved products to secure financial returns for producers and contribute to the country's economic growth (Ramadan Ahmed Abdul Ghani, 2007,

p. 4).

- The food industry plays a pivotal role in stimulating the development of various industries directly associated with it, such as the manufacture of various packaging materials, tin cans, and glass cans, as well as packaging materials, etc., The manufacturing machinery industry, chemical preservatives, and therefore have a close link to other manufacturing industry (Fawzi Abdelrazak, 2007b, p. 42)
- * Food industries help to regulate the trade balance of foodstuffs, preventing their prices from falling in the seasons of their production to a degree that encourages their production, but they leave the field open for the sale of surplus quantities to manufacturing plants At Reasonable Prices, and their availability in the seasons of scarcity contributes to the fact that their prices do not Rise and
- The food industry is considered a means to strengthen the economic integration between agriculture and industry, and this is evidenced by its strong relationship with various other economic actors, as the continuation of food manufacturing depends on the availability of agricultural raw materials as a basic raw material in the food industry
- The food conversion industry creates jobs at various levels, supporting economic and social development and food security by eliminating potential pollutants and pathogens, contributing to making foods safer for consumption (PricewaterhouseCoopers, 2023).

1.2 The food industry performs: several important functions for individuals, society, and the national economy. These functions can be summarized as follows:

- Ensuring food safety and preservation.
- Providing nutrition and suitability for consumption.
- Offering diversification and affordability (Salim Bouhidel & Mohamed Louchon, 2019, p. 115)

1.3 Classification of the Food Industries in Algeria:

According to the Algerian Nomenclature of Activities (ANA), food industries are classified within Section D of the manufacturing sector, under the branch of agricultural and food industries (Section 10). The NAA identifies eleven sub-branches within the food and agricultural industries, which are listed as follows:

1. The processing and preservation of meat products;
2. The processing and preservation of fish products;
3. The processing and preservation of fruits and vegetables;
4. Production of vegetable and animal oils and fats;
5. The manufacture of dairy products;
6. The processing of grain products;
7. The manufacture of starch-based products;
8. The manufacture of bakery goods, confectionery, and pasta products;
9. The manufacture of various other food products;
10. The manufacture of feed for animals.

In addition, the National Office of Statistics (ONS) has extended the classification of the food industry to include the food sector under Section 10, the beverage industry in Section 11, and the tobacco products industry.

Thus, according to the ONS, the food industry in its broader context encompasses the processing and preservation of food products, as well as the beverage industry and the tobacco products industry. As a result, the current classification consists of 21 sectors, 88 branches, and 656 sub-branches, aligning with the current global system. This contrasts with the previous system, which was characterized by significant deficiencies and overlaps in activities. (Ben Giar Mohamed & Chiboui Selim, 2022, p. 45) As illustrated in the following table in detail.

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Activities	Activity number	Division	Division number
Transforming and preserving butcher meat Transformation and preservation of poultry meat * Conversion of meat-based products	10.11 10.12 10.13	Meat transformation, preservation, and preparation	10.1
* Transformation and preservation of fish, crustaceans, and mollusks	10.20	Transformation and preservation of crustacean fish And slugs	10.2
* Transforming and preserving potatoes Transformation and preservation of tomatoes Fruit and vegetable juice industry * Transform and save other greens and fruits	10.31 10.32 10.33 10.34	Converting and preserving fruits and vegetables	10.3
Olive oil industry Manufacture of oils and other fats * Manufacture of margarine and similar edible fats	10.41 10.42 10.43	Manufacture of animal oils and fats And vegetarianism	10.4
Manufacture of liquid milk and other fresh products Cheesemaking Manufacture of other dairy products * Ice cream and the ice cream industry	10.51 10.52 10.53 10.54	Dairy products manufacturing	10.5
Grain processing * Manufacture of starch products	10.61 10.62	Grain processing, manufacture of starch products	10.6
Bakery and confectionery Fresh and exclusive desserts Traditional confectionery industry Manufacture of biscuits, sweets, and preserved sweets * Manufacture of pastes and couscous	10.71 10.72 10.73 10.74 10.75	Manufacture of bread, sweets, and industrial dough Manufacture of bread, sweets, and industrial dough	10.7
Sugar industry Cocoa, chocolate, and sugar industry Coffee and tea processing Spices and the spice industry Ready-made meals industry Making homogeneous food preparations or diet foods * Manufacture of other food products that are not classified in a different position	10.81 10.82 10.83 10.84 10.85 10.86 10.89	Manufacture of other food products	10.8
Feed industry for farm animals * Pet food manufacturing	10.91 10.92	Feed industry	10.9

