

Diagnosis of the Food Security Situation in Algeria and the Main Challenges It Faces

Boumediene Belkebir ^{1,*}, El-Hadi Boukalkoul ²

¹ University 8 May 45 of Guelma (Algeria), belkebir.boumediene@univ-guelma.dz

² Badji Mokhtar-Annaba University (Algeria), el-hadi.boukalkoul@univ-annaba.dz

Received date: 13/02/2026 ;

Revised date: 25/04/2026 ;

Publication date: 30/06/2026

Summary:

This article aims to shed light on a very important issue at the present time for all countries, in particular developing countries, including Algeria, which is related to "food security". Through which, we will discuss the concept of food security and its relationship to national security, as well as the diagnosis of the situation of food security in Algeria according to some statistics and indicators, while addressing the most important challenges it faces. We conclude by presenting a number of suggestions that will enhance the strengths and reduce the points to be improved.

Keywords: Food security ; national security ; water security ; food safety ; Algeria

Jel Classification Codes : Q15 ; Q17; Q56

* Boumediene Belkebir (belkebir.boumediene@univ-guelma.dz)

I- Introduction :

Food security is one of the major challenges facing most countries around the world, including Algeria. Despite the availability of various resources—whether natural, such as land and water, or human and financial—Algerian agriculture, despite the positive results achieved in recent years, has yet to meet the desired goals of achieving self-sufficiency, particularly in basic products like cereals, and directing surplus for export. Approximately half of the needs for essential food commodities are still imported from abroad. Interest in ensuring food supplies has grown significantly, especially in the wake of the severe global food crisis that peaked in 2008, which saw a doubling in the prices of key food commodities. The situation worsened further during the last three years due to the COVID-19 pandemic and intensified even more after the outbreak of the Russian-Ukrainian war in early 2022.

The issue of food is no longer just an agricultural problem but has become a political one. Food security has become one of the primary concerns for both governments and citizens alike. Providing food for populations has always been linked to the stability of nations, and food shortages have often led to tensions and revolutions.

Based on the above, this paper will attempt to diagnose the state of food security in Algeria and the main challenges it faces. This will be done by addressing the following points:

- The conceptual framework of national security and food security;
- The relationship between food security and national security;
- The state of food security in Algeria;
- Key indicators of food security in Algeria in 2022;
- A strategic diagnosis of food security in Algeria;
- The main challenges Algeria faces in achieving food security.

To address these points, a descriptive and analytical approach will be used to characterize the phenomenon of food security and analyze its indicators for Algeria in light of some reports issued by relevant international organizations. Subsequently, some proposals will be presented to address shortcomings and enhance achievements.

II– The conceptual framework of national security and food security:

II.1. National security

Although its roots trace back to the 17th century, particularly after the Treaty of Westphalia in 1648, which laid the foundation for the birth of the nation-state, the term "national security" became widely used after World War II. The Cold War era provided the context in which theoretical approaches and institutional frameworks were crystallized, eventually leading to the use of the term "national security strategy."

Like any term or concept, national security cannot be precisely defined outside the spatial and temporal context surrounding it. It is always subject to modification and development in line with the changes and factors influencing its emergence.

National security is a complex, multidimensional phenomenon that connects the study of sociology, economics, international relations, governance systems, environmental sciences, and more. It also requires the use of various methodologies and a greater degree of methodological integration.

Hartmann defined it as: "the sum of the vital national interests of the state" (Frederick H. Hartmann, 1978). It is also defined as: "the ability of a state to protect its territory and its fundamental and essential values from external threats, particularly military ones." With the evolution of the concept of state capacity, the definition of national security expanded to include: the comprehensive ability of the state to protect its values and interests from both external and

internal threats (Mahdi, 2005:1). It represents the pursuit of nations to preserve the entity of the nation, protect it from external domination, and ensure its independence from any aggression.

The concept of national security is comprehensive and broad, encompassing both internal and external aspects of security. It is the responsibility of the government to work towards achieving and securing it under all circumstances. It is a strategic goal and a priority for governments, regardless of their political systems or level of economic development. Governments are responsible for mobilizing all their economic resources, political capabilities, and military capacities (Bibars, 2007:162).

