

## The reality and challenges of achieving food security in Algeria during the period 2018-2023

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### Abstract:

The study addresses the diagnosis of the food security situation in Algeria, where the world has recently witnessed a deterioration of this issue, which has become a general concern rather than a specific one due to political, climatic, health, and other circumstances. In this context, we aimed to assess the overall situation in Algeria regarding the dimensions of food security, including factors such as production indicators, exports, imports, available quantities, and self-sufficiency rates. The study also focused on proposing a strategic vision for the country and the challenges it faces in ensuring food security without relying on dependency and reducing the import bill.

The research findings indicate that there are efforts by the higher authorities to move away from a rent economy, with a particular focus on the agricultural sector. However, according to the statistical results, they still fall below the average for achieving self-sufficiency. Therefore, our attention in the conclusion was directed towards gathering recommendations from a group of organizations interested in how to achieve the expected food security, which can be applied.

**Keywords:** Food security; dimensions of food security; food security statistics; challenges in Algeria.

**JEL Classification Codes :** Q11; Q18; Q14

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## **Introduction:**

The world is facing a crisis in the field of nutrition, resulting from a combination of political, health, and climatic factors that have directly impacted the global economy. After recovering from the global pandemic, the world is now grappling with the consequences of the ongoing war in Ukraine, which has shaken food and energy markets. The agricultural and food systems continue to be highly susceptible to shocks and disruptions arising from conflicts, climate variation, extreme weather events, and economic contractions. These factors, coupled with increasing inequalities, pose a challenge to the ability of agricultural and food systems to provide sufficient, secure, and affordable food patterns for everyone. These have become primary drivers of food insecurity and malnutrition, creating a "new normal" in the state of affairs.

Achieving increased access to healthy and affordable diets and ensuring food security and nutrition for all requires policy and legislative approaches that enhance the integration of rural, peri-urban, and urban areas. Algeria is among the countries striving to transition away from a rent economy by promoting the development of other sectors, especially agriculture, given its ample land resources that could enable the country to achieve self-sufficiency and engage in exports. However, despite all efforts, there is still observed instability in food security and the attainment of self-sufficiency.

Therefore, the study's problem revolves around the following question:

### **What is the food security situation in Algeria, and what are the efforts being made to achieve self-sufficiency?**

So **the objective of this research paper** is to examine the food security situation in Algeria, explore the policies pursued to ensure food security, address food gaps, and examine the measures implemented by Algeria to overcome food insecurity.

**Importance of the Study:** The importance of this study lies in our attempt to diagnose the global food security situation and the reasons for its deterioration, especially in Algeria. This is done to evaluate the Algerian food security reality and identify the efforts made by the state to enhance food security.

**Research Methodology:** Regarding the research methodology, a descriptive analytical approach was adopted based on the literature review of studies, research, newspapers, and official websites, in addition to the latest findings of organizations such as the Arab Monetary Fund and the Food and Agriculture Organization (FAO).

The research is divided into the following sections:

1. Conceptual framework for food security and its dimensions.
2. The global food security situation.
3. The reality of food security in Algeria.
4. The challenges facing Algeria to achieve food security.

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## 1-Definition of Food Security:

After a review of the literature on the concept of food security, it was agreed upon, as defined by the Arab Monetary Fund (Arabi, 2023, page 48) and the Food and Agriculture Organization (FAO) (Mazzuri, 2014), that food security can be summarized as "having access to sufficient, safe, and nutritious food to meet dietary needs and food preferences."

As for the dimensions of food security, they include:

**Table number (01):** dimensions of food security

Food Availability	Food Access	Food Utilization	Food Stability
It is determined either through sufficient local production to meet food needs, through international trade (import), or through food assistance. Organizations aim to provide adequate and quality food.	The ability to obtain sufficient food for individuals and households depends on two pillars: economic access (through the availability and quality of transportation infrastructure, including ports, roads, and railways) and economic access (dependent on income policies, expenses, food prices, markets, and social support to achieve food security)	It is measured on two dimensions: through indicators of human body measurements under the age of five and through the quality of food and its effective use.	It concerns the ability to obtain sufficient food at all times, without the risk of losing this ability due to a specific shock.

**Source:** Prepared by the researchers based on: (Mohammadi & Hafsawi, 2023)

## 2-Global Food Security Situation:

Deep Knowledge Analytics'' has warned of increased hunger levels and food insecurity in Sub-Saharan Africa, the Middle East, North Africa, Latin America, and South Asia in the near and medium term, particularly due to the ongoing conflict in Ukraine, which has disrupted food and energy markets. The report also anticipates that countries experiencing conflicts, economic crises, and adverse climatic conditions, such as drought, will suffer more and be more susceptible to hunger even before the Russian-Ukrainian war.