Alcoholic beverage industry	11.01	Beverage industry	11.0
Drinking water industry	11.02		
* Production of refreshing drinks	11.03		

Source: The Algerian Nomenclature of Activities (NAA Rev 1 Fr)

2. The reality of the food industry in Algeria:

The agro-food industry is considered the second largest sector in the country, after the hydrocarbon industry, and stands as the dominant manufacturing sector. As of 2018, it accounted for about 38% of the total value added in industries excluding hydrocarbons and contributed 2% to the country's GDP. The agri-food sectors are becoming increasingly significant in Algeria's economic landscape, influenced by several factors: the growing population, state price subsidies, the portion of household budgets allocated to food, and evolving consumption habits that favor processed food products. (PricewaterhouseCoopers, 2023).

The number of active institutions in the Food Industry Division exceeds 31 thousand institutions, and the Agricultural Food Industries Branch is controlled by five main activities that constitute approximately 69% of the total projects authorized in the branch and are distributed as follows:

- Bakery% 27.5
- Mills 13.5%,
- Production and transformation of milk: 12.8% and 7% of the canning activities of food products and soft drinks (Dahbia Latrach, 2015, p. 197).

2.1 The relationship of the food industry with the economic sectors:

The food industry has strong interconnections with various other sectors of the economy, with these relationships encompassing cooperation, exchange, and mutual influence.

2.1.1 The relationship between the food industry and other industrial sectors : The food industry is considered one of the broadest manufacturing industries in the world, utilizing agricultural raw materials to produce food and beverages of various types. Therefore, it plays a significant role in reducing agricultural waste and increasing the added value of goods, while also employing a large percentage of the workforce and achieving a substantial part of food security (Elham Mohamed Sayed Ahmed, 2019, p. 39). In its broad sense, it not only includes the processing of raw food materials but also encompasses other industries directly related to it, even if they are not food industries themselves, such as the packaging materials industry, manufacturing machinery, chemical materials, and other additives and enzymes. Based on this, it can be said that food industries are considered among the basic industries for manufacturing due to the large volume they occupy within these industries (Fawzi Abdelrazak, 2007, p. 36).

The packaging industry is considered one of the sectors most closely linked to the food industry, as about 75,000 companies operate in the packaging sector in Algeria, many of which are based in the field of food packaging, which is divided into four main types: plastic, cardboard, metal, and glass. Plastic and cardboard are undoubtedly the most important. Types of packaging development and use, especially in the food sector. The superiority of plastic and cardboard used in the market is due to the availability of raw materials, their recyclability, production costs, and consumption habits.

As for metal and glass packaging, it is less commonly used but shows great growth potential in the coming years, given that the national need is still weakly covered by local production. (PricewaterhouseCoopers, 2023).

2.1.2 The relationship between the food industry and the agricultural sector: There is a close and integrated relationship between the agricultural sector and the food industry.

(Ibrahim bin Muhammad Al-Hassoun, 2014, p. 13) And this relationship is embodied in several basic aspects.

- **Providing raw materials:** The food industry sector relies heavily on the agricultural sector to provide basic raw materials such as grains, fruits, vegetables, meat, and dairy. Agricultural products are the basis of food processing operations.
- **Stimulating food industries in industrial areas:** It supports the achievement of industrial agricultural integration by establishing food and agricultural industries and benefiting from agricultural products, which supports food security, stimulates the agricultural sector, and increases cultivated areas during the coming period (Yanal Barmawi, 2023).
- **Achieving added value:** The food industry transforms primary agricultural products into food commodities with high added value. Through manufacturing and packaging processes, a variety of food products are produced that meet the needs of consumers and boost the economy
- **Rural development:** Integration between the two sectors contributes to the development of rural areas. Food factories provide jobs for local people and create economic opportunities, helping to improve living standards and reduce migration to cities.
- **Ensuring food security:** Through cooperation between the two sectors, higher levels of food security can be achieved. The agricultural sector works to produce sufficient quantities of food, while the food industry ensures that these products are stored and processed in a way that ensures the availability of food throughout the year.
- **For export and trade:** Integration between the two sectors forms a strong basis for enhancing food exports. By improving the quality of agricultural products and processing them for global markets, countries can achieve significant economic returns from food exports

2-1-3 The relationship between the food industry and employment: The food industry is one of the most vital branches of industrial production in Algeria, significantly reducing unemployment and creating job opportunities. It provides more than 150,000 job opportunities, or 40% of the industrial workforce, and works in more than 23,000 institutions, according to Statistics for 2013. These numbers have witnessed a significant change with the significant growth of companies active in the food industry, which numbered 17,000 companies, 95% of which are private (Ministère de l'Environnement et des, 2023, p. 13). It employs approximately 170,000 workers, according to a statement by the Minister of Industry in 2023 (Algerian Press Agency, 2023).