II.2. Food Security

Food security, as defined during the World Food Summit held in 1996, is described by the Food and Agriculture Organization (FAO) as: "ensuring that all people, at all times, have physical and economic access to sufficient, safe, and nutritious food to meet their dietary needs and food preferences for an active and healthy life." This concept emphasizes that "food security at the individual, household, national, regional, and global levels is achieved when everyone has access to the food they need and prefer, at all times, to lead an active and healthy life" (Hamran, 2008).

Food security can be distinguished into two levels: absolute and relative.

- **Absolute food security** refers to a country's ability to produce food domestically in quantities equal to or exceeding local demand. This level is synonymous with complete self-sufficiency and is also known as self-reliant food security. However, this broad and absolute definition of food security has been criticized for being unrealistic and for preventing countries from benefiting from international trade, which is based on specialization, division of labor, and the exploitation of comparative advantages.

- **Relative food security**, on the other hand, refers to the ability of a country or a group of countries to provide food commodities either fully or partially. It is also defined as the ability of a country or a group of countries to meet the basic food needs of their population(s) either fully or partially and to ensure a regular minimum supply of those needs.

Based on this definition, the concept of relative food security does not necessarily mean producing all basic food needs domestically. Instead, it primarily involves securing the necessary resources to meet these needs through other products in which the country or countries have a comparative advantage over others. Therefore, the relative concept of food security implies securing food through cooperation with others.

It is important to note that the concept of food security is based on four main pillars:

1. **Access to food:** Ensuring that individuals have the physical and economic means to obtain food.
2. **Availability of food:** Ensuring that food commodities are consistently available in the market.
3. **Quality and safety of food:** Ensuring that food is safe and meets nutritional standards.
4. **Resilience of natural resources:** Ensuring the sustainability of agricultural production through the preservation of natural resources.

II.3. Concepts related to food security

A. Food safety:

According to the World Health Organization (WHO), food safety refers to the conditions and measures necessary during the production, processing, storage, distribution, and preparation of food to ensure that it is safe, reliable, healthy, and suitable for consumption. Food safety encompasses all stages, from agricultural production to the moment of consumption by the end consumer.

In the initial phase, particularly in the late 1970s and 1980s, the focus was on providing food commodities, emphasizing quantity because demand exceeded supply. Later, attention shifted to quality and balancing quantity with quality in food products. In the current phase, the focus has turned to the health dimensions of food products, known as food safety. WHO reports highlight a

strong link between food safety, nutrition, and food security. Unsafe food creates a vicious cycle of disease and malnutrition, particularly affecting infants, young children, the elderly, and the sick. This has led to the adoption of new methods to increase productivity in ways that are safer for human health, such as alternative or organic farming.

B. Food self-sufficiency:

Food self-sufficiency means producing all the food needed by a country's citizens. Achieving self-sufficiency in food supply is considered the shortest path for any country to achieve food security, ensuring both economic and political independence. This is the approach advocated by the Food and Agriculture Organization (FAO), as it is seen as the element capable of meeting all food security standards collectively.

However, this goal is difficult or impossible to achieve absolutely in practice due to objective and natural reasons. The concept of complete food self-sufficiency is broad and unclear unless placed within a specific geographical and historical context. Agricultural resources are limited, and the agricultural sector is fragile because it is directly linked to climate change, making absolute reliance on it an irrational economic decision. Additionally, financing self-sufficiency today at the expense of future generations means that the high investments required in land and water management to achieve this goal would detract from resources needed for critical sectors like education and health (worldbank.org). Moreover, the concept of self-sufficiency sometimes carries ideological connotations.

Therefore, it can be said that in light of global economic transformations and the accompanying trade liberalization, the concept of complete food self-sufficiency is utopian and even impractical, as it would halt all trade relations in food commodities with other countries. As a result, most researchers tend to use the concept of food security instead of complete food self-sufficiency, as it is free from any ideological connotations.

C. Water security:

The concept of food security is closely linked to water security, as they are interdependent. A shortage of water suitable for human use harms food security and, consequently, national security, given the reliance of individuals and institutions on water for most activities. This poses a direct threat to sustainable development.

Water security involves preserving available water resources, using them optimally, preventing their pollution, and rationalizing their use for drinking, irrigation, and industry. It also involves seeking all possible means to explore new sources of potable water.

