

The role of food security towards sustainable development

دور الأمن الغذائي في تحقيق التنمية المستدامة

Tounsi Sabrina¹

¹Faculty Of Law, Algiers University 1, Algeria
s.tounsi@univ-alger.dz, Economic Law Research Laboratory

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الملخص:

يرتبط الأمن الغذائي بشكل كبير بالقطاع الزراعي، كون هذا الأخير يعد أحد أهم المصادر لتوفير الغذاء، ولتحقيق ذلك ينبغي الأخذ بعين الاعتبار محدودية الموارد الطبيعية وزيادة الاحتياجات الغذائية. ما يستدعي بذل المزيد من الجهد لزيادة الإنتاج الزراعي بشكل مستدام، وضمان حصول جميع من يعانون من الجوع وسوء التغذية على الطعام الكافي.

هذا ما أكدته مؤتمر التنمية المستدامة لعام 2012 (ريو+20)، للفرد الحق في الحصول على طعام آمن ومغذ، وذلك من خلال تدعيم الزراعة المستدامة، وتمكين صغار المزارعين وتعزيز المساواة بين الجنسين، بالإضافة إلى إنهاء الفقر في الريف، ضمان أنماط حياة صحية، معالجة تغير المناخ وغيرها من القضايا التي تم تناولها ضمن مجموعة أهداف التنمية المستدامة السبعة عشر في خطة التنمية لما بعد عام 2015.

الكلمات المفتاحية: التنمية المستدامة، الأمن الغذائي، الزراعة المستدامة، أهداف التنمية.

Abstract:

Food security is closely linked to the agricultural sector, which is one of the most important sources of food. To achieve this, the limited natural resources and growing demand for food must be considered. In order to ensure that all those suffering from hunger and malnutrition have access to adequate food, more needs to be done to sustainably increase agricultural production.

As emphasised at the 2012 Conference on Sustainable Development (Rio+20), the right to safe and nutritious food can be realised by promoting sustainable agriculture, empowering small-scale farmers, and achieving gender equality. Ending rural poverty, ensuring healthy lifestyles, addressing climate change and other issues are among the 17 Sustainable Development Goals (SDGs) addressed in the post-2015 development agenda.

Key words: Sustainable Development, Food Security, Sustainable Agriculture, Development Goals.

Introduction:

Food security is a fundamental issue of great importance at the present time. Paying attention to food security is one of the most important requirements for society, as it has a significant impact on the country's economy and stability. A lack of food security places a heavy burden on society, affecting both the economy and society.

Food security is one of the most important areas that various countries rely on to improve the living standards of the population, especially since food is a necessary and indispensable element to ensure human survival and good health at all times, so food plays a major role on all social, economic, political and cultural levels.

Therefore, the international community has focused primarily on food security, as it was included in the Millennium Development Goals (MDGs) as a prerequisite for achieving the Sustainable Development Goals (SDGs). This is particularly relevant in relation to Goal 2, which aims to eradicate hunger, food insecurity and malnutrition in all their forms.

Therefore, based on the importance of food, governments are seeking to enhance their food security in its various dimensions through new approaches during the third millennium. This involves adopting a new plan to improve the goals and paths of sustainable development, particularly the second goal of alleviating poverty, hunger and malnutrition, and achieving social and economic well-being.

The 2021 State of Food Security and Nutrition in the World report by the UN is a global benchmark for tracking progress towards achieving this goal. It emphasises that the world is currently not on track to achieve it by 2030.

This raises the following question: **In what ways can food security contribute to achieving sustainable development goals?**

To answer the above question, an analytical method was adopted to analyse the relationship between food security and sustainable development. This study was therefore divided into two parts: the first examined the conceptual framework of food security and sustainable development according to international law; the second highlighted the impact of food security on achieving sustainable development.

1- Conceptual Framework for Food Security and Sustainable Development under International Law

The concept of sustainable development is one of the most significant modern concepts to emerge in the evolution of economic and developmental thought. Its first signs appeared alongside growing awareness of environmental and social issues among organisations, institutions and individuals, leading to the development of a new concept of sustainable development, which was formalised at the 1972 Stockholm Conference. The first section: A conceptual framework for food security and sustainable development under international law.

However, the term 'sustainable development' was officially and permanently adopted with the publication of the World Commission on Environment and Development (WCED)

report, also known as the Brundtland Commission, in 1987. It occupied a significant position at an international level, with various governments paying great attention to it and considering it a basic requirement to achieve justice and equity in the distribution of development gains and wealth between different generations (1).