2-2 The Contribution of Agro-Food Industries to GDP and Total Added Value:

The agro-food industries represent between 50% and 55% of the industrial GDP, excluding the hydrocarbons sector, and contribute between 45% and 50% of the industrial added value outside the hydrocarbons sector. (Dahbia Latrach, 2015, p. 198).

Table No. (2) The Development of the Added Value of the Food Industry in Algeria During the Period (2016/2021)

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Years The nature of the activity	2016		2017		2018		2019		2020		2021	
	added value	%	added value	%	added value	%	added value	%	added value	%	added value	%
Private sector	340,77	87,4734	357,17	87,52	377,94	87,20	389,02	87,48	408,91	87,83	426,41	87,21
Public sector	48,80	12,5266	50,94	12,48	55,46	12,80	55,68	12,52	56,67	12,17	62,54	12,79
the total	389,57	100	408,11	100	433,40	100	444,70	100	465,58	100	488,95	100

Source: General Directorate of Strategic Monitoring, “The Statistical Information Bulletin”, 2022, 36.

Based on the table data, the added value of the food industries at current prices has continuously increased. This increase can be attributed to the private sector's contribution, which now accounts for more than 87.21% of the industrial sector's added value. Meanwhile, the public sector's contribution remains at around 12.79% in 2021.

This trend results from the government's efforts to open up opportunities for various private investments while providing the necessary support and guidance to investors in all forms, whether they are individuals or legal entities.

2-3 The Reality of the Food Industry Branch within the Small and Medium Enterprises Sector:

The structure of the food industry in Algeria is characterized by a significant number of small and medium-sized private enterprises across all sectors that constitute the activity. These enterprises are primarily concentrated in (Fawzi Abdelrazak, 2007b, p. 162):

- Mills,
- Production and processing of milk,
- Food packaging and wrapping,
- Soft and mineral beverages,
- Canning of vegetables and fruits.

Table No. (3) the development of the number of private small and medium-sized enterprises in the field of halal food industry for the period (2021/2022)

Years	2021	Recorded movement during the year 2022				2022
		Creation	Cancellation	Appeal	Difference	
		1	2	3	4	

food processing industry	34418	2800	257	476	3019	37437
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Source: General Directorate of Strategic Monitoring, Statistical Information Bulletin 38

According to the table above, small and medium-sized enterprises (SMEs) operating in the food industry experienced significant growth of 8.77% in just one year. This growth can be attributed to the long-term impact of several factors, including government policies such as tax deductions and incentives outlined in investment laws. (Nourhan Groun, 2017, p. 164). These policies encourage the growth and development of this sector to meet the needs of the national market, achieve self-sufficiency, and ensure food security.

3.Challenges and Obstacles Facing the Food Industry in Algeria:

The Algerian food industry is confronted with a variety of structural and operational challenges that significantly impede its growth and development. These challenges can be categorized as follows:

3.1 Weakness of the Agricultural Sector (Agricultural Inputs): The agricultural sector serves as the principal provider of raw materials for the food industry. Nevertheless, the limited agricultural output, when compared to the substantial expansion of the food industry, has hindered its ability to consistently supply the necessary inputs, resulting in a reliance on seasonal production.

As a result, this sector depends mainly on imported raw materials, which are affected by fluctuations in global markets, negatively impacting the stability of food industry enterprises. However, there is a desire from the government to work more with local raw materials to reduce the import bill.(Ministère de l’Agriculture et de la Souveraineté alimentaire, 2024, p. 2).

3.2 Increasing Population Growth: As of July 1, 2023, the estimated resident population of Algeria is 46,344,000. The natural increase recorded during the year reached 703,000 people, with a natural growth rate of 1.52%. This rate continues its downward trend that began in 2017, but with a more pronounced pace since 2020, where we recorded a decline of 0.41 percentage points compared to 2019. This decline is mainly attributed to the subsequent increase in the number of deaths recorded during the period 2020-2021, which is linked to the continuous decrease in the number of births that began in 2017. As of January 1, 2024, the resident population reached 46,700,000, as illustrated by the graph.