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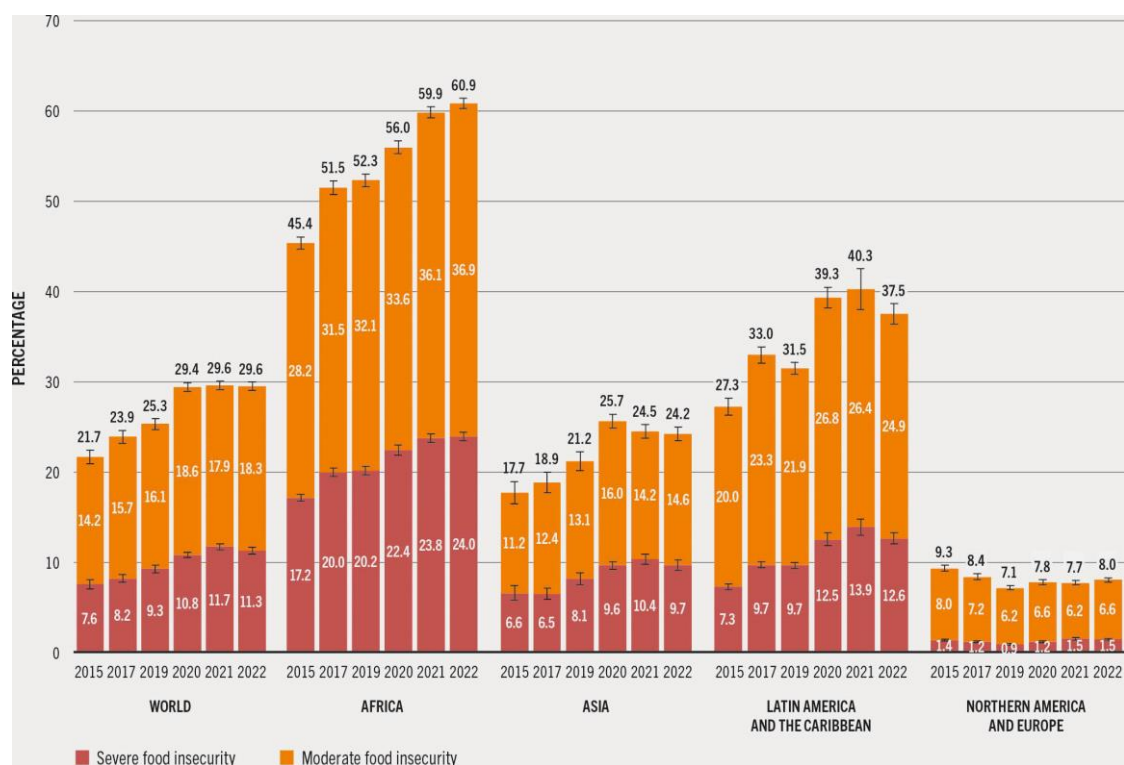
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The release of the Global Food Security Index (GFSI) coincided with the significant impact of the Russian-Ukrainian war on food security. Many countries have had to rely on international financial institutions to secure their basic food needs amid soaring prices.

The estimations indicate that between 691 and 783 million people worldwide suffered from hunger in 2022. Taking into account the average estimate (approximately 735 million), this means that around 122 million people faced hunger in 2022 compared to 2019, before the global pandemic outbreak. (**Summary of the World Food Security and Nutrition Situation 2023, 2023**)

The new estimations for the prevalence rate of food insecurity based on the Food Insecurity Experience Scale confirm that there has been no progress on global food insecurity in 2022. Following a sharp increase from 2019 to 2022, the moderate to severe food insecurity prevalence rate in the world remained unchanged for the second consecutive year, significantly higher than pre-COVID-19 levels (Figure 1).

**Figure number (1): Global Food Security Status**



**Source:** Summary of the Food Security and Nutrition Situation in the World 2023, 2023 -

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The Figure 1 provides, in 2022, an estimated 29.6 percent of the world's population, equivalent to 2.4 billion people, experienced moderate to severe food insecurity, meaning

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they could not access sufficient food. These numbers are still 391 million people higher than they were in 2019 before the pandemic outbreak.

The prevalence rate of severe food insecurity increased slightly in Africa, North America, and Europe, while it decreased, not insignificantly, in Asia from 2021 to 2022. The only region that recorded encouraging progress was Latin America and the Caribbean, especially South America, despite the worsening food security situation in the sub-region of the Caribbean.

### 3- The Reality of Food Security in Algeria:

According to a report by the Arab Monetary Fund, the Arab world, including Algeria, faces challenges in food security due to common factors such as a dry and semi-dry climate, water scarcity, rapid population growth, and the lack of equilibrium between productivity growth and rapid population growth. Internal factors affecting food production, distribution, and access, such as smuggling of goods to neighboring countries, the use of traditional agricultural techniques, and limited investment in research, hinder Arab countries, including Algeria, from achieving food self-sufficiency and ensuring food security.

In the latest report of May 2023 by the Arab Monetary Fund on Economist Impact 2022 Global Food Security Index (GFSI), Algeria ranked moderately, taking the 10th position among Arab countries and 68th globally, with a GFSI score of 58.9. This index reflects insights into various dimensions of food security (ALARABI, 2023: 49).

The following figure illustrates the results of the dimensions of food security and the reasons behind Algeria's score of 58.9 on the index

**Figure number (02):** Results of Food Security Dimensions in Algeria



Source: (Mohamedi & Hafsaoui , 2023:191)

From the results provided by the Economist Impact in **Figure 2**, we can observe that Algeria scores highest in the "Cost Resilience" dimension with a score of 66.8. This indicates that Algeria has performed very well in terms of the Global Poverty Line Index and fairly well in the Food Safety Net Programs Index. Following that is the "Food Availability" dimension with a score of 57.3. However, this dimension exhibits poor performance in terms of the Access to Agricultural Inputs, Research and Agricultural

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Development, Farm Infrastructure, Political and Social Barriers, and Commitment to Food Security Policies. Additionally, it scores very poorly in the Trade Infrastructure dimension.