1.1- The concept of food security and its dimensions

The concept of food security emerged in the second half of the twentieth century and is one of the most important concepts in this field. It has received widespread attention from economists and political scientists in particular, due to its importance in the context of new security approaches. Food security is one of the main dimensions of human security.

1.1.1- Definition of Food Security

The following definitions offer insight into the concept of food security:

A- Food and Agriculture Organisation (FAO) definition: According to the FAO definition, food security exists when all people at all times have physical, social and economic access to sufficient, safe and nutritious food that meets their nutritional needs and dietary preferences and ensures that they lead a healthy and active life.

B- Food security can also be defined as follows: The ability to meet the basic food needs of the entire population on a continuous basis. This is achieved through two main sources: national production and imports from abroad. No country can fully fulfil its own needs.

The above concepts allow us to define food security as a country's ability to regularly provide its citizens with sufficient food, ensuring an active and healthy life.

1.1.2- Dimensions of Food Security

Based on the 2009 World Summit on Food Security declaration and the above definition, the following four dimensions of food security can be identified: food availability; food access; food quality; and food stability.

A- Food availability:

The definition of food security adopted at the World Nutrition Summit in 1996 focuses on food availability, including access to food. According to this definition, a lack of food availability means a lack of access to food. Therefore, food availability is defined as 'the existence of food and its availability to individuals by various means, whether through local production, imports or food aid, at individual, family, national and international levels'.

This definition included the dimensions of food availability and access for individuals, which were made available to them by the relevant authorities. It also covered the means by which food availability and access are achieved, including local production, imports, and food aid for individuals, families, and the state. However, food is not necessarily accessible just because it is available. Availability does not necessarily guarantee access to food. Food may exist and be available, but individuals may still be unable to access it for a variety of reasons. Environmental barriers may be one of these reasons.

B- Access to food:

Access to food is based on two pillars: Economic access and physical access. Economic access is determined by disposable income, food prices, and the provision and accessibility of social support. Physical access, on the other hand, is determined by the availability and awareness of infrastructure, including ports, roads, communications, railways, and food storage facilities. These facilities play a key role in determining food security outcomes (2).

C- Food quality:

Many official and unofficial bodies have attempted to establish a precise definition of food quality. However, this concept is often confused with food safety, which refers to the absence of any danger to health during the circulation of food, in accordance with approved rules and standard specifications. Food safety also refers to the state in which food is fit and acceptable for human consumption. This includes both food quality and food safety, meaning there is overlap between the three concepts and food safety encompasses them both.

In the informal sphere, food quality has been defined: 'It is a set of values that affect food and make it desirable on the one hand and fit for consumption on the other, and these values are: Nutritional value (i.e. what nutrients the food contains, such as vitamins, proteins...etc.) Health value means the safety of the product from any contaminant, or anything that poses a risk when consumed.

The official definition of food quality is provided by the International Organisation for Standardisation (ISO) and the Food and Agriculture Organization (FAO): "a set of characteristics by which the suitability of a product for consumption can be determined".

However, this definition did not differentiate between food quality, validity and safety. The FAO, on the other hand, defined food quality as follows: 'the degree to which a food has the necessary characteristics and qualities to satisfy consumers' needs and desires, provided it meets the quality standards set by a competent authority'.

Food security is defined as when all people have physical, economic and social access to sufficient, safe and nutritious food at all times to meet their dietary needs for a healthy life. It encompasses issues related to food availability, stability and quality, and is a prerequisite for the full enjoyment of the right to food (3).

D-Stabilisation:

Two types of indicator have been identified to measure the extent and exposure to risks affecting stability. The primary indicators of risk exposure include irrigated area, which is an indicator of vulnerability to climatic shocks such as drought. A second set of indicators shows risks and threats that directly affect food security, such as: food price fluctuations and political instability. Food stability means that adequate food is accessible

at all times, with no risk of loss of access as a result of sudden shocks, such as: economic or climatic crises (4).

1.2- The concept of sustainable development

Human development projects in various economic, social, cultural and political areas have led to many changes and achievements, but have also caused environmental damage. In response to these environmental issues and dangers, several international conferences and meetings were held, resulting in agreements on the preservation of biodiversity, climate change, forest protection and desertification. Attention was drawn to the importance of addressing environmental and development issues to preserve the future of humanity, hence the idea of sustainable development that preserves the rights of all generations to natural resources.

1.2.1- Definition of sustainable development:

One of the most prominent modern concepts, sustainability has been the subject of much debate, with seminars and workshops held to define it. It is an environmental term that describes how biological systems remain diverse and productive over time (5).

The term 'sustainable development' was first used by the Brundtland Commission and has since become a widely accepted concept in many disciplines, including: Transport, Water and Tourism. It means 'the ability to meet the needs of the present without compromising the ability of future generations to meet their own needs' (6).