Water security is defined as: "achieving sustainable self-sufficiency in water according to recognized standards" (Abdul Maqsood, 2008; p. 45). It is also defined as: "sufficiency and assurance across time and space, meaning meeting various water needs in terms of quantity and quality while ensuring the continuity of this sufficiency without adverse effects" (Mashkan, 2008; p. 212).

From these definitions and others, water security can be understood as achieving a balance, both quantitatively and qualitatively, across time and space, between available water resources and various water needs in the present and future.

II.4. The relationship between food security and national security

The economic school is one of the approaches within liberal theory. According to this school, the two World Wars demonstrated that economic power lies at the heart of a state's ability to engage in war and protect its national security in general. This has led to increased attention to economic phenomena, such as scarcity, reflected in concepts like strategic goods and food security, as well as the accumulation and classification of national wealth and its allocation between military and non-military sectors. An important question emerged: What portion of resources is required to

protect internal values from external threats, given that these values are the foundation and purpose of national security?

For this school, the economic element is one of the most important components of national security, alongside geopolitical, demographic, political, and military elements. There are three types of economic resources that influence the level of national security: mineral resources, industrial resources, and food resources.

This perspective has led proponents of the economic school, particularly Robert McNamara, to emphasize that true security depends on the stability and prosperity of the national and global economy. In this school, national interests form the backbone of the concept of national security.

In this context, Robert Mc Namara (1966) argues that "security is development, and without development, there can be no security. Nations that do not grow in reality simply cannot remain secure." There is a direct relationship between the degree of stability and the economic situation of countries. While military power provides order, it is also necessary to establish a solid foundation of law and order in a developing society to create a shield behind which development can occur. This is the fundamental truth of security, of which food security is one of the most prominent features.

Evidence of this can be seen in the clear manifestations of public discontent, particularly in urban areas of countries facing economic problems, especially those experiencing disruptions in the supply of basic food commodities. Therefore, food security is considered a crucial contributor to stability and national security.

National security cannot truly be achieved unless the state recognizes that its food security is an integral part of its national security and an inseparable component of government policy aimed at creating favorable conditions to protect vital values. This was highlighted by Trager and Kronenberg (1973, pp. 35-36).

It should be noted that there are complex aspects and overlapping interactions between food and nutritional security at various levels. Different factors and sectors at the global/national level (agricultural production, existing infrastructure, and state policies) play a crucial role and influence the availability and access to food, as well as healthcare services, environmental, and health conditions at the national level. These factors directly affect groups and households, influencing their consumption of food products and water resources. Education plays a critical role in improving and changing the situation at the local level, enhancing food availability and access, and raising awareness of its value. Food intake and health status are closely interrelated, and both determine the overall level and goal of food and nutritional security for countries (Khoula Kelaichi; 2021).

III- Methods and data analysis :

In order to diagnose the state of food security in Algeria, this study relied on the descriptive method to explain the phenomenon and describe its characteristics in theoretical terms (by addressing the concept of food security, its dimensions and food insecurity), as well as quantitative data analysis (by analyzing the state of food security in Algeria using data from the State of Food Security and Nutrition in the World (2024) report, data on the indicators of the four dimensions of food security, and their evolution over the past 20 years. The Global Food Security Index 2022. In addition to various statistics published by public authorities on the state of water resources in Algeria. And as a tool to diagnose the state of food security in Algeria, a SWOT matrix was adopted to identify strengths, weaknesses, opportunities and threats.

IV- The State of food security in Algeria:

IV -1.Evolutionary trends of food security indicators in Algeria :

The analysis of data extracted from "The State of Food Security and Nutrition in the World 2024" report reveals significant trends regarding the food security situation in Algeria. The prevalence of undernourishment has seen a remarkable improvement, decreasing from 6.2% in 2004-2006 to less than

**Diagnosis of the Food Security Situation in Algeria and the Main
Challenges It Faces (PP. 421-432)**

2.5% in 2021-2023. This substantial reduction demonstrates the considerable progress made by Algeria in the fight against hunger over the past two decades.

Similarly, moderate or severe food insecurity has decreased significantly, from 13.0% in 2014-2016 to 5.6% in 2021-2023, representing a reduction of 7.4 percentage points. Severe food insecurity has also improved, albeit more modestly, decreasing from 22.9% to 18.9% over the same period, which represents a reduction of 4 percentage points.