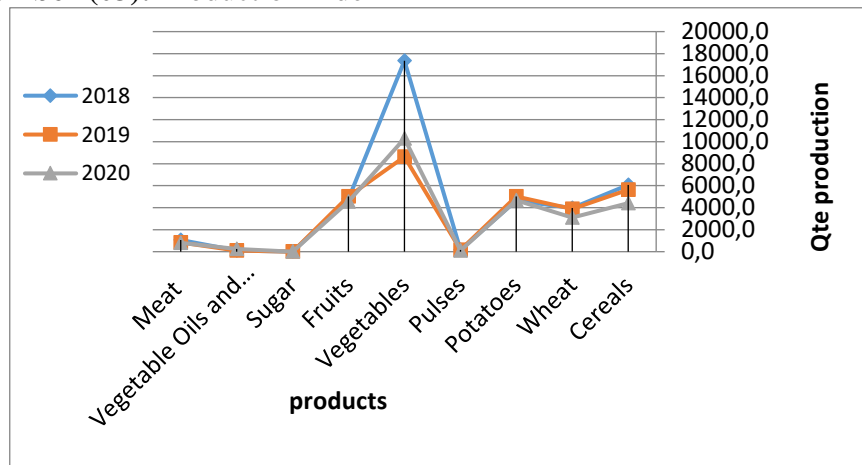
In terms of "Quality and Safety," Algeria ranks third with a score of 54.7, with very poor performance in Nutrition Criteria and Weak performance in Dietary Diversity Index.

The last dimension, "Sustainability and Adaptation," scores low due to the absence of certain factors and the weakness of some indicators related to Water, Oceans and Seas, and Rivers, along with a lack of political commitment to adaptation.

According to the latest statistics from the Arab Organization for Agricultural Development (AOAD), we have collected data for various agricultural commodities in Algeria based on the study's requirements in Annex 1 (Agricultural, 2021). We have then graphically represented this data to facilitate its analysis. The data is as follows:

**3-1 Production index: the Figure 3** provides a graphical analysis of the production index for various commodities from 2018 to 2020. It illustrates the convergence of production quantities for the same type in the same year, while the production quantity varies significantly among different food types, as consumption rates decline. Notably, the production of oils and fats has almost disappeared at a rate of 155.7 thousand tons. Sugar production is negligible, and pulses are produced at a rate of 136 thousand tons. However, the production quantity of potatoes, one of the most consumed food items, has not changed significantly, averaging 4,777.6 thousand tons annually. Grain production has decreased by an average of 432 thousand tons per year. The production of vegetables and fruits also experienced a significant decrease between 2018 and 2019, with a decline of 8,731 thousand tons, followed by a slight increase of 1,667.2 thousand tons.

**Figure number (03):** Production Index



Source: prepared by the researchers Depending on data from Annexe (1)

In contrast, agricultural production in Algeria increased by 38% in 2022 compared to 2021. This increase includes the grain sector, which produced 41 million quintals in

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the agricultural season of 2021-2022, marking a 48% increase compared to the previous season. Production of dry legumes increased by 20%, and potato production, considered a staple food for Algerians, increased by 30%. Red and white meat, as well as milk production, also saw remarkable increases. According to the Minister of Agriculture, this increased production allowed Algeria to cover 75% of its domestic food needs.

Recently, Algeria has witnessed agricultural diversification in desert regions. Despite the harsh desert climate, the region has seen significant developments in grain cultivation, occupying more than 81,900 hectares, particularly in the regions of Ziban and Djebel Dahia.

Among other crops that have experienced exceptional growth over the past decade are vegetables, currently occupying approximately 92,736 hectares, with 41% allocated for potato production. These crops are distributed across regions such as Touat, Wadi Righ, Mezab, Souf, and Ziban. Fruit tree cultivation covers an area of 21,203 hectares, with olives being the dominant crop occupying 80,010 hectares, followed by apricots and pomegranates. Significant yields have been obtained, particularly in the Ziban and Mezab regions.

As for other crops, 19,196 hectares are allocated for fodder crops, and 5,225 hectares for industrial crops, including tobacco, henna, saffron, and tomatoes.

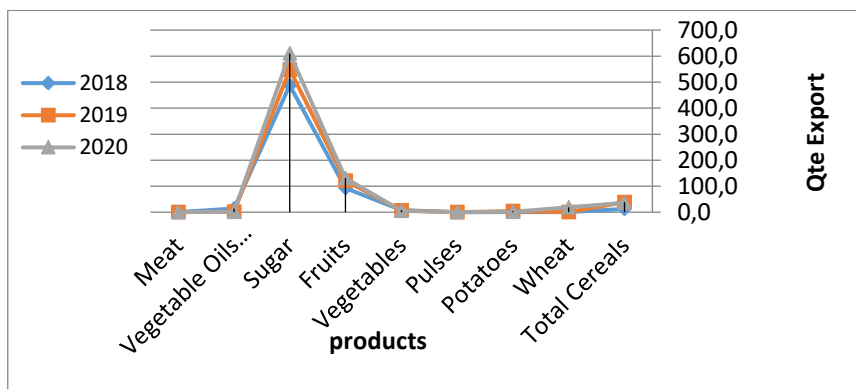
In terms of livestock breeding, sheep breeding dominates with a percentage of 69 percent, primarily concentrated in the regions of Qusour Dahia, Souf, and Ziban. Camel breeding is also a distinctive activity for the southern states, with a population of 339,784 camels, representing the total national livestock wealth.

**3-2 Export Index:** Figure 4 provides a graphical analysis of the export index for various exportable commodities from 2018 to 2020. It is noticeable that the results of this index are weak and almost nonexistent for most commodities. This is a significant concern for the country's economy, despite all the efforts made by the state to promote this process. However, it is essential to consider the global factors, particularly the impact of the COVID-19 pandemic, which affected the entire world, including Algeria, during this period. As a result, most export operations were halted, and countries focused on utilizing what they produced while taking precautions for most commodities.

