

The Role of The Food and Agriculture Organization in Enhancing Global Food Security

دور منظمة الغذاء والزراعة في تعزيز الأمن الغذائي العالمي

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Abstract:

In a world facing growing challenges of poverty, hunger, and environmental threats such as rising temperatures, declining rainfall, and climate change, the concept of food security is emerging as a strategic priority at the international level. The Food and Agriculture Organization of the United Nations (FAO) defines food security as a situation in which all people have, at all times, physical, social, and economic access to adequate, safe, and nutritious food that meets their nutritional needs and food preferences for an active and healthy life.

Hence, the importance and role of the Food and Agriculture Organization, which leads global efforts to eradicate hunger and achieve food security for all. The organization works at various levels, from the field to international policies, in cooperation with more than 194 member states, to enhance resilience and develop the agricultural and food sectors.

Keywords : Food security, Food and Agriculture Organization, Mechanisms and strategies of the FAO organization

Jel Classification Codes : Q01, Q 18.

ملخص :

في عالم يواجه تحديات متزايدة تتمثل في الفقر والجوع والتهديدات البيئية من ارتفاع درجات الحرارة وانخفاض هطول الأمطار وتغير المناخ ، يبرز مفهوم الأمن الغذائي كأولوية استراتيجية على المستوى الدولي. تعرف منظمة الأغذية والزراعة للأمم المتحدة (FAO) الأمن الغذائي بأنه "حالة يكون فيها جميع الناس، في كل الأوقات، قادرين على الوصول المادي والاجتماعي والاقتصادي إلى غذاء كاف، وآمن، ومغذ، يلبي احتياجاتهم الغذائية وتفضيلاتهم الغذائية، بما يضمن لهم حياة نشطة وصحية "، ومن هنا تأتي أهمية ودور منظمة الأغذية والزراعة التي تقود الجهود العالمية للقضاء على الجوع والفقر من خلال اليات واستراتيجيات تعمل على تعزيز الامن الغذائي من الميدان

إلى السياسات الدولية، بالتعاون مع أكثر من 194 دولة عضو، لتعزيز القدرة على الصمود وتطوير القطاعين الزراعي والغذائي.

كلمات مفتاحية: الأمن الغذائي , منظمة الغذاء و الزراعة , آليات و استراتيجيات منظمة الأغذية و الزراعة
تصنيف JEL : Q01, Q 18 .

INTRODUCTION

Humanity has known food security as a social phenomenon since ancient times and has relied on it for survival through control of nature, its cruelty, and its fluctuations. However, this existence has remained largely dependent on securing food for limited periods of time. The issue of food security is also one of the major challenges facing the world and one of the basic concepts that many international and global organizations, especially the Food and Agriculture Organization, have focused on as a fundamental alternative issue to the concept of self-sufficiency as a result of development and the new global division.

The Food and Agriculture Organization has defined food security as « all the necessary conditions and standards required during the production, manufacture, storage, distribution, and preparation of food to ensure that the food is safe, reliable, healthy, and suitable for human consumption ». (Soltania Belkacem, 2009)

Food safety is related to all stages of agricultural production until the moment of consumption by the last consumer", and there are those who see it as the ability of society to provide appropriate food in quantity and quality to citizens in a way that enables them to enjoy complete physical, mental, and spiritual health » . (Soltania Belkacem, 2009)

Through what we have presented, we have raised the following main problem:

- What is the role of UNFAO in promoting and achieving food security?

The following sub-questions arise from this main problem:

- What strategies does FAO follow to improve agricultural productivity?
- What are the most prominent obstacles that limit the effectiveness of FAO interventions?

The research under study aims to:

- Defining the concept of food security in its four dimensions (availability, access, use, stability)
- Analysis of FAO's organizational structure and how it employs its resources to serve developing countries
- Identify the most prominent achievements made by FAO

As for the approach followed in preparing this research, it is related to the descriptive approach to clarify the approach and strategies adopted by the UNFAO in order to achieve food security.

