

Food Security in Algeria: Concept Review and Measurement Indicators

الأمن الغذائي في الجزائر: استعراض المفهوم ومؤشرات القياس

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Abstract:

This study aims to present the food security situation in Algeria through the World Food Security Index and identify the challenges that prevent the achievement of the goal of food security in Algeria.

This study found concluded that the state of food security in Algeria is still below the good level, and in order to strengthen and support food security, a framework for appropriate policies with an integrated long-term vision must be developed.

keyword: Food Security; Food insecurity; World Food Security Index; Algeria.

JEL classification code : Q18, Q180

ملخص:

تهدف هذه الدراسة إلى عرض حالة الأمن الغذائي في الجزائر من خلال مؤشر الأمن الغذائي العالمي، وتحديد أهم التحديات التي تحول دون تحقيق هدف الأمن الغذائي في الجزائر. تم التوصل في هذه الدراسة إلى أن حالة الأمن الغذائي في الجزائر تبقى في مستوى دون الجيد، ومن أجل تعزيز ودعم الأمن الغذائي لا بد من وضع إطار لسياسات ملائمة ذات رؤية متكاملة طويلة الأجل.

الكلمات المفتاحية: الأمن الغذائي؛ انعدام الأمن الغذائي؛ مؤشر الأمن الغذائي العالمي؛ الجزائر.

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1. Introduction :

Achieving food security is the overarching goal of countries and governments, which have considered providing food needs for the population is a priority to be worked on, especially since the emergence of food security as a concept in the mid-1970s, where it was emphasized that ensuring food security and nutrition is a right for every man, woman and child to live an active and healthy life that preserves their human dignity. It is fixed in many international conventions and treaties.

Food security is a complex subject, and although it is being taken care of by various actors, hunger and food insecurity continue to affect the lives of many people, as it is affected by a different factors, social, economic and environmental, especially political ones.

If we go back to Algeria, it is considered one of the countries that depend on imports to cover its food needs, especially the basic ones, despite the natural resources available to it, so we will try in this paper to answer the following problem:

What is the food security situation in Algeria?

Objectives of the study:

This study aims to:

Present the reality of food security in Algeria through the World Food Security Index.

The importance of studying:

The importance of the study is that it addresses one of the important and sensitive topics, which is the issue of food security, which concerns the countries of the world because it is necessary for communities and individuals and affects their lives. It also deals with the reality of food security in Algeria.

2. Theoretical Framework for Food Security:

This section is devoted to defining what is food security, the legal framework for food security, its dimensions, and food insecurity.

1.2. Definition of food security:

The concept of food security emerged in the mid-1970s in discussions on international food problems. (Clay, 2002) the concept of

food security was officially affirmed in 1974, following the world food crisis of 1973/74.(Sposito, 2009 / 2010, p. 7)Where the term food security was used in the 1974 World Food Conference, which witnessed the first item of the International Declaration on the Elimination of Hunger and Malnutrition that was adopted by governments, "Every man, woman and child has the inalienable right to be free from hunger and malnutrition in order to fully develop and preserve their physical capabilities And mental "(Macer, 2015)The primary focus was primarily on food supply problems to ensure the availability and to some extent the stability of basic food prices at the international and national levels.

The concept of food security has developed since the 1974 World Food Conference, and the following are the most important definitions of food security:

- Defining food security in the work of the World Food Summit 1974: It is defined as follows: "The availability at all times of adequate global food supplies from basic foodstuffs to maintain a steady expansion in food consumption and to compensate for fluctuations in production and prices."(Macer, 2015)
- The definition of FAO in 1983: Food security means: "Ensuring that all people at all times have material and economic opportunities to obtain the basic foods they need."(Napoli, 2010/2011, p. 8)
- The definition of the World Bank in its report on poverty and hunger in 1986: Food security was defined as: "All people at all times have enough food to lead an active healthy life."(Clay, 2002)
- The definition of the World Food Summit 1996: "Food security is achieved at the level of the individual and the family and the national, regional and global levels when all people at all times enjoy physical and economic access to adequate, safe and nutritious food that meets their nutritional needs and suits their food tastes for an active and healthy life."(FAO, An Introduction to the Basic Concepts of Food Security, 2008)
- The definition of FAO in 2001:The definition of the World Food Summit 1996 has been repeated:"Food security is a situation where all people at all times have access to material, social and economic access to adequate, safe and nutritious food

that meets their nutritional needs and suits their nutritional preferences in order to lead an active and healthy life."(Clay, 2002)

