



THE ROLE OF THE FOOD INDUSTRY IN ACHIEVING FOOD SECURITY IN ALGERIA

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Abstract:

Algeria, like many other countries, is striving to achieve food self-sufficiency with all available resources, whether natural, material or human, and thus food security, which allows it to maintain national sovereignty. This is reflected in a successful economic policy that is generally based on the agricultural and industrial sectors. The food industry, in particular, is one of the most important transformative industrial sectors, as it actively contributes to feeding people and aims to achieve the highest possible level of food self-sufficiency. This is despite the obstacles and difficulties it faces due to limited resources, lack of expertise and under-utilisation of available natural resources. There is also a dependence on external sources of raw materials, despite the fact that Algeria has the agricultural resources to meet the needs of these factories. The food industry faces many challenges in order to activate its role and contribute to the supply of food to Algerian consumers. This can be achieved by stimulating investment, promoting small and medium-sized enterprises and encouraging youth to engage in the agricultural sector in order to strengthen the food industry and achieve food security and nutrition in Algeria.

Keywords: Agriculture, food industry, food security, Algeria

INTRODUCTION:

The food industry is considered a supporting and motivating element for the development of the agricultural sector and an important means of achieving food security and economic stability, particularly in terms of trade balance. Its prosperity creates a balance by increasing exports and reducing food imports. This is due to its ability to support social and economic development through the export of a wide range of food products manufactured in local industrial plants. It can also meet a significant proportion of Algerian consumers' needs. Furthermore, this sector serves as a strong support that can be relied upon to propel other economic sectors towards growth and development. In order for the food industry to achieve its desired and expected goals, it is necessary to remove obstacles and address the challenges it faces. This can be achieved by the government focusing its efforts on encouraging investment in the productive sectors of the food industry, restructuring institutions and opening up broad opportunities for both the public and private sectors. These measures will ensure a significant role in the overall development process and act as factors that guarantee a genuine development dynamic, enabling the diversification of national economic sources. Moreover, the agricultural sector plays a crucial and fundamental role in the development of other sectors of the economy, particularly industry. This importance lies in the supply of raw materials to industry and in the agricultural sector's need for various industrial products, such as fertilisers and agricultural inputs. Experience has shown that delays in the agricultural sector can threaten the progress of manufacturing and economic growth in all sectors of the national economy. Conversely, the inability of industry to meet the demands and needs of agriculture is an obstacle to the development of agricultural production and productivity.

Moreover, the relationship between agriculture and industry is characterised by complementarity. Agriculture contributes to the marketing of industrial goods, as agricultural products such as machinery, chemical fertilisers, pesticides, equipment, dams, reservoirs, irrigation canals, electric motors and others are marketed to the agricultural sector. On the other hand, industry needs raw materials from the agricultural sector, such as the food, textile, furniture and pharmaceutical

industries. However, our study will focus on one sector that relies heavily on agricultural products as inputs: the food industry. It can contribute to improving the food security of individuals in society and thus play an important role in the economic development of the country, if this sector is well integrated with the agricultural sector.

Consequently, the issue of food security, with its various dimensions, has received widespread attention at all levels. In the light of regional and global developments, it has become a top priority for the relevant authorities and a concern for citizens, as it directly affects them. Food security is a sensitive issue for Algerian agriculture and industry. It is therefore necessary to launch a development process by creating industrial centres based on geographical and natural advantages, particularly in the agricultural sector. This will provide a promising future for the food industry in Algeria.

And Algeria, like other countries, has implemented short- and long-term plans to achieve food security and sustainable agriculture. This includes activating economic diversification and placing more emphasis on the food industry, as well as drawing on the experience of leading Western countries in this regard. In light of the above, the main question that arises is as follows:

Given the current reality of the food industry in Algeria, can the existing food industry achieve food security in Algeria?

In order to answer this question and obtain the desired results, we adopted a descriptive-analytical approach, in keeping with the nature of the subject. This involved discussing the basic concepts related to food industries and food security, and examining the reforms needed to achieve them.