This population growth significantly impacts the food industry, as it is associated with an increased demand for food. This connection between population growth and the food industry is evident in several ways:

3.3 Increased Demand for Food Resources: With the growing population, the demand for food resources increases, putting pressure on the agriculture and food industries. This necessitates improving agricultural productivity and adopting modern technologies to meet the needs of the expanding population.

3.4 Resource Scarcity: As the population grows, certain natural resources (such as arable land and water) may become limited. This presents a significant challenge for the food industry in maintaining adequate production while conserving these resources.

Consequently, population growth presents a challenge to the food industry. The pressures on resources and the environment, along with increased difficulties in production and distribution, require the adoption of sustainable and innovative strategies to meet the needs of a growing population without compromising resource availability, particularly for Algeria, which continues to depend heavily on imports to satisfy the rising food demand.

3.5 Production Techniques: The majority of food industries in Algeria rely on small and medium-sized investments, except for some basic food industries such as oils. Due to modern technological developments, production patterns have diversified, and there has been an accumulation of production techniques. However, most food manufacturing units in Algeria still depend on moderately modern means and techniques, which results in low efficiency.

3.5 Research and Development Effectiveness: A substantial gap persists between universities and research centers on one side, and industrial companies on the other, restricting the industry's ability to leverage academic research. Moreover, the limited number of collaborative projects between universities and companies weakens the practical application of research outcomes within the industrial sector. Research and development efforts in Algeria's food industry face numerous challenges, particularly a lack of funding and insufficient government support, weak technological infrastructure, brain drain, bureaucratic complexities, and insufficient collaboration between universities and industry.

3.6 Intense Competition from Foreign Companies: The food industry sector faces fierce competition from both domestic and international companies. This competition necessitates that companies invest in marketing and develop effective marketing strategies to differentiate their products from those of competitors.

The Algerian food industry sector is characterized by weak competitiveness, attributable to a lack of experience compared to major global corporations.

3.7 Repercussions of Rising Global Raw Material Prices:

Fluctuations in agricultural input prices are among the most prominent challenges, directly affecting production costs, rising input prices, such as grains and oils, can lead to increased finished product costs, posing a significant pricing challenge. Global raw material price volatility directly impacts the performance of the Algerian food industry sector, particularly given insufficient domestic production.

These prices are influenced by several factors, including:

Rising Oil Prices.

Customs restrictions on exports.

Climatic conditions and their effects on agricultural products.

Exchange rate depreciation.

Declining global food reserves.

Monopolistic practices by traders and importers.

3.8 Laws and Regulations: Laws and regulations concerning food safety, packaging, and advertising are constantly evolving, requiring companies to allocate financial and human resources for compliance. This increasing complexity in marketing operations, in turn, leads to investor reluctance, particularly among foreign investors, to establish projects in this sector.

3.9 Infrastructure and Transportation: Despite substantial efforts by the Algerian government to improve infrastructure for the promotion of various economic sectors, Algeria continues to face significant challenges in transportation and storage infrastructure. Weak road and transportation networks impede the transport of food products from production areas to markets, affecting product quality and increasing transportation costs.

3.10 Financing and Investment: Algeria implements various economic programs to develop the food industry by providing diverse facilities and support to access funding, whether for establishing new food industry enterprises or expanding existing operations. However, a significant segment faces difficulties in securing necessary financing, limiting the capacity of enterprises to invest, particularly in technology and innovation, due to the high costs associated with research and development.

3.11 Environmental Challenges and Sustainability: The food industry faces environmental challenges such as water scarcity and climate change, which impact agricultural production. Companies need to adopt sustainable agricultural practices to conserve natural resources and ensure the continuity of production.

4 Suggested Solutions:

4.1 Enhancing Competitiveness:

- **Developing Expertise:** By investing in specialized training programs for workers in the food industry sector, focusing on the latest technologies and best practices, and encouraging partnerships with leading global companies for knowledge exchange and technology transfer.
- **Improving Product Quality:** By applying international quality standards at all stages of production, from raw material selection to packaging, in addition to investing in research and development to develop new and innovative products that meet consumer needs.
- **Developing Marketing Strategies:** Conducting in-depth market studies to understand consumer needs and preferences, and using modern marketing tools, such as digital marketing, to reach the largest segment of consumers.