From the above definitions, we note that the concept of food security has evolved over time, as in the beginning the focus was on the element of availability and although it is a necessary element it is not sufficient to achieve food security, food may be available but it cannot be reached, while the current concept Food security is a multi-dimensional concept based on access to and access to food, food safety, and that food is appropriate for the tastes of individuals, and ensures an active healthy life, that meaning the concept has evolved from quantitative to qualitative issues, The concept has also evolved from a holistic level (international and national) to a partial level (family and individual level).

2.2. The legal framework for food security :

The right to adequate food as a basic human right was first recognized in the Universal Declaration of Human Rights in 1948, as part of the right to a decent standard of living (Art . 25):

‘Everyone has the right to a standard of living adequate for the health and well being of himself and his family, including food...’(Nations, 2011, p. 3)

The human right to food is established in many international treaties and other instruments, including the Universal Declaration of Human Rights (1948), the International Covenant on Economic, Social and Cultural Rights (ICESCR, 1966) and the Convention on the Rights of the Child (1989). Thus the rights-based approach to food security has a further legal dimension in that governments have a legal obligation progressively to enable all individuals within their borders not merely to be free from hunger but to produce or procure, in ways that are fully consistent with their human dignity, food that is adequate for an active and healthy life. Realizing the right requires “the availability of food in a quantity and quality sufficient to satisfy the dietary needs of individuals, free from adverse substances, and acceptable within a given culture; the accessibility of such food in ways that are sustainable and that do not interfere with the enjoyment of other human rights”(NATIONS, 2006, p. 4)

Adequate food is a human right, a right of every individual in every country. This has been formally recognized by the great majority of states. But there is a large difference between a state’s formal recognition of food as a human right and its putting this recognition fully into practice. If a state is genuinely to treat adequate food as a human right – if it is determined to make that right a reality for everyone.(NATIONS, 2006, p. 1)

2.3. The dimensions of food security:

From the definition of food security, four main dimensions of food security can be identified, for food security objectives to be realized, all four dimensions must be fulfilled simultaneously.

Table1: The four dimensions of food security

Physical AVAILABILITY of food	Food availability addresses the “supply side” of food security and is determined by the level of food production, stock levels and net trade.
Economic and physical ACCESS to food	An adequate supply of food at the national or international level does not in itself guarantee household level food security. Concerns about insufficient food access have resulted in a greater policy focus on incomes, expenditure, markets and prices in achieving food security objectives.
Food UTILIZATION	Utilization is commonly understood as the way the body makes the most of various nutrients in the food. Sufficient energy and nutrient intake by individuals is the result of good care and feeding practices, food preparation, diversity of the diet and intra-household distribution of food. Combined with good biological utilization of food consumed, this determines the <i>nutritional status</i> of individuals.
STABILITY of the other three dimensions over time	Even if your food intake is adequate today, you are still considered to be food insecure if you have inadequate access to food on a periodic basis, risking a deterioration of your nutritional status. Adverse weather conditions, political instability, or economic factors (unemployment, rising food prices) may have an impact on your food security status.