In order to answer the question posed, the research was divided into two parts. The first section discussed the current reality of the food industry in Algeria, while the second dealt with the obstacles facing the food industry in Algeria and the prospects for its development.

Chapter One: The current reality of the food industry in Algeria.

The food industry is considered an important sector because it is one of the main branches of the manufacturing sector. In turn, the manufacturing sector contributes directly to increasing domestic production and national income. It also acts as a link between the agricultural and industrial sectors. In addition, the food industry sector is of fundamental importance because of its direct relationship with food production in its raw form, as it is one of its main inputs. The industrial sector plays a key role in development and economic progress, as it is the basis for meeting the basic needs of citizens and creating employment opportunities. Therefore, in this study, the first section will discuss the concept and characteristics of the food industry, while the second section will discuss the importance of the food industry in Algeria.

Section One: Concept and characteristics of the food industry in Algeria.

1. Concept of the food industry:

The food industry is considered one of the most important sectors among the main transformative industries. It is a fundamental pillar in the formation of the strategic economic dimension, as it effectively contributes to ensuring food security for people and aims to achieve the highest possible level of self-sufficiency in food products. On this basis, we can define the food industry as follows: "The food industry is the branch of industry that transforms agricultural raw materials according to specific specifications. These industries work to keep food products usable for as long as possible by processing, preserving, adapting and using them in ways that meet the proper consumption conditions imposed by social development¹".

The food industry is also defined as "The collective establishments primarily engaged in the transformation of agricultural materials for final consumption as food. It is an important part of the food system, which includes activities classified in both agriculture and food distribution"².

The main agri-food industries can be divided into two branches. The first is the plant-based industry, which includes the grain industry. This involves the milling of cereals in specialised mills to produce semi-processed materials used as inputs for the production of consumer food products. This process involves the transformation of hard and soft wheat to produce products such as semolina and flour... etc³.

On the other hand, the food industry in Algeria includes the production of various types of pastry and dough, as well as fruits and their derived products such as juices and dried fruits. It also includes

vegetables and their other products such as oils (olive oil, sunflower oil, etc.). The second branch of the food industry focuses on animal products, including activities related to fishing, livestock farming and the production of milk and its derivatives, as well as red and white meat and canned fish.

There is no single definition of food security. However, the Food and Agriculture Organization (FAO) defines it as “ensuring that all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life”⁴. Based on this definition, food security is achieved by ensuring that people have access to sufficient food, either through domestic production or by meeting consumption needs through international markets.

2. Characteristics of the food industry:

The food industry has unique characteristics that set it apart from other industries. These characteristics include diversity, large scale, seasonality and more. Here are some of its key characteristics:⁵

- Direct link with agriculture in the production of raw materials or simple materials, with most of the related institutions being transformative entities that form part of a long chain known as the food chain. Their output is characterised by diversity and evolution, reflecting the diversity and changing needs and desires of consumers.
- The food industry contributes to the prosperity of agriculture through its close relationship with it. It also serves as a source of foreign exchange earnings by reducing imports or increasing exports of food products.
- It helps to transform perishable foods into more stable materials, enabling some to be preserved for several days or weeks and others for several months or years, depending on the method of preservation. This leads to a variety of foods being available throughout the year, such as canned, frozen and dehydrated foods.
- It helps to regulate the balance of trade in food products by preventing a fall in prices during periods of abundant production, which could discourage production, and by allowing surplus quantities to be sold to processing plants at reasonable prices.
- The food industry focuses on the preparation of nutritionally balanced foods, and processed foods are relatively inexpensive compared to fresh foods.
- It directly influences the promotion of other related industries such as packaging and preservative chemicals.
- The presence of a domestic food industry helps to reduce dependence on imported processed foods.
- It contributes to the production of foods with special specifications and compositions for patients and children, ensuring that they do not adversely affect their health.
- The development of modern food production methods in line with the times and technology, such as fish processing on board fishing vessels in the open sea, helps to conserve rapidly perishable fish stocks, with vessels staying at sea for more than two months.
- Food industries are subject to seasonality due to the seasonal nature of their raw materials and also due to fluctuations in demand⁶.