Regarding child nutrition indicators, wasting among children under 5 years of age decreased from 12.1% in 2012 to 8.6% in 2022, while low birth weight slightly declined from 13.5% to 11.9% over the same period. However, it is worth noting a concerning trend regarding overweight among children under 5 years of age, which increased from 18.8% in 2012 to 23.8% in 2022, an increase of 5 percentage points.

IV -2. The continued dependence of Algeria on food imports:

Despite Algeria achieving, for the first time, an agricultural production value of \$24 billion in the Gross Domestic Product (GDP) in 2021 (according to Mounib Ouberi, President of the National Union of Agricultural Engineers), and despite ranking first among North African countries in the 2024 report by the Food and Agriculture Organization (FAO) on the state of food security and nutrition in the world, food security remains uncertain at present. Many of the food products consumed by Algerians still rely on imports, particularly in the cereals sector.

A comprehensive analysis of Algeria's food import trends (2019–2023) reveals that cereals remain the top imported category, accounting for 5.8–10.6% of total food imports. In 2023, the value of cereal imports reached US\$ 3.14 billion, marking US\$ 1.44 billion for milk and dairy products, approximately US\$ 849 million for animal or vegetable fats and vegetable oils, and approximately US\$ 971 million for sugars (www.trademap.org).

This underscores Algeria's heavy reliance on foreign wheat supplies, thereby exposing the country to global market fluctuations. Furthermore, the analysis highlights Algeria's persistent challenge in balancing food security objectives with economic realities. While data indicates partial success in certain import-reduction strategies, structural dependencies persist for critical staple commodities, necessitating comprehensive reforms in agricultural and trade policies.

Table (1): Algeria's Food Import Values (2019–2023) (Unit: 1,000 USD)

Product Category	Import Value in 2019	Import Value in 2020	Import Value in 2021	Import Value in 2022	Import Value in 2023
Cereals	2479802	2717421	3414768	3836821	3146193
Milk and Dairy Products: Includes natural honey for food purposes...	1128260	1283885	1331786	1802430	1441944
Fats and Animal/Vegetable Oils: Includes food preparation products...	787526	696668	1160246	943383	849045
Sugars and Confectionery	676406	703159	817838	816366	971476
Prepared Vegetables, Fruits, Nuts: Includes preserved and processed industrial products...	174989	425366	680381	1090454	1014122
Edible Vegetables, Roots, and Tubers	277546	213603	303250	362689	453361
Coffee, Tea, and Spices	292222	279757	301883	288141	437974
Various food preparations	199055	232840	252095	171641	217984
Edible Fruits (Excluding Citrus), Meat Preparations, and Other Products...	234061	247611	206500	20512	36101
cocoa and its preparations	90663	86456	104386	76966	103134
Preparations of meat, fish, crustaceans, mollusks, or other aquatic invertebrates...	55070	56174	53423	61267	75358
Preparations of vegetables, fruits, or other plant parts	69177	42048	44156	32069	52272
Fish, Crustaceans, Mollusks, and Other Aquatic Products	48091	36009	42008	31643	40819
Edible Meat and Offal	203305	121093	26694	9188	37119
Milling products; malt; starches and flours; inulin; wheat gluten	26880	31742	23950	37686	56529
Overall imports	42591395	34750418	37003698	36049153	41456526

Source: Prepared by the authors based on data available on https://www.trademap.org/Product_SelCountry

IV -3. Key indicators of food security in Algeria (2022):

According to the latest report issued in September 2022 by the Global Food Security Index (GFSI), a dynamic quantitative and qualitative benchmarking model developed by the Economist Impact with support from Corteva Agriscience, Algeria ranks 68th out of 113 countries in the index and 12th out of 15 countries in the Middle East and North Africa (MENA) region. The index evaluates food affordability, availability, quality and safety, and sustainability. Algeria achieved an overall score of 58.9 in the food security environment, with its strongest performance in the affordability pillar (66.8) and its weakest in sustainability and adaptation (54.2), slightly outperforming its score in the quality and safety pillar (54.7).

Table 2: Global Food Security Index (GFSI) 2022 - Algeria's Rankings

Rank (Out of 113 Countries)	Overall Score	Affordability	Availability	Quality and Safety	Sustainability and Adaptation
68 th	58.9	66.8	57.3	54.7	54.2

Source : Global Food Security Index 2022.