Source: FAO, An Introduction to the Basic Concepts of Food Security, <http://www.fao.org/3/a1936e/a1936e00.pdf>, consulté le 12/12/ 2019

2.4. Food insecurity:

Food insecurity is defined as the situation in which people lack access to adequate quantities of safe and nutritious food to ensure normal growth and development and an active and healthy life, which may be the result of a lack of food, insufficient purchasing power, inappropriate distribution, or inappropriate use of food At the household level. Food insecurity, along with poor health conditions and

inadequate care and food practices, are the primary causes of poor nutritional conditions. Food insecurity may be chronic or temporary. (FAO, The State of Food Insecurity in the World, 2009, p. 8)

Table 2: The Duration of Food Insecurity

	CHRONIC FOOD INSECURITY	TRANSITORY FOOD INSECURITY
		
is...	long-term or persistent.	short-term and temporary.
occurs when...	people are unable to meet their minimum food requirements over a sustained period of time.	there is a sudden drop in the ability to produce or access enough food to maintain a good nutritional status.
results from...	extended periods of poverty, lack of assets and inadequate access to productive or financial resources.	short-term shocks and fluctuations in food availability and food access, including year-to-year variations in domestic food production, food prices and household incomes.
can be overcome with...	typical long term development measures also used to address poverty, such as education or access to productive resources, such as credit. They may also need more direct access to food to enable them to raise their productive capacity.	transitory food insecurity is relatively unpredictable and can emerge suddenly. This makes planning and programming more difficult and requires different capacities and types of intervention, including early warning capacity and safety net programmes (see Box 1).

Source: FAO, An Introduction to the Basic Concepts of Food Security, <http://www.fao.org/3/al936e/al936e00.pdf>, consulté le 12/12/ 2019

The above table shows that the main causes of food insecurity are poverty. The Rome Declaration of 1996 confirmed that poverty is a major cause of food insecurity and hunger, and that progressing steadily towards eradicating poverty is critical to improving access to food. The vast majority of people with hunger and food insecurity They cannot produce or purchase sufficient quantities of food, and they do not have sufficient opportunities to obtain production such as land and water and on production requirements (seeds, appropriate technology and agricultural loans ...).

In addition to these, there are millions of other people affected by war, civil strife, natural disasters, climate-related ecological changes and environmental degradation. Even if all of them were provided with food aid to alleviate their suffering, that assistance would not be a long-term solution to the underlying causes of food insecurity. (FAO, 1996)

According to the FAO report on the state of food security in the world issued in 2018, the number of people who suffer from hunger and food insecurity in the world has increased during the past 3 years and levels have returned to what they were a decade ago, and it is estimated that the absolute number of people affected by a shortage Nutrition or chronic food deprivation in the world increased from about 804 million people in 2016 to nearly 821 million people in 2017.(FAO, The State of Food Security and Nutrition in the World, 2018, pp. xiii - xv)

3. Food Security in Algeria:

This section will be devoted to determining the reality of food security in Algeria by first touching on the Global Food Security Index, second the application of the World Food Security Index to Algeria.

3.1.The Global Food Security Index:

The Global Food Security Index was designed and established by the Economist Intelligence Unit, the research and analysis division of The Economist Group and a global leader in global business intelligence. Created in 1946, it has 70 years of experience helping companies, financial institutions and governments understand how the world is changing and how this creates opportunities to seize it and the risks that must be managed. It Provides business information, forecasting and advice for more than 1.5 million decision makers from the world's leading companies, financial institutions, governments and universities. This index was created through the policy exercise of the Economist Intelligence Unit.

The Global Food Security Index is consist of the three pillars of food security - affordability, availability, quality and safety - in 113 countries. This indicator is a quantitative and qualitative standard measure of performance measurement, created from 28 indicators, which provides an objective framework for assessing food security across a wide range of countries around the world. By creating a standard measure on food security, to enable users to explore issues surrounding food security - including ranking and results and to draw conclusions for policies, business processes and future research.

In addition to assessing food affordability, availability and quality, the model includes a category on natural resources and resilience. The category Natural Resources and Adaptability measures the country's vulnerability to climate change impacts; its vulnerability to natural

resource risks; and how a country adapts to these risks. When applied, they act as a modification of degrees of food security in countries.(Economist, 2018)

The following is an explanation of the dimensions of the indicator:

Affordability: measures the ability of consumers to purchase food and their exposure to price shocks and the existence of programs and policies to support customers when shocks occur.