The term 'sustainable development' (7) has been in use since the World Commission on Environment and Development (WCED) published its report, 'Our Common Future', in 1987. The report defined sustainable development as development that meets the needs of the present without compromising the ability of future generations to meet their own needs (8).

At the 1992 Rio de Janeiro Summit, the United Nations Conference on Environment and Development (UNCED) defined it as: "The management of economic resources in a way that conserves or improves resources and the environment, enabling future generations to enjoy a better quality of life." (9).

It endorsed Agenda 21, which established the concept of sustainable development, taking into account environmental, human, and developmental aspects, and emphasising the symbiotic relationship between environmental protection and rehabilitation, and development and poverty eradication (10).

In 1991, the economist Robert Solow defined it as follows: 'not damaging the productive capacity of future generations and leaving it in the same state as when the current generation inherited it'.

It focuses not only on the resources consumed by the current generation and passed on to future generations, but also on the quality and nature of the future environment.

According to him, this includes the total productive capacity of the economy, whether physical (factories, equipment, etc.) or cognitive (knowledge structure) (11).

It can also be defined as 'development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs' (12).

1.2.1- The definition of sustainable development by the Algerian legislator:

The Algerian legislator has enshrined the concept of sustainable development within the provisions of the Environment Law, as this concept forms the basis of environmental protection legislation worldwide. This concept requires the reconciliation of economic and social development with the inclusion of the environmental dimension within a framework that ensures the needs of present and future generations. According to Article 2 of the Environment Law, it is also considered an objective that the provisions of the Environment Law seek to achieve.

The Algerian legislator has followed the French legislator in adapting the concept of sustainable development as a goal to be pursued by public authorities, as evidenced by Article 02 of Law No. 10/03 on the protection of the environment in the framework of sustainable development, which stipulates that 'The protection of the environment within the framework of sustainable development aims at' (13).

Sustainable development is defined as 'solidarity between the present and future generations, ensuring the rights of future generations to environmental resources'.

Therefore, sustainable development can be defined as a system that meets human needs forever. This means creating and producing, but taking only what you need and leaving the rest for future generations to ensure its continuity (14).

These definitions reveal that sustainable development is based on certain principles. The Rio de Janeiro Declaration lists 27 such principles, including the following:

- The human right to a healthy and productive life in harmony with nature must be recognised.
- Development must be achieved in a way that equitably satisfies the developmental and environmental needs of present and future generations (15).
- Eradicating poverty and reducing disparities in living standards around the world is essential for sustainable development.
- Environmental protection is an integral part of the development process and cannot be considered in isolation (16).

2- The Impact of Food Security on the Sustainable Development Goals

All countries seek to achieve development because it is an essential element of stability and a means for people to confront their problems. Therefore, the shortage of food cannot be solved

by relying on imports alone; it is better to rely on self-reliance. It is time to address this issue, and this can only be done by developing and implementing a solid strategy. Therefore, we must address strategies for achieving food security and the relationship between sustainable development and food security.

2.1- A strategy to achieve food security

Any development strategy aimed at resolving the issue of food shortages must prioritise sustainable development. To determine this goal, we must identify the root causes of the issue and find radical, permanent solutions.

To analyse the Sustainable Development Strategy and its policies and programmes for achieving food security, it is necessary to understand the strategy's main pillars (17), which are:

- Integration and comprehensiveness of food security policies and programmes.
- The necessary financing must be provided on a conditional basis.
- The agricultural sector must be horizontally and vertically integrated.
- The role of the private sector in agricultural development and security must be emphasised.
- Support food production by subsidising the prices of certain agri-food products or their production inputs.
- Protect consumers by subsidising food and foodstuff prices.

Agricultural resources are one of the most important strategic elements for any country to achieve food security. They help to ensure food security regardless of financial resources, and their unavailability does not necessarily lead to food insecurity. However, this depends on the policies of individual countries (18).

2.2- The relationship between sustainable development and food security

The relationship between sustainable development and food security is like two sides of the same coin. Sustainable food security cannot be achieved without sustainable development, which involves creating sustainable and decent jobs, as well as maintaining and enhancing the productive and regenerative capacities of natural resources (19).

According to the concept of sustainable food security, it is one of the strategic components of sustainable development. This includes policies, programmes and projects that increase the productivity of basic food commodities by optimising the use of available local resources. It also involves eliminating all forms of loss and spoilage of food commodities from producer to consumer, rationalising consumption of food commodities in all forms, and improving the terms of trade for these commodities and production inputs. The aim is to preserve the environmental balance and prevent pollution in all its forms and manifestations. This will be achieved by striving for the greatest possible independence and minimising external dependence. The goal is to provide these food commodities in sufficient quantity and quality for the entire population in the regions where the company operates.