**Figure number (04):** Export index

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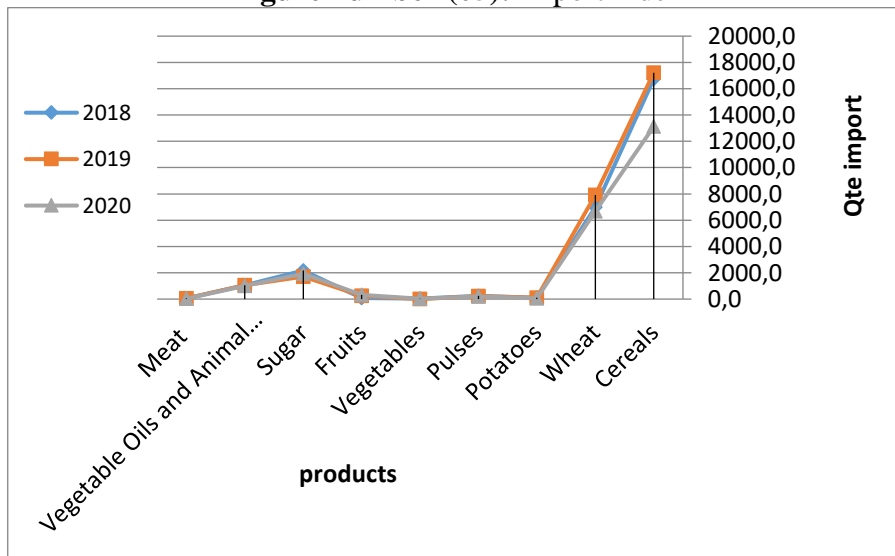
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Source: prepared by the researchers Depending on data from Annexe (1)

**3-3 Import Index:** Figure 5 provides a graphical analysis of the import index for various imported commodities from 2018 to 2020. It is noticeable that the results of this index indicate a decrease in the importation process of goods, largely due to the significant disruption caused by the COVID-19 pandemic. However, concerning grains, despite Algeria's vast agricultural land and the considerable efforts made by farmers, the import bill for grains has continued to rise from 2018 to 2020. This highlights that the quantity of grain imports remains relatively high compared to other commodities. Algeria has relied on local production and the utilization of strategic reserves for most other goods during this period.

**Figure number (05): import index**



Source: prepared by the researchers Depending on data from Annexe (1)

**3-4 Available for consumption Index:** Figure 6 presents a graphical analysis of the Available for Consumption Index for the years 2018 to 2020. It can be observed that the

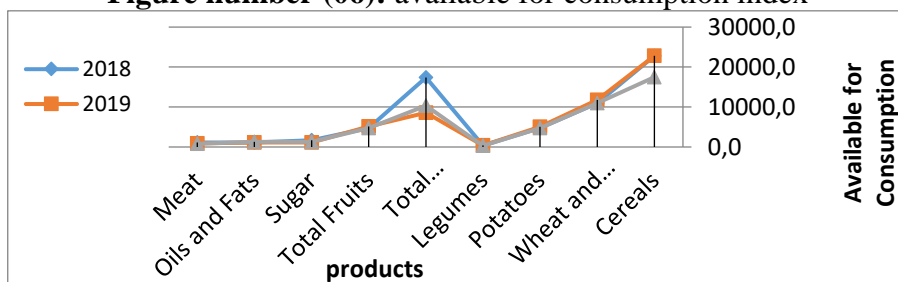


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quantities available for consumption for meat, oils, fats, sugar, and legumes remained relatively constant over the three years, despite being relatively low compared to the population size. However, there was a decrease in the quantity available for consumption of vegetables, especially in 2019, during the COVID-19 pandemic. As for the available quantities of potatoes, fruits, wheat, and flour, they remained relatively stable. The total quantity available for the consumption of grains was adequate but decreased in 2020 by 17,478.2 thousand tons.

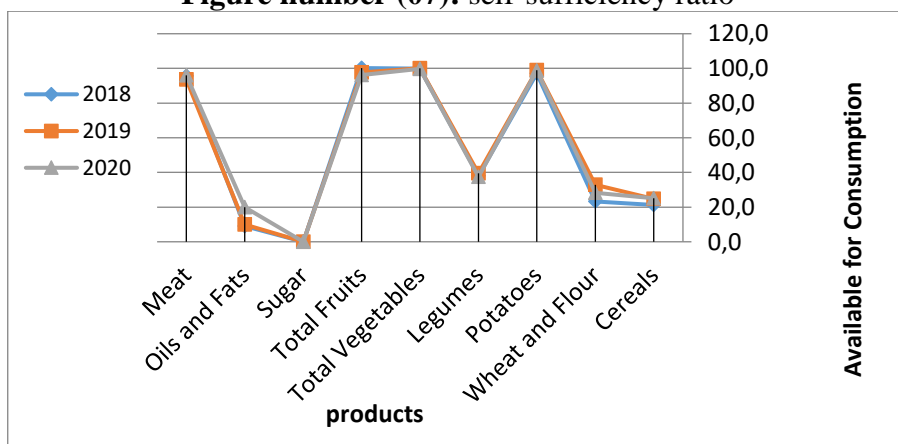
**Figure number (06):** available for consumption index



**Source:** prepared by the researchers Depending on data from Annexe (1)

**3-5Self-Sufficiency Ratio:** Figure 7 provides a graphical analysis of the Self-Sufficiency Ratio Index for the years 2018 to 2020. It is noteworthy that there is no self-sufficiency in sugar. Oils and fats, grains, wheat, and flour all have very low self-sufficiency ratios, averaging around 13%, 23.7%, and 28.1%, respectively. However, legumes have a relatively higher self-sufficiency ratio, averaging 38.4%. On the other hand, meat, vegetables, fruits, and potatoes all exhibit a distinctive self-sufficiency ratio of over 90%.