Although it has succeeded in providing affordable food to consumers, Algeria ranked 35th out of 127 countries with sufficient data to calculate Global Hunger Index scores for 2024, with a score of 6.7, Algeria has a low level of hunger (www.globalhungerindex.org Publication date : October 2024), it still faces challenges in addressing climate change risks. Gaps include the lack of national commitment to managing exposure to climate change risks, low levels of climate finance flows, and the absence of environmental-economic accounting systems. The report also highlights the lack of political commitments in the form of a national nutrition plan or dietary guidelines. Additionally, Algeria needs stronger measures to ensure food quality and safety.

IV -4. The state of water resources in Algeria:

A. Surface water:

The water issue in Algeria, given its geographical location, is one of the most critical challenges it currently faces and will face in the future. The average annual rainfall is 680 mm, ranging from less than 50 mm/year in the southern states (Ouargla, Illizi, Adrar) to about 1000 mm/year in some northern states (Jijel, Skikda, El Tarf).

In 2021, the national supply of potable water reached 6.3 billion cubic meters, with 50% coming from groundwater, 33% from surface water, and 17% from seawater desalination.

Regarding dams, at independence in 1962, the storage capacity of dams was 8.908 million cubic meters (only 13 dams). Today, this capacity exceeds 6.8 billion cubic meters, stored in more than 80 dams, with 75 dams currently in operation.

Additionally, the sector has adopted a national strategy involving the interconnection of storage facilities into regional systems. From 1962 to the present, 16 major water transfer facilities have been established to mobilize surface water resources, such as the "Beni Haroun System" and the "MAO System" (Water transfer system that currently supplies the surrounding towns of the Mostaganem-Arzew-Oran corridor).

B. Groundwater:

Algeria currently has approximately 281,000 operational wells, with a capacity exceeding 6.6 billion cubic meters. Among these, 27,200 wells were drilled and completed at the expense of the state treasury.

Moreover, 34 desalination plants have been completed and are operational, with a production capacity of 6.52 million cubic meters per year, supporting the supply of potable water to 1,166,715 people.

Regarding agricultural irrigation, Algeria now has 45 major irrigation areas, covering a total equipped area of 279,000 hectares, supported by 48 large dams. In contrast, in 1962, there were only seven major irrigation areas, extending over 105,000 hectares, with the actual irrigated area not exceeding 44,000 hectares due to insufficient water storage in dams.

These areas are irrigated using water from dams or treated wastewater. To date, 200 wastewater treatment plants are operational, with a filtration capacity of 1.1 billion cubic meters per year, 20 of which are dedicated to irrigating agricultural lands.

Concerning sanitation, completed projects have increased the connection rate from less than 20% in 1962 to 91% in 2021, with the national sanitation network now spanning 47,000 km.

C. Seawater desalination:

To address the issue of water supply definitively and achieve water security for the country, a strategic plan for 2024 and 2030 has been developed, focusing primarily on prioritizing the mobilization of sustainable water resources.

This strategy aims to secure water supply for coastal areas, as well as regions located within 150 km of desalination plants, where 80% of the country's population is concentrated.

To date, Algeria operates 19 desalination plants, with new plants coming in early 2025 across the wilaya of El Tarf (Koudiet Ed Draouch), Boumerdès (Cap Djinet), Tipaza (Fouka), and Oran (Ras El Aïn). An additional plant in Béjaïa (Tighremt-Toudja) is slated for imminent inauguration.

This expansion has elevated the national production capacity of potable water to 3.7 million m³ per day, meeting 42% of the demand within the water supply system serving 16 wilayat (provinces). Consequently, Algeria has established a significant lead, positioning itself as Africa's top producer of desalinated water by capacity and ranks second in the Arab world, trailing only Saudi Arabia.

Projections indicate that reliance on desalinated water will rise from 3.7 million m³/day to 5.5 million m³/day by 2030—increasing the supply share from 42% to 60% of national potable water demand. This output, equivalent to 2 billion m³ annually, will integrate into the supply systems of 35 wilayas (provinces) following the second phase of Algeria's large-scale seawater desalination program. The phase involves constructing six new plants, each with a daily capacity of 300,000 m³ (www.aps.dz).