Availability: measures the adequacy of the national food supply, the risk of interruption of supply, and the national capacity to deploy food and research efforts to expand agricultural production.

Quality and Safety: It measures the diversity and nutritional quality of average meals, as well as food safety.

Natural resources and resilience: measures a country's vulnerability to climate change impacts; its susceptibility to natural resource risks; and how a country adapts to these risks.(Economist, 2018)

3.2.Applicationof the World Food Security Index to Algeria:

According to the evaluation of the World Food Security Index for the year 2018, Algeria is ranked 69 out of 113 countries, and the value of the index is estimated: 52.1%. (The natural resources and resilience category do not contribute to the overall result.)

As for the sub indicators, the results for Algeria are as follows:

Affordability: Rank 69, Index 51.4%.

Availability: Rank 75, index 52.7%.

Quality and Safety: Rank 74, index 52.4%.

Natural resources and resilience: Rank 71, index 57.8%.

Table 3 summarizes Algeria's performance based on the degree of food security for 2018:

Table 3: Performance of Algeria based on their 2019 food security score

Global ranking	Overall score	affordability	availability	Quality and safety
69	52,1%	51,4%	52,7%	52,4%

Source:[https://foodsecurityindex.eiu.com/index\(Consulté le : 20/04/2019\)](https://foodsecurityindex.eiu.com/index(Consulté le : 20/04/2019))

According to the index, we find in the first 9 places: Singapore (85,9), Ireland (85,5), United Kingdom (85), USA (85), Netherlands (84,7), Australia (83,7), Finland (83,3), Canada (83,2).

The index also provides an assessment of the performance of countries from 2012-2018, and Table 4 shows Algeria's performance during the 7 years:

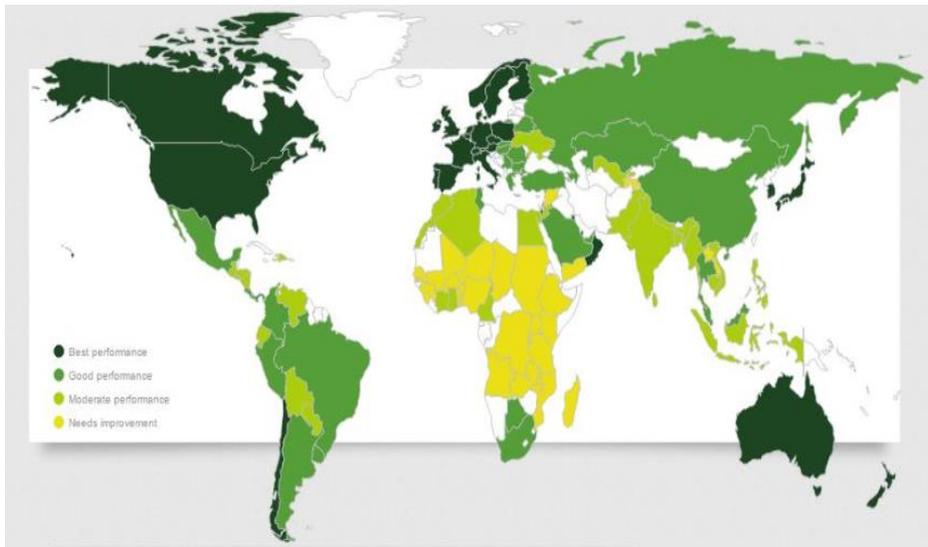
Table 4: Algeria's performance during the period 2012-2018

ranking	2012	2013	2014	2015	2016	2017	2018	7 years changed
69	49,6	49,7	52,6	54	55,1	52	52,1	+2,5
Change		0,1+	2,9+	1,4+	1,1+	3,1-	0,1+	+2,5

Source: <https://foodsecurityindex.eiu.com/index> (Consulté le : 20/04/2019)

Map 1 also shows the classification of countries according to the level of achieving food security:

Map 1: World Food Security Levels



Source : <https://foodsecurityindex.eiu.com/index> (Consulté le : 20/04/2019)

According to the World Food Security Index, countries are divided into 4 groups:

1- **Countries with the best performance**, which are shown on the map in dark green color.