**Figure number (07):** self-sufficiency ratio



**Source:** prepared by the researchers Depending on data from Annexe (1)

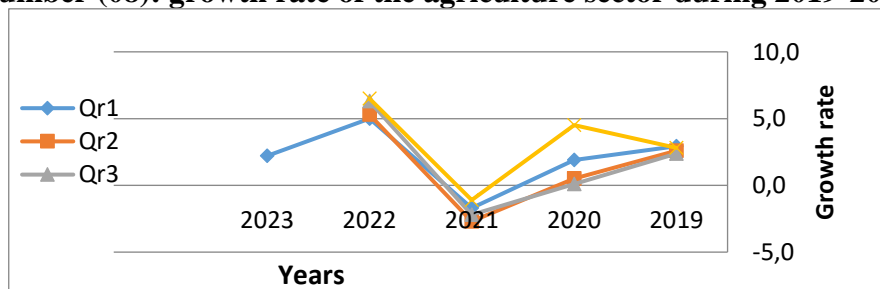
### 4-Challenges facing Algeria for achieving food security:

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Algeria is working on a plan to reorganize its agricultural sector through various initiatives aimed at intensifying efforts to ensure food security, especially in the field of grains, in light of the international changes affecting this sector. Additionally, they plan to expand agricultural land for fodder production while adopting modern technology and fertilizers to increase agricultural areas. According to the World Bank, agriculture contributed 12.3% to Algeria's Gross Domestic Product in 2021, the growth rate of the sector is represented as following in figure number 08.

**Figure number (08): growth rate of the agriculture sector during 2019-2023**



**Source:** prepared by the researchers Depending on data from Annexe 2

Through the figure, we observe that Algeria recorded positive growth of 1.6% in 2020 over the four quarters, compared to 2.7% in 2019 (Algeria, 2021, p. 27). However, in 2021, this growth witnessed a significant and unprecedented decline since 2002, with a negative growth rate of 1.9%, despite the easing of health restrictions. This decline, particularly noted in horticultural, plant, animal, and cereal production, is primarily attributed to unfavorable climatic conditions and an increase in the prices of agricultural imported products, along with stricter import conditions (Algeria, 2022, p. 22).

For that and as part of its new economic vision, Algeria is moving towards diversifying its national economy with realistic and steady steps. Through this approach, they aim to establish a solid foundation for a strong and sustainable national economy that is independent of hydrocarbon revenues. Therefore, food security is considered a top priority in the economic policy of the Algerian state. In the wake of crises experienced by various countries worldwide, especially since the COVID-19 pandemic, the pursuit of policies and strategies to achieve food security has become one of the most significant objectives for Algeria. This is being accomplished by developing agriculture and incentivizing farmers through various means. We observed this during the pandemic when, despite the crisis and halted import operations, there was an abundance of agricultural resources. Since then, Algeria has aimed to reduce the value of imports, especially for items the country can produce domestically.

In emphasizing the strategic importance of the agricultural sector, authority's stress that agriculture must become a genuine driver of comprehensive economic growth by increasing production, including in the strategic agricultural and food sectors. This is also

achieved by promoting integrated development in all rural areas (Subsidy measures for agricultural materials, 2021).

This policy is primarily implemented through a review of the support system based on the following principles:

**4-1 Redirecting Support towards the Strategic Agricultural Sector in the Local Food System (Grains, Legumes, Milk, Meat, etc.):** Algeria is planning to reallocate support to bolster its strategic agricultural sectors within the local food system. This includes essential areas like grains, legumes, dairy, and meat production.

**4-2 Targeted Support for Supply Chains and Aggregation Channels for Various Agricultural Products (Grains, Milk, Potatoes, Industrial Tomatoes, Seeds, and Seedlings):** The government aims to direct support towards the supply chains and aggregation channels of diverse agricultural products, encompassing grains, milk, potatoes, industrial tomatoes, seeds, and seedlings.

**4-3 Rationalizing Support for Key Inputs in Agriculture (Cattle, Fertilizers, Agricultural Machinery, Irrigation Equipment, etc.):** Algeria plans to simplify and rationalize support for crucial inputs in the agricultural sector, including cattle, fertilizers, agricultural machinery, and irrigation equipment.

**4-4 Priority Given to Preserving and Developing the Seed and Seedling Sector for Both Animal and Plant Production:** preserving and enhancing the seed and seedling sector, benefiting both animal and plant production.

**4-5 Selecting Investment Support Targets in Agricultural Enterprises with Consideration for Supervisory and Monitoring Capacities in Agricultural Management:** The government is prioritizing investment support in agricultural enterprises, taking into account the capacity for supervision and monitoring of agricultural management.

**4-6 Ensuring Farmers' Income, Stabilizing It, and Protecting Consumers through Support Measures (Storage Grants, Intervention Reference Prices, etc.) for Essential Consumption Goods (Grains, Milk, Potatoes, Meat, Onions, etc.):** Algeria is committed to securing farmers' income, stabilizing it, and safeguarding consumers by implementing support measures such as storage grants and intervention reference prices for essential consumable goods.