V- Strategic diagnosis of food security in Algeria using the SWOT matrix:

Algeria has made significant strides in disaster risk management, improving from a score of zero in 2012 to a full score since 2020. However, there remains a lack of political commitment to adaptation in addressing broader climate change risks. Food safety is a strong performance area for Algeria, thanks to existing food safety legislation. Improving food quality by prioritizing nutritional standards is essential. The reduced reliance on food aid reflects adequate supplies; however, enhancing supply chain infrastructure would further boost food availability in the country.

V -1. Strengths:

- **Disaster Risk Management (Score: 4.6):** Algeria ranks first in this indicator. It has policies for pest control and disease mitigation, along with coordinated risk management. Algeria improved its score from 0 in 2012 to 100 in 2020 and has maintained it since.
- **Supply Adequacy (Score: 2.7):** Algeria ranks first in this indicator with a "very good" score of 100. The country's food supply adequacy has consistently improved during the GFSI reporting period, and it has low reliance on chronic food aid.
- **Food Safety (Score: 3.5):** Algeria ranks 49th overall in this indicator, achieving a full score of 100 in the sub-indicator 3.5.1 (relevant food safety legislation), which strengthens its position in this area.

V -2. Weaknesses (Areas for Improvement) :

- **Nutritional Standards (Score: 3.2):** Algeria ranks 109th in this indicator. The low score is due to the lack of national dietary guidelines, a national nutrition plan or strategy, insufficient nutritional labeling, and inadequate nutrition monitoring.
- **Supply Chain Infrastructure (Score: 2.6):** Algeria ranks 74th in this indicator. This is due to low scores in sub-indicator 2.6.2 (road infrastructure) and poor performance in air, port, and rail infrastructure. Improving key infrastructure provision would enhance food availability for consumers.
- **Political Commitment to Adaptation (Score: 4.5):** Algeria ranks 95th in this indicator. The country consistently performs poorly in sub-indicators 4.5.2 (implementation of environmental and economic accounting) and 4.5.3 (early warning measures/climate-smart agriculture).

V -3. Opportunities:

- **Extensive Coastline:** Algeria's long Mediterranean coastline allows for broad utilization of its maritime advantages.
- **Unique Topography:** The country features numerous inland plains with diverse agro-climatic characteristics.
- **Rich Biodiversity:** Algeria's wide variety of spontaneous plant species makes it a region with high genetic diversity potential. This natural advantage is crucial for improving crop varieties and intensifying agricultural production.
- **Significant Industrial Base:** The country has the capacity for local production of agricultural inputs (tractors, machinery, fertilizers, plant health products) and processing of agricultural products (dairies, oil mills, canning factories, etc.).
- **Large Rural Population (40% of the total population):** This is a favorable factor for implementing strategies aimed at ensuring food security, as it allows for increased production through greater use of capital and labor.
- **Experience in Agricultural Training, Research, and Extension:** This expertise supports rapid modernization and intensification of agriculture.

V -4. Threats (Constraints):

- **Dominance of Arid and Semi-Arid Regions:** This significantly reduces the strategic advantage provided by Algeria's vast land area, necessitating the mobilization of all water resources and strict management of their use.
- **Concentration of the Majority of the Population in Northern and Coastal Areas:** With low interest in settling other regions, coupled with a decline in the available agricultural land per farmer.
- **Small Size of the Majority of Agricultural Holdings:** This is a natural result of the active population in the agricultural sector and the limited availability of urban agriculture (nearly 48% of agricultural holdings average less than 20 hectares).
- **Low Use of Intensive Inputs:** (Fertilizers, plant health products, seed and plant selection, veterinary products, etc.), which partly explains the low agricultural yields and productivity (CHEHAT F.; 2012).

VI- Main challenges facing Algeria in achieving food security:

VI-1. Climate Change:

One of the most significant challenges to food security globally, including in Algeria, is climate change. The severity of climate change is expected to increase, with rising global temperatures, untimely rainfall, and extreme weather phenomena such as droughts and floods. These changes impact the agricultural sector by altering productivity, livelihoods, and causing economic losses. They also affect infrastructure, markets, and food security. Therefore, future food security will depend on the ability to adapt agricultural systems to extreme climate events.