THE IMPORTANCE OF THE FOOD INDUSTRY:

The development of the food industry contributes directly to the achievement of the most important development goal declared by all governments, regardless of their orientation, which is to improve the standard of living of their citizens. Through the development of this type of industry, the principle of ensuring social and economic stability is achieved⁷. Therefore, the food industry is of great economic and social importance, which can be summarised as follows:⁸

- Providing food in the right quantity, quality and time.
- Preserving agricultural raw materials so that they do not spoil until they are consumed or processed.
- To provide an integrated system to protect consumers by providing safe and wholesome products.
- Adhere to scientific quality specifications in the food industry to improve food products.
- To facilitate consumers' ability to satisfy their consumption needs by ensuring that products meet their preferences.

- Enriching foods with value-added nutrients through the addition of minerals or vitamins.
- Contribute to modern production systems as they adapt to technological advances.
- Preserving agricultural raw materials to protect them from spoilage until consumption or processing, while providing a comprehensive system to protect consumers by offering safe and healthy products. Furthermore, the food industry plays an active role in bridging the gap between production and consumption, as many agricultural products are seasonal, although consumers demand them or their derivatives on an annual basis⁹.

Agri-food establishments also contribute to the continuity of businesses by employing a large number of permanent or temporary workers. The food industries are therefore of particular importance as they are considered to be an important sector, providing employment opportunities for a large part of the population and achieving continuous growth rates each year. They also serve to complement the role of the agricultural production sector by providing services that are primarily focused on transforming agricultural products into a variety of goods that meet consumer needs, as well as seeking to export to foreign markets¹⁰.

In Algeria, for example, the agri-food industry is of great importance to the Algerian economy and is considered to be one of the main branches of the manufacturing sector, which contributes directly to increasing domestic production and national income. It serves as a link between the agricultural and industrial sectors, and its importance lies in its direct relationship with food production in its raw form, as it is considered one of its essential inputs. Algeria is therefore working to develop domestic production by improving the self-financing rate of widely consumed goods. To achieve this, the government has developed a strategy for the development of the food industry, which focuses on achieving food security for the country¹¹.

The second theme: Challenges facing the food industry in Algeria and prospects for its development.

The food industry sector in Algeria has not yet reached the level required to meet the food needs of citizens and achieve food security. This calls for the development of economic policies to encourage investment in this sector and other sectors related to food security. In order to explore this, the first part of this paper will analyse the obstacles facing the food industry in Algeria, while the second part will discuss the important ways to upgrade and stimulate this vital sector.

The first theme: Barriers to the development of the food industry sector in Algeria:

Every industrial sector is accompanied by a series of obstacles that can hinder many investors who wish to enter this sector, especially in terms of the capital required on the one hand, and the availability of the necessary food materials for the start-up and production of manufactured food products on the other. Some of the main obstacles facing the food industry in Algeria can be summarised as follows:¹²

1. The state's policy of opening up the economy and liberalising foreign trade has led to the entry of foreign goods into Algerian markets, which has had a negative impact on the competitiveness of local production.
2. The phenomenon of smuggling and market flooding is widespread in the Algerian market.
3. The Algerian economy lacks a clear industrial development strategy.
4. Lack of adequate industrial infrastructure.
5. Neglect of sectors that provide the basis for industrial development, such as agriculture.
6. The lack of specialised national labour in various food industries.
7. Neglect of research and industrial development centres.
8. Fraud in domestic products: There are many domestic products that suffer from fraud and non-compliance with international standards and specifications. However, not all products suffer from fraud, as there are local products of high quality that have obtained quality certification.
9. Small and medium sized industries operating in the agri-food sector represent a full potential for growth and adaptation to the agricultural sector. However, despite the establishment of various national agencies to promote and develop this industry, no significant progress has been made.
10. Capital requirements: Capital requirements are a major constraint across the agro-food industry as a whole, as a large investment is required to start a project. This is due to the use of technology

that needs to be constantly updated to meet consumer demand for advanced products, especially in the face of foreign competition in the sector.