**4-7 Intervening in Integrated Rural Areas Adapted to Agricultural Ecological Characteristics (Combating Desertification and Managing Water Resources):** The government's intervention extends to integrated rural areas aligned with their ecological agricultural characteristics. This includes initiatives to combat desertification and manage water resources.

**4-8 Addressing Support and Accompanying Needs for Small-Scale Farmers and Livestock Breeders through Rural Renewal Programs:** Algeria is focusing on addressing the support and accompanying needs of small-scale farmers and livestock breeders through rural renewal programs.

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The modification of intervention tools and agricultural development support methods aims to:

- Foster a stimulating and secure environment for farmers and active stakeholders in the agricultural and food industries while implementing appropriate support policies.
- Develop and enhance regulatory tools and procedures.
- Support priority sectors in wealth production.
- Enhance the capacities of public institutions, directorates, and agricultural cooperatives in executing development programs and regulatory measures.
- The Algerian authorities are aiming to enhance food security and health in 2023 by providing essential commodities that are currently being imported, achieving self-sufficiency, and working on exporting surplus goods.

This will be accomplished through a set of measures that are set to be implemented before the end of 2023 (World Grains Forum: Algeria presents in London its pioneering experience in achieving food security, 2023), focusing on:

- Opening new markets and avenues to encourage product marketing and raw material imports.
- Implementing the new legal framework for investment as soon as possible.
- Executing the new export promotion strategy outside of hydrocarbons by year-end.
- Establishing Algerian banks in Europe and Africa, this is through the establishment of 5 public banks in both France, Senegal, and Mauritania (Hadhafa, 2022).
- Rehabilitating and modernizing machinery and government bodies specialized in supporting exporters.
- Re-establishing the role of the Ministerial Committee for Foreign Exhibitions and Economic Events and the National Agency for Export Promotion by providing economic information for this economic operators and let them studying target markets, especially those within our continental region, considered a natural extension and priority for our economic presence.

- **Implementation of a New Information System for Customs Services Before the End of the Current Year 2022:** This is aimed at enabling stakeholders to benefit from more facilitation in their operations related to the import of raw materials and export of final products.

- **The Necessity of Adopting a Precise Foresight Vision for Food Security to Address Contemporary Transformations:** It's essential to intensify cooperation with development partners, including Arab and international organizations, particularly the Arab Center for Studies of Arid Zones and Dry Lands, for problem-solving and knowledge exchange (The need to adopt a precise forward-looking vision for food security to face contemporary transformations, 2023).

- **Encouraging Agricultural Insurance for Ensuring Food Security:** In Algeria, there are 5 agricultural insurance institutions (CAAT, SAA, GMA, 2A, CIAR) in addition to a mutual insurance organization CNMA (Manaa, 2023, p. 249).

- The Secretary-General of the African Insurance Organization emphasized the importance of government contributions to promoting agricultural insurance. This includes subsidies to facilitate insurance premium payments and the development of legislation that incentivizes the growth of this insurance branch. Furthermore, educating farmers and implementing stimulating measures for their benefit are crucial for developing this process (To secure the farmer, an “important” link to ensuring food security in Africa, 2023).

**-Protecting Farmers and Investors from Climate-Related Risks (Droughts, Floods, Forest Fires):**It's imperative to shield farmers and investors from the fear of and withdrawal from investments in the agricultural sector due to climate fluctuations, including droughts, floods, and forest fires. These events often lead to financial vulnerability among those involved in the agricultural sector (Food security challenges in Africa require “innovative solutions” from the insurance sector, 2023).

**-Improving the Regulatory and Legal Frameworks and Management Methods for the Insurance Sector:** This is necessary to expand insurance coverage for small-scale farmers, micro-enterprises, and investors in the agricultural field. Achieving this involves creating simplified mechanisms and effective communication channels. The role of digitization and innovation in overcoming procedural obstacles, particularly in enhancing performance, is a critical aspect.

**-The Necessity of Adopting Artificial Intelligence and Modern Technologies in Managing Food Security in the Arab World:** Experts from the Arab world who participated in the first scientific symposium on food security in the Arab world, concluded on May 29, 2023(integrating artificial intelligence and biotechnology into food security in the Arab world, 2023), emphasized the integration of concepts of artificial intelligence, modern technologies, and biotechnology in managing the issue of food security in the Arab world. The symposium also praised the need to enhance mechanisms for scientific exchange among Arab countries and to increase collaboration between experts concerned with food security within the framework of research cooperation. Additionally, it highlighted the formation of an Arab mission dedicated to the topic of food security, as well as the activation of exchanges at various research, scientific, and civil levels to overcome multiple challenges and risks. The utilization of modern technologies and scientific research, along with the promotion of dialogue and cooperation among Arab countries, were also emphasized.(The necessity of adopting an accurate forward-looking vision for food security to confront contemporary transformations, 2023)

**-Promoting Desert Agriculture** (Promoting Desert Agriculture, 2023): Desert agriculture is part of the roadmap (2020-2024) outlined in the government's action plan derived from the program of the supreme authorities. This plan particularly focuses on developing desert agriculture and enhancing the green economy, including the implementation of spray and drip irrigation systems covering approximately 939,200

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hectares (64% of the total irrigated area)(All conditions for achieving food security are combined in Algeria, 2023)

**-Definition and Encouragement of Agricultural Loans** (Encouragement of agricultural loans, 2023): Agricultural loans vary according to the needs of farmers, including seasonal loans, directed at both farmers and investors. The Ministry of Agriculture and Rural Development bears the full interest coverage for a period of two years. Investment loans are targeted at farmers, cooperatives, model farms, and economic institutions engaged in production (such as grains, potatoes, honey, and olives) and processing (industrial tomatoes). As for the Challenge Loan, it is aimed at establishing new agricultural and animal husbandry ventures on unutilized agricultural land owned by private individuals or the state. The Ministry covers the interest if the repayment period is five years or less.