2- **Countries with good performance**, which appear on the map in medium green color.

3- **Countries with moderate performance**, which appear on the map in light green.

4- **Low-performance countries**, which appear on the map in yellow.

We note from the map that Algeria appears in light green, that is, at the third level, and this means that the level of achieving food security in Algeria is not good, and it is far from the required levels.

3.3. Food security challenges in Algeria:

The main challenge facing the agricultural sector in Algeria is to achieve a significant increase in agricultural production in order to meet the growing demand for food and to ensure a higher level of food security for the population, Among the reasons that prevent this are the following:

- The weakness of Algerian agriculture and its structural inability to meet domestic demand;
- Resorting to imports to fill production shortages and ensure food security for the population, which caused the trade balance to fail, and the continued growth of foreign currency devoted to processing food bills;(Chabane, 2011, p. 200)
- fluctuations in the prices of the main food products and their negative effects on the importing countries and Algeria are among the countries that are highly dependent on covering the basic needs of the population for importing;(المتوسط، 2014، صفحة 10)
- Unfavorable agro-climatic conditions and the degradation of available agro-ecological resources;(Chabane, 2011)

- The scarcity, misuse and depletion of water resources due to the inefficiency of irrigation methods, which negatively affects agricultural production and food security;(للتخطيط، 2015، صفحة 13)
- Insufficient investment, especially in agricultural research, which does not exceed on average 0.6% of agricultural GDP. /جبارة، 2014 (صفحة 331، 2015)
- The absence of adequate governance structures to ensure institutional stability, transparency, accountability and the rule of law, which leads to ineffective decisions being made;
- Lack of coherence in policy development and prioritization of policies, plans, programs and financing.(العالمي، 2017)

4. Study Methodology :

In order to present the food security situation in Algeria, this study relied on a descriptive approach to explain the phenomenon and describe its characteristics in terms of theoretic (By describing food security, the legal framework for food security, its dimensions, food insecurity) and quantity (through the digital description of food security in Algeria using the World Food Security Index)

The global food security index was chosen because it considers the core issues of affordability, availability, and quality across a set of 113 countries. The index is a dynamic quantitative and qualitative benchmarking model, constructed from 34 indicators, that measures these drivers of food security across both developing and developed countries.

5. Study Results :

Through this study, a set of results was reached:

- Food security is a human right and is a constant in many international treaties ;

- The number of hungry and food insecure people in the world is increasing, In 2017, it reached nearly 821 million people;
- Algeria is one of the net food importers ;
- According to the assessment of the 2018 World Food Security Index, Algeria ranks 69 out of 113 countries ;
- Although the performance of food security in Algeria is constantly improving, it remains below the required level;
- Algerian agriculture is characterized by weakness and its structural inability to meet local demand;
- Lack of coherence in policy development and prioritization of policies, plans, programs and financing.

6. Conclusion:

The concept of food security emphasizes the necessity of all human beings at all times to have physical and economic access to adequate, safe and nutritious foods that meet their nutritional needs and suit their nutritional tastes for an active and healthy life. Many people in the world lack access to adequate quantities of safe and nutritious food due to wars, civil conflicts, natural disasters and climate change.

According to the Global Food Security Index, which provides a framework for assessing food security for countries around the world, levels of food security vary between a low level of performance and a better level of performance.

As for Algeria, it is considered one of the countries with an average level of food security, due to several reasons, including:

- the structural weakness of Algerian agriculture;
- Weak agricultural investment, especially in agricultural research;
- The absence of adequate governance structures, which leads to ineffective decisions being made;

- Lack of coherence in policy development and prioritization of policies, plans, programs and financing.

In order to ensure food security for individuals in Algeria, an appropriate policy framework with an integrated long-term vision must be developed, based on the available capabilities and restrictions imposed, and the policies established must be characterized by inclusiveness, differentiation, sustainability, and applicability, in addition to the need to have preconditions of consistency. Social, management system efficiency, and macroeconomic fundamentals integrity.

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