11. The increasing demographic growth of the population, which is not linked to economic and food growth, makes it difficult to provide sufficient inputs of the required quality to the food industries¹³.

12. Weak agricultural base: This is the result of several factors, including the prevailing climatic and geographical conditions, primitive farming methods and the lack of modern technology and advanced tools such as machinery, fertilizers and skilled labour.

13. Deteriorating economic base: This is a result of the turmoil of the 20th century, which led Algeria to borrow from the International Monetary Fund. Since 1986, the agri-food industry has developed in a general context of economic crises that have severely hampered and disrupted its activities and its dynamism, which began in the 1970s.

14. Strong foreign competition: The Algerian food industry faces strong competition from large international companies. Dependence on exports has become the main source of food supply for the domestic market, making food dependence one of the main problems of the Algerian economy¹⁴.

15. The limited use of animal resources for milk production and the scarcity of agricultural raw materials required by various sectors of the food industry¹⁵.

As a number of factors have combined to hinder the development and growth of the Algerian agri-food industry in the face of uneven competition resulting from economic openness, several challenges can be identified:¹⁶

- Commercial activity in the parallel market has had a significant impact on the development of these industries.

- The lack of institutional flexibility that should serve these industries, including the absence of training policies, difficulties in obtaining industrial land, as well as fiscal pressures, social costs and weak research institutes.

In general, the government cannot afford to neglect this sector of the food industry, given its strategic importance in the national economy and its role in meeting the basic needs of society. For example, based on consumption indicators, the individual needs of an Algerian citizen in 2011 were 200 kilograms of wheat, 28 kilograms of sugar, 13 litres of oil and 110 litres of milk, according to the Ministry of Agriculture.

This explains why Algeria is one of the top ten importers of various food products. However, the food industry in Algeria is still limited and the production and processing infrastructure is insufficient to meet domestic demand.

Despite the government's efforts to rehabilitate these industries by accelerating the development of the food industry sector through small and medium-sized enterprises, encouraging investment, rehabilitating institutions and facilitating the import of production equipment, there is still a long way to go.

In conclusion, the food industry occupies a prominent position among other sectors of the economy, making it a potential actor in the development of other industries. Moreover, the food industry is closely linked to the agricultural sector, and the development of this sector should be achieved through the improvement of agriculture. The Algerian food industry is currently fragmented and needs to be organised. The Algerian government should therefore commit to implementing new policies to expand the range of food industry products and develop a comprehensive strategy to promote agricultural production at all stages of production.

Second topic: Prospects for the development of the food industry sector and its contribution to achieving food security

The food industry has become the second most important sector in Algeria, after hydrocarbons, in terms of its contribution to gross domestic product (GDP) and job creation in agriculture, food processing, wholesale and retail distribution. In recent years, this sector has experienced significant growth, particularly with the entry of public and private players, thanks to the adoption of new agricultural regulations and government support for small and medium-sized enterprises.

The search for integration between the food industry sector and the agricultural sector remains a top priority for the government.

Without achieving this integration, it would be difficult to develop the food industry sector. It is crucial to address the challenges faced by farmers and industrialists simultaneously. This can be achieved through the establishment of a future cooperation mechanism to combat intense competition, especially against the influx of imported food products.

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The agri-food sector is the second largest industrial activity in Algeria, 95% of which is run by the private sector. Although these companies have grown and responded to the domestic market, especially during periods of high oil prices, the sector still needs to harness available resources to meet growing market demand and reduce the import bill.

Algeria has prioritised the agri-food sector in its development programmes in order to promote its development and provide guidance to ensure its good performance. This will be achieved through:¹⁸

- Simplifying and modernising the process of registration in the commercial register, especially after the introduction of the electronic register.
- Enabling the free movement of food products within and outside the country.
- State facilitation in the food industry sector, including the financing of small and medium-sized projects through its banks by granting loans and facilitations.
- The adoption of a market economy approach in Algeria and the opening up of the sector to small and medium-sized enterprises. There has been a significant increase in the number of businesses, and facilitations have been provided for foreign partnerships that bring expertise and advantages in these areas.
- In recent years, the Algerian government, through the National Fund for Youth and Employment (ONSAJ), has provided loans to promote small and medium-sized enterprises, particularly in the agri-food sector.