**-Promoting and Developing Agriculture in Mountainous Regions** (Developping Agriculture in Mountainous Regions, 2023): The mountainous regions that extend along the northern part of the country, bordered by highland plains, are of paramount importance in terms of social and economic development. These areas possess high potential that must be harnessed to revive certain activities and establish essential infrastructure, thereby enhancing regional attractiveness and maintaining rural populations. To encourage this form of agriculture, the agriculture sector has initiated various development programs for these regions. Over 4,000 ongoing projects have been implemented, 210,000 hectares of forests have been reforested, 100,940 hectares of trees have been planted, 116,666 kilometers of pathways have been opened, 100,800 linear meters of irrigation channels and waterways have been created, and 1,325 water storage reservoirs have been constructed. Additionally, other measures have been taken to conserve water and soil, including the treatment of gullies amounting to 1,403,233 cubic meters in size.

-This approach also aims to protect natural resources, modernize agricultural activities, innovate in diversifying and enhancing production, and remove constraints that affect the utilization of agricultural land. The mentioned roadmap has been presented to facilitate these objectives.

### **Conclusion:**

In conclusion, Algeria is dedicated to ensure its food security within its borders, considering it as an integral part of its national security. The nation aims to achieve food security with a yield of 50 quintals per hectare, as outlined by the higher authorities. Relying entirely on local seed production in agriculture poses a significant challenge, one that the agricultural sector must intensify its efforts to overcome.

Despite these extensive efforts and strategies adopted to support food security, challenges remain. The continuous threat of food shortages necessitates collective actions and innovative solutions. Cooperation between Arab countries in proposing solutions to achieve food security is imperative.

Here is a **summary of the most significant actions, solutions, and recommendations** proposed by international organizations:

**First in all:** According to the Joint Statement of the Heads of the Food and Agriculture Organization, the International Monetary Fund, the World Bank Group, the World Food Programme (Press release No. 22/313, 2022), and the World Trade Organization regarding the global food security and nutrition crisis, ongoing, comprehensive, and coordinated efforts are required to support the efficiency of production and trade, enhance transparency, accelerate innovation, and engage in joint planning and investment in transforming food systems. This is crucial for maintaining momentum on these fronts and building resilience for the future.

❖ **Investment in Agricultural Infrastructure:** Investing in agricultural infrastructure is essential to enhance food production and distribution. This includes improving transportation networks, storage facilities, and irrigation systems. By modernizing and expanding infrastructure, countries can reduce post-harvest losses, increase market access for farmers, and ensure a stable food supply.

❖ **Market Access and Trade Policies:** Efficient and fair trade policies play a crucial role in ensuring food security. Governments should aim to create an enabling environment for agricultural trade, reduce trade barriers, and promote exports of surplus agricultural products. Additionally, they should implement policies that safeguard the interests of small-scale farmers and protect them from market volatility.

❖ **Research and Innovation:** Investing in agricultural research and innovation is essential for improving crop yields, developing drought-resistant varieties, and enhancing agricultural practices. Research institutions, universities, and private sector partnerships should be encouraged to develop new technologies and practices that increase food production while minimizing environmental impact.

❖ **Agricultural Finance:** Access to affordable and flexible agricultural finance is vital for small-scale farmers and agribusinesses. Governments can promote financial inclusion in rural areas by supporting the establishment of rural banks, microfinance institutions, and insurance schemes tailored to the agricultural sector.

❖ **Climate Resilience and Sustainability:** Climate change poses a significant threat to food security. Sustainable agriculture practices, such as organic farming, crop rotation, and agroforestry, should be encouraged to ensure long-term food production. Governments can incentivize the adoption of climate-smart practices through subsidies and technical support.

❖ **Capacity Building and Education:** Investing in human capital is essential for the agricultural sector. Governments should provide training programs and educational opportunities for farmers to improve their skills and knowledge. This includes training on modern farming techniques, sustainable practices, and the use of technology.

❖ **Social Safety Nets:** Establishing social safety nets for vulnerable populations is crucial to ensure that everyone has access to an adequate food supply, especially during

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times of crisis. These safety nets can include food assistance programs, cash transfers, and nutrition support for children and pregnant women.

❖ **Collaboration and Partnerships:** Addressing food security is a global challenge that requires collaboration between governments, international organizations, NGOs, and the private sector. Countries should engage in regional and international partnerships to share knowledge, expertise, and resources to achieve common food security goals.

**Secondly**, regarding the World Bank, as part of a comprehensive global response to the existing food security crisis, the World Bank has announced the availability of up to \$30 billion over a period of 15 months, including \$12 billion for new projects. From April to September, the Bank has committed \$8.1 billion to new projects in 47 countries, with most of this support going to Africa, one of the regions hardest hit by the food crisis. This funding will include efforts to promote food and fertilizer production, enhance food systems, facilitate increased trade, and support vulnerable households and producers (Food Security Update 22/313).

**Thirdly**, the Arab Monetary Fund has issued a set of specific recommendations for Arab countries that share the factors affecting food security, including:

- Investing in renewable energy projects, as they have significant potential for renewable energy sources.