VI-2. Water Scarcity:

Algeria is among the countries most affected by climate change. The encroachment of sand and the desertification of vast steppe and desert-adjacent areas threaten both surface and groundwater reserves. Recognizing this challenge, the Algerian authorities, under the directive of the President, have mobilized various sectors (Interior, Water Resources, Agriculture, Industry, and Environment) to create an emergency plan aimed at:

- Implementing a new national water conservation policy to preserve groundwater resources.
- Reviving stalled projects for wastewater treatment plants across provinces to reuse treated water for agricultural irrigation instead of groundwater.
- Developing a plan to establish seawater desalination plants along the entire coastline to mitigate the impacts of harsh climatic conditions.
- Strictly monitoring groundwater extraction licenses and imposing severe penalties for unauthorized well drilling.
- Activating the role of the "Water Police" to oversee water usage and combat wastage nationwide.
- Establishing startups focused on water economy and security, specializing in wastewater reuse technologies.
- Conducting urgent scientific studies to accurately assess the status of groundwater reserves (Presidency Statement, January 8, 2023).

VI-3. Rising Global Food Prices:

Most countries, especially developing ones, are affected by global shocks that undermine food systems, including volatile commodity markets, rising energy and fertilizer prices, trade disruptions, and ongoing events such as the war in Ukraine. These shocks have led to sharp increases in global food prices and exacerbated food insecurity, as inflation pressures low-income households. Algeria, as a major wheat importer, is particularly vulnerable, importing more than half of its needs from abroad.

VII- Suggestions:

- *Prioritizing Food Security in National Security:* Food security should be at the forefront of national security issues, alongside military, public, cyber (data and information security), cultural, and societal values.
- *Developing a National Food Security Strategy for 2050:* This strategy should outline national dietary guidelines, identify key consumer goods, ensure self-sufficiency, and establish a water security strategy.
- *Enacting Legal Frameworks for Environmental and Economic Accounting:* Implementing principles of environmental and economic accounting through legal texts.
- *Accelerating Climate Adaptation Plans:* Speeding up the development of political commitments to climate adaptation, early warning measures, and climate-smart agriculture.
- *Reducing Chemical Fertilizer Use:* Encouraging a return to organic farming and traditional crop rotation methods to preserve soil health and promote sustainable development.
- *Emphasizing the Role of the National Seed Bank:* Recognizing the National Seed Bank (inaugurated on August 11, 2022) as a sovereign institution safeguarding food security. It serves as a lifeline for local seedlings of grains, legumes, fodder, fruit trees, ornamental plants, spices, and various pastoral and aromatic plants. Efforts should be made to recover Algerian seedlings and seeds smuggled to foreign seed banks, particularly in France.
- *Digitizing the Agricultural Sector:* Accelerating the electronic linking of main consumer goods warehouses (grains, oil, potatoes, sugar) with central authorities to effectively control and regulate the market.
- *Sustainable Desalination Plants:* It is necessary to adopt more sustainable and environmentally friendly methods within the framework of implementing the plan to popularize seawater

desalination plants across the entire coastal strip, by establishing plants that operate using renewable energies such as solar thermal energy, wind energy, etc.

- *Establishing Regional Supply Units:* Creating regional supply units for all food products and digitally linking the supply chain to ports, airports, and highways.
- *Enhancing Crisis Response Capacity:* Strengthening the ability to address food security risks and crises through emergency food drills and maintaining strategic food reserves.
- *Accelerating Nutritional Standards:* Developing national food labeling standards, increasing laboratories for food quality and safety control, and reducing the consumption of unhealthy food products, such as imposing taxes on sugary drinks and regulating food advertising.
- *Enhance community nutrition programs:* encourage breastfeeding, improve nutritional education, and implement targeted interventions to combat anemia in women of childbearing age.
- *Combating Food Waste:* Making food waste reduction a national priority by involving various stakeholders and utilizing different platforms (schools, mosques, media, social media) to change societal behaviors and concepts related to food security.
- *Addressing Desertification:* Implementing a national afforestation plan, including expanding the Green Dam.
- *Regional and International Cooperation:* Collaborating with sister and friendly nations, particularly Arab countries, to address food and water security challenges.

VIII- Conclusion:

The issue of food security is one of the major challenges facing Algeria, much like the rest of the world. Despite the availability of natural, human, and financial resources, Algerian agriculture, despite the encouraging results achieved in recent years—especially during the COVID-19 crisis—has not yet reached the required production levels to meet the growing demand for food. This is despite the measures and efforts made by the state to advance the agricultural sector. Our country still imports half of its food, particularly grains, which are the staple food for Algerians.