CONCLUSION:

The food industry is a combination of various activities, including agriculture and fishing, which provide the raw materials and ensure the distribution of food products. This sector plays a crucial and vital role in the national economy, contributing to industrial growth and regulating agricultural production. It is also a key element of the food security strategy.

Algeria is therefore facing a serious challenge with political, social and economic dimensions, characterised by insufficient food production and increasing dependence on external sources to meet the population's basic food needs. The issue of food therefore appears as a national food security problem, as food security is a fundamental component of the country's strategic security. As a result, Algeria needs to develop its agricultural sector to bridge the food gap by encouraging domestic and foreign investment.

Algeria has also sought to make changes and adjustments to its agricultural policy by making wise use of natural resources through policies that provide technical, scientific, economic and financial support for products that are mostly imported from abroad. Food security is thus one of the major challenges facing Arab countries in general and Algeria in particular, given its limited resources and high population density. It concerns the ability of individuals in society to have access at all times to sufficient food, which is essential for their work, activity and health. The achievement of food security and the pursuit of self-sufficiency can only be achieved through a well-thought-out, determined and effective agricultural policy, characterised by continuity and follow-up.

The food challenge remains a major concern and the main obstacle to the Algerian economy, which is still unable to meet the population's food needs. Technological barriers and the ineffectiveness of successive agricultural policies are the main obstacles to the development of Algerian agriculture.

This study has led to a number of findings, which can be summarised as follows:

- The food industry is characterised by the diversity of its products as well as its various relationships with other sectors such as agriculture and trade.

The food industry plays an important role in the national economy, providing employment opportunities and increasing the gross domestic product.

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- Despite the reforms and development plans aimed at improving the agricultural sector and the resulting increase in the productivity of some agricultural products, the food trade balance still shows a significant deficit, especially in view of the rapid population growth.
 - On this basis, several recommendations can be made to reduce the severity of the food deficit, including
 - Accelerating the rehabilitation of public sector institutions in the food industry sector by upgrading their production facilities to increase their competitiveness before Algeria joins the World Trade Organisation.
 - Providing industrial land for food industry projects in rural areas, close to agricultural production centres.
 - Establish partnerships between the Ministries of Agriculture, Trade and Small and Medium Enterprises to coordinate between the agricultural sector and the food industry in order to achieve food security.
 - Encouraging investment in the agricultural sector by optimising land use and reclaiming new land, especially in the highlands and desert regions.
 - Develop scientific research and disseminate expertise in agricultural extension, particularly in cereals, for the selection and use of improved seeds and fertilisers to increase land productivity.
 - Supporting strategic crops, while promoting and supporting products such as dates, citrus fruits and olives, which have a greater chance of penetrating foreign markets than others.
 - Encourage private sector investment in the food industry, facilitate the creation of small and medium enterprises, eliminate the informal sector and integrate it into the production chain by simplifying procedures and improving the investment climate.
 - Encouraging the food industry to comply with production standards and specifications and to use modern technology in packaging, as well as providing support services for refrigerated transport and storage facilities.
 - Use technical assistance through partnerships and agreements with the World Trade Organisation.
 - Restructuring of agricultural production to increase the export of competitive agricultural products on international markets and achieve a surplus that can be used in the food industry.
 - Elimination of administrative barriers through the implementation of flexible laws and regulations adapted to the nature of this sector, which requires an effective dynamic to bring it to the position it deserves, especially considering that Algeria has a huge untapped agricultural potential.
- Finally, we can conclude that the development of the food industry requires the development of the agricultural sector, which is the backbone of the food industry. The introduction of modern technologies will allow its output to keep pace with developments, ensuring growth and sustainability. In addition, it is essential to increase incentives to attract foreign direct investment to this sector, as this will accelerate its development and achieve economic diversification goals more quickly.

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