- Managing water resources and preserving them through efficient use, desalination, and water conservation methods.

- Investing in drought-resistant crop varieties to enhance agricultural productivity.

- Preparing for the impacts of rising sea levels by building coastal defenses and restoring ecosystems.

- Regional cooperation through the exchange of expertise, trade agreements, technology transfer, and agricultural investment.

**Fourthly**, the Arab Organization for Agricultural Development (AOAD) has outlined a Sustainable Agricultural Development Strategy 2020-2030(El Arabia,2022:10-13) aimed at providing a framework for managing and addressing challenges in the agricultural sector in Arab countries. This strategy focuses on achieving five long-term strategic objectives:

- Supporting the transformation and adaptation of agricultural and food systems to eliminate hunger and reduce poverty.

- Preserving the sustainable management of agricultural resources and ecosystems in the Arab region.

- Enhancing Arab agricultural integration and framing mechanisms, policies, trade systems, and agricultural investment.

- Developing and prospering rural areas in the Arab region while preparing and supporting capacities to adapt to environmental, economic, and social changes related to the agricultural sector.



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– Improving the technical and institutional management, sharing, and dissemination of agricultural knowledge to support decision-makers (Knowledge Warehouse).

– Underlying all these recommendations and strategies is the essential role of farmers as the primary economic actors, who require special attention, assistance, and awareness, especially considering the challenges they have faced, such as fires that have damaged crops and trees. Additionally, agricultural investors, particularly those with a commitment to sustainable agricultural practices, play a crucial role in ensuring food security, including the potential for exporting agricultural products.

## Annexe number (01): Agricultural guidance index of government expenditures for the period 2018-2020

(V) Value: one million US dollars. (Q) Quantity: one thousand tons

Statement	Country		Cereals	Wheat and Flour	Potatoes	Legumes	Total Vegetable s	Total Fruits	Sugar	Oils and Fats	Total Meat
Production	2018	(Q)	6065,9	3981,2	4653,3	146,3	17351,2	4779,8	0	101,4	1047,7
	2019		5633,5	3876,9	5020,2	146,6	8620	5006,1	0	115,8	828,4
	2020		4393,1	3106	4659,5	115	10287,2	4552	0	249,9	798,5
Exports	2018	(Q)	12,4	0,8	0,8	0	8	92,2	487,9	14,2	0,2
		(V)	1,9	0	0,3	0	12,3	111,2	156	16	0,4
	2019	(Q)	38	0,2	4,6	0,1	6,4	120,8	548,1	1,8	0,7
		(V)	3,6	0	1,1	0,1	5,2	112,2	263,7	2	1,5
	2020	(Q)	36,5	18,6	2,1	0,1	5	130,6	610,1	1,7	0,5
		(V)	8,8	6,7	0,7	0,1	5,1	138,4	249,4	1,9	0,9
Imports	2018	(Q)	16 734,60	6 987,30	110,40	238,40	37,70	82,50	2 179,80	1 045,40	51,8
		(V)	2 860,40	1 864,20	80,70	259,30	46,20	72,20	838,40	839,80	187
	2019	(Q)	17 215,70	7 911,40	90,50	224,30	0,00	241,60	1 704,00	1 048,20	56,9
		(V)	2 454,50	1 478,00	57,90	321,50	0,10	156,50	751,80	820,40	201,7
	2020	(Q)	13 121,60	6 665,70	62,20	191,50	29,70	315,10	1 928,60	1 003,90	33,8
		(V)	2 742,00	1 614,70	34,50	151,80	32,30	180,10	702,10	768,40	121
Trade Balance	2018	(Q)	16 722,20	6 986,50	89,60	238,40	29,60	-9,70	1 692,00	1 031,20	51,6
		(V)	2 858,50	1 864,20	80,40	259,30	33,90	-39,00	682,40	823,80	186,6
	2019	(Q)	17 177,80	7 911,20	85,90	224,20	-6,40	120,80	1 156,00	1 046,40	56,2
		(V)	2 451,00	1 477,90	56,90	321,40	-5,10	44,40	488,10	818,40	200,2
	2020	(Q)	13 085,10	6 647,10	60,00	191,40	24,70	184,60	1 318,50	1 002,20	33,2
		(V)	2 733,20	1 608,00	33,80	151,80	27,30	41,70	452,60	766,50	120,1
Available for Consumption	2018	(Q)	22 788,10	10 967,70	4 747,30	384,70	17 380,90	4 770,10	1 692,00	1 132,60	1099,2
	2019		22 811,20	11 788,10	5 077,10	370,80	8 613,60	5 126,90	1 156,00	1 162,20	884,7
	2020		17 478,20	10 998,70	4 719,50	306,50	10 311,90	4 736,50	1 318,50	1 252,10	831,8
Self-Sufficiency	2018	%	21,20	23,20	97,00	38,00	99,80	100,20	0,00	9,00	95,6
	2019		24,70	32,90	98,90	39,50	100,10	97,60	0,00	10,00	93,6
	2020		25,10	28,20	98,70	37,50	99,80	96,10	0,00	20,00	96

Source: prepared by the researchers Depending on, <https://aoad.org/ASSY41/statbook41Cont.htm>  
Annexe number 02

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	Agricultural sector growth rate			
	quarter1	quarter2	quarter3	quarter4
2019	2,9	2,6	2,4	2,8
2020	1,9	0,5	0,1	4,5
2021	-1,7	-2,7	-2,2	-1,1
2022	5,0	5,3	6,3	6,5
2023	2,2	--	--	--

**Source:** prepared by the researchers Depending on  
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