4.2 Addressing the Challenges of Rising Raw Material Prices:

- **Increasing Domestic Production:** Supporting the agricultural sector as the cornerstone of the food industry by increasing domestic production of agricultural raw materials and providing incentives for farmers to adopt modern farming practices that increase productivity.

- **Diversifying Import Sources:** By exploring new markets to import raw materials at competitive prices, and signing trade agreements with other countries to ensure the stability of raw material supplies.
- **Improving Inventory Management:** Developing effective inventory management systems to reduce waste and minimize the impact of price fluctuations.

4.3 Facilitating Compliance with Laws and Regulations:

- **Simplifying Procedures:** Simplifying procedures related to licenses and approvals required to establish and operate food establishments, and creating a unified electronic platform to facilitate investors' access to various information, laws, and related amendments.
- **Providing Technical Support:** Providing technical support to food establishments to comply with laws and regulations related to food safety and quality, while organizing workshops and training courses to educate investors about laws and regulations.

4.3 Improving Infrastructure and Transportation:

- **Developing Road and Transportation Networks:** Investing in the development of road and transportation networks to improve the connection between production, manufacturing, and distribution areas, and developing logistical infrastructure, such as refrigerated warehouses, to ensure the safety and quality of food products.
- **Facilitating Transportation Procedures:** Simplifying procedures related to the cross-border transport of food products during export operations.

4.4 Facilitating Access to Financing and Investment:

- **Providing Soft Financing:** Providing soft financing to food establishments, especially small and medium-sized enterprises, to finance their expansion and development projects, and establishing specialized investment funds in the food industry sector.
- **Encouraging Foreign Investment:** Providing incentives for foreign investors to invest in the food industry sector, facilitating foreign investment procedures, and providing an attractive investment environment.

4.5 Addressing Environmental Challenges and Sustainability:

- **Encouraging Sustainable Agricultural Practices:** Providing support to farmers to adopt sustainable agricultural practices, such as drip irrigation and the use of organic fertilizers, and encouraging the use of renewable energy in agricultural and industrial production processes.
- **Rationalizing Water Consumption:** Developing modern irrigation techniques that reduce water consumption and encourage the reuse of water in industrial production processes.
- **Combating Climate Change:** Investing in research and development to develop drought- and heat-resistant agricultural varieties, benefiting from leading international experiences in this field, and implementing programs to raise awareness of the importance of environmental conservation.

4.6 Supporting Research, Development, and Innovation:

- **Establishing Research Centers:** Establishing specialized research centers in the food industry and supporting scientific research in the field of developing innovative food production technologies.
- **Encouraging Innovation:** Providing incentives for food establishments that adopt innovation and modern technology, and holding competitions and awards to encourage innovation in the food industry.

Conclusion:

This study demonstrates that the food industry in Algeria represents a vital sector with significant opportunities for growth and economic development. This industry has witnessed remarkable evolution and growth in recent years, validating the first hypothesis. The number of active enterprises in this sector, their activity volume, and the value added to the gross national product have increased, alongside the number of employees in this branch, which has helped reduce unemployment and encouraged the agricultural sector to increase production and improve quality to meet the continuous demand for raw materials. The impact of the food industry's growth in Algeria extends to most economic activities due to its reciprocal and integrated relationships. However, this growth remains weak compared to Algeria's substantial potential and the sector's inability to meet all food product demands. This is evident in the high percentage of food imports, which incurs significant costs to the public treasury due to elevated prices of imported products and their susceptibility to global price fluctuations and international crises. Consequently, Algeria fails to achieve food security, a critical challenge for any economy. This invalidates the third hypothesis. The import bill remains high for both fully processed food products and semi-processed and raw materials, attributed to numerous challenges hindering the realization of its full potential. These challenges range from significant reliance on imported raw materials and a weak agricultural sector unable to provide sufficient raw materials, to obstacles related to infrastructure, transportation, financing, regulatory challenges, and an unstable legal environment, among other impediments that must be overcome to achieve sustainable growth.

Nevertheless, the Algerian government's commitment to enhancing domestic production, the efforts of local producers, and continuous technological advancements open new horizons for improving production quality and increasing competitiveness. The adoption of supportive policies, infrastructure development, provision of necessary financing, and enhancement of education and training in this sector will form the cornerstone for propelling the food industry towards a brighter and more sustainable future. Yet, reliance on imports to meet the steadily increasing domestic demand persists, necessitating the implementation of measures and procedures to advance this sector.

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