2.3- Threats to Sustainable Food Security (Food Production Challenges)

Some of the biggest challenges facing humanity in achieving sustainable food security are increasing population growth, resource scarcity, ecosystem degradation and climate change. In order to achieve sustainable development, it is essential to promote the transition towards sustainable and resilient food systems to achieve sustainable food and nutrition security for current and future generations.

The issue of achieving, securing and distributing food is one of the most pressing issues facing countries around the world. In addition to this, countries face many challenges and obstacles that prevent them from achieving food security (20).

Land degradation processes are related to the inappropriate use of soil conservation technologies, including manure recycling, soil residue management, deforestation, pollution and overgrazing. In recent years, soil degradation has been exacerbated by competing land use pressures linked to the search for alternative energy sources (e.g. biofuels), urbanisation, and biodiversity loss.

As a result, during the 20th century, the Earth lost 75% of the genetic diversity of agricultural crops, which changed the pattern of qualitative diversity in the fields, as stated in the Millennium Assessment of the Cosmic System, based on which the issue was only partially compensated for by the creation of the seed bank (21).

Land degradation is characterised by the reduction and loss of productive, biological and economic capacities of land. It is a global phenomenon which often has adverse local-level impacts. It is caused by human activities and exacerbated by natural processes, such as climate change. Around 25% of the total arable land is considered degraded, with approximately 12 million hectares added to this total each year. It is estimated that the economic cost of land degradation is \$490 billion per year. This is equivalent to between three and six per cent of global agricultural GDP (22).

In 2008, for example, 81 per cent of marine fisheries were fully or over-exploited, and another 4 per cent were depleted. The loss of off-farm biodiversity has negative impacts on the food system because it involves the loss of pollination by insects provided by living organisms. They provide a natural way of controlling crop pests and diseases. They also point out that 70 per cent of total water resources are used for agricultural irrigation, and this figure is expected to rise by 2050, especially given the increasing domestic demand for water in Africa compared to 1997 levels. In Asia, it will have increased by 20-90% according to the Millennium Ecosystem Assessment 2005 (23).

Finally, high-quality diets tend to be more expensive and are more likely to be adopted by consumers with a higher level of education. Citizens with a lower socioeconomic status tend to consume fewer fruits and vegetables. Globally, several factors hinder sustainable food

security. These include rising global per capita income, which leads to increased consumption of animal-based and processed foods, resulting in high-fat diets, as well as trade liberalisation.

Urbanisation has caused negative changes in our dietary behaviour. It is associated with the greater availability of food options that are often unhealthy, as well as lower energy expenditure in urban jobs. In short, research shows that a widespread lack of access to healthy and nutritious food seriously constrains sustainable food security, particularly affecting urban populations (24).

Importantly, some of the environmental impacts of food production, such as water and waste contamination, are concentrated in cities, which has important implications for food safety. It has been reported that diarrhoea resulting from eating contaminated food and water causes 1.8 million deaths annually. It is clear that urban food systems are emerging as important units of analysis for achieving sustainable food security (25).

Conclusion:

Food security is an essential component of sustainable development. This requires an effective legal framework at national and international levels. Strengthening international cooperation and developing appropriate legislation can help to achieve food security and improve the quality of life for individuals and communities.

This study aimed to determine the extent to which food security requirements have been met in accordance with the Sustainable Development Goals (SDGs), by monitoring progress towards the second goal of eradicating hunger, food insecurity and malnutrition in all their forms. This study aimed to determine the extent to which food security requirements have been met in accordance with the Sustainable Development Goals (SDGs), by monitoring progress towards the second goal of eradicating hunger, food insecurity and malnutrition in all their forms:

- Progress on food security indicators is insufficient, suggesting that the relevant Sustainable Development Goals (SDGs) will be difficult to achieve by 2030 unless urgent corrective action is taken.
- The overall rate of food insecurity has increased slowly over the last six years, primarily due to environmental degradation, drought and loss of biodiversity.
- - Promote cooperation between all entities responsible for implementing the SDGs, with the aim of integrating these entities and achieving the SDGs. Cooperation between countries is crucial to accelerating the implementation and achievement of the SDGs.
- Strengthen the partnership between all parties (government, the private sector, civil society, citizens, etc.) to support the achievement of the SDGs by sharing and mobilising knowledge, expertise, technology and financial resources across all countries.
- All relevant stakeholders, at all levels from national to global, must take urgent and concerted action to get back on track to achieving the Sustainable Development Goals (SDGs) relating to hunger and malnutrition.

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