Today, food security is a fundamental goal for the state and a dimension of national security, even extending to the concept of sovereignty, as "there is no sovereignty without food sovereignty" and "no power for those who cannot feed their people." Although the pursuit of self-sufficiency remains a legitimate goal, it is still an idealistic aspiration given the challenges and risks facing the world today, most notably climate fluctuations, water scarcity, and the volatility of food prices in international markets. These are factors that cannot be controlled by a single country alone. This necessitates the Algerian state to develop a comprehensive and long-term food strategy that mobilizes various resources and sectors to ensure its successful implementation, within the framework of sustainable development that secures healthy food for citizens and preserves the right of future generations to the country's natural resources.

Bibliography:

• Books:

1. Frederick H. Hartmann, (1978): *The Relation of Nations*. New York: Macmillan, pp. 264-265.
2. McNamara, *The Essence of Security* (New York: Harper Press, 1966), p. 149.
3. Frank Trager and Philip Kronenberg (eds.), *National Security and American Society* (Kansas: Kansas University Press, 1973), pp. 35-36.
4. Zainuddin Abdul Maqsood Ghuneimi, (2008): *Alternative Energy and the National Security System of Kuwait and the Gulf Arab States: An Analytical and Evaluative Study*. Kuwait: Kuwait Center for Research and Studies, 2008, p. 45.

• Articles:

1. Mahdi Saher, (2005): *On the Concept of National Security*, available at : <http://www.alittihad.com/paper.php?name=News&file=article&sid=22433>
2. Bibars Samia, (2007): Arab National Security, Arab Affairs Journal, Volume 7, Issue .132pp.160-179
3. Hamran Abdul Karim Saleh, (2008): *Food Security*. www.grenc.com/prnt.cfm?arfid

**Diagnosis of the Food Security Situation in Algeria and the Main
Challenges It Faces (PP. 421-432)**

4. Khawla Kallachi ,(2021): *Food Security as National Security: An Urgent Issue in Tunisia*. International Center for Strategic Security and Military Studies, Tunisia. Available at: <https://ciessm.org>
5. Foued Chehat ,(2012): *Algeria's Food Security - What Strategy?*, *Djadid El-iktissad Review*, Vol. 07.pp.26-29.

• **Papers Presented at Conferences:**

1. Mishkan Mohammed Al-Awur, (,2008December): "*Water Security Industry...A Perspective*", Research paper presented at the Water Security Symposium, Dubai, 14/02/2008. United Arab Emirates: Dubai Police Academy Center for Research and Studies, p. 212.

• **Reports:**

1. worldbank.org
2. UNICEF ,(1998): *The State of the World's Children, Focus on Nutrition*. (<http://www.unicef.org/sowc98/silent4.htm>)
3. *The state of Food Security and Nutrition in the World 2022* , available at : <https://www.fao.org/3/cc0639en/cc0639en.pdf>
4. Global Trade Data Analysis - Global Trade Insights ,available at : https://www.trademap.org/Product_SelCountry
5. *Global Food Security Index 2022*.available at : <https://impact.economist.com/sustainability/project/food-security-index/>
6. AO, IFAD, UNICEF, WFP & WHO. (2024). *The State of Food Security and Nutrition in the World 2024*. Rome. DOI:10.4060/cd1254en.
7. Islam Kaabach, (October 10, 2021): "How did Algeria win the food security bet?.. Experts explain" (in Arabic), available at : <https://www.skynewsarabia.com/business/1469444>
8. Maghreb Émergent, (11 Aout 2022) : "Sécurité alimentaire : l'Algérie consacre près de 10 milliards de dollars à l'importation", available at :<https://maghrebemergent.net/securite-alimentaire-lalgerie-consacre-pres-de-10-milliards-de-dollars-a-limportation/>
9. www.aps.dz/ar/economie/129304-60
10. Presidency Statement, (January 8,2023), available at : <https://www.el-mouradia.dz/ar/president/63bae6dc843b29001d2422d9>

How to cite this article by the APA method:

Boumediene Belkebir, El-Hadi Boukalkoul (2026), **Diagnosis of the Food Security Situation in Algeria and the Main Challenges It Faces**, *Economic Development Review*, Volume 11 (Number 01), Algeria: University of El-Oued, pp.421-432.