This topic was chosen for several reasons, the most important of which are:

- The growing importance of food security as one of the most important issues
- Contemporary economic and social issues.
- The pivotal role played by FAO in combating and achieving hunger
- Sustainable agricultural development.
- Global food crises are increasing as a result of climate change and
- International conflicts.
- The desire to deepen academic understanding of the role of international organizations
- Organizations in addressing development issues.
- The issue of food security is linked to economic and social development and the stability of countries.

Therefore, we will try to answer the problem raised through the following headings:
Theoretical framework for food security

- Background on FAO and Its Role in Food Security
- FAO's Food Security Policy
- Challenges and achievements of the FAO in achieving food security.

1. Theoretical framework for food security

Food security has many definitions, but the most prominent is that of the Food and Agriculture Organization of the United Nations (FAO), which defines it as : The availability of sufficient food in terms of quantity and quality, and the possibility of all individuals obtaining it continuously for a healthy and active life. (Fund, 2008)

Food security also refers to: (a society's ability to provide the basic food needs of its members, whether through local production or import, ensuring that Food needs are met at all times. (Baydoun, 2001)

FAO Vision for Food Security: It believes that food security is not limited to achieving food availability, but goes beyond that to include ensuring that all individuals have access to it and can consume it safely and soundly. It also emphasizes that food security is closely linked to production, storage, distribution, and manufacturing processes, in addition to rational food consumption. Food security is achieved when all people have, at all times, physical and economic access to adequate, safe, and nutritious food that meets their nutritional needs and meets the requirements of healthy living.

WHO definition of food security: (The World Health Organization defines Food security is a situation in which all individuals, at all times, have physical and economic access to adequate, safe, and nutritious food that meets their nutritional needs and food preferences, ensuring a healthy and active life). (Bakour, 2000)

In this definition, the WHO focuses on food safety and nutritional quality, the link between food security and public health, and the prevention of malnutrition and food-related diseases.

Personal definition of food security: (Food security can be defined as the ability of a state or society to ensure the permanent availability of sufficient, safe, and diverse food for all its members, while enabling them to access it financially and economically, ensuring that their basic food needs are met, and a A healthy and stable life is achieved.

2.Dimensions of food security

Before addressing the dimensions of food security, we must familiarize ourselves with lobar food security indicators because they reflect the state of food security in the world. These indicators include four food security indicators that help guide food security and nutrition policies, determine their priorities, and provide a more accurate, comprehensive picture of the food security situation in a country. These indicators are as follows : (Waar Wasila, 2021)

2.1 Food Availability Index

Availability is an important dimension of food security, reflecting the availability of sufficient food to individuals. Availability requires not only the quantity of food, but also its quality and variety.

It includes indicator assessment of availability, adequacy of food energy supply, proportion of calories derived from grains, roots, and tubers, as well as average protein supply and average value of food production.

2.2 Access to Food Index

Access to food means that individuals have adequate and continuous access to food resources to obtain a nutritious diet. Access to food is determined by income, food prices, and the ability to receive social support. It also includes access to food, considering the availability of transportation and road infrastructure, in addition to the rate of malnutrition.

2.3 Food Stability Index:

After stability, it expresses the possibility of obtaining food continuously without the risk of losing this possibility due to a specific crisis, meaning for individuals to reach the stage of food security. They must have access to food as a result of economic or climate shocks or seasonal events, and therefore, the concept of food stability includes both availability and access to food.

2.4 Food utilization index

Food utilization depends on the quality of food, how it is prepared and stored, etc., and includes two groups in addition to food utilization: The first includes the variables that determine the ability to utilize food shown by many diseases such as osteoporosis, anemia, the number of women of reproductive age who suffer from anemia, nutritional deficiencies in children under five years of age who suffer from wasting and stunting.

As for the dimensions of food security, they are represented by the following elements :

2.5 Adequacy or abundance

We mean the sufficiency of providing the necessary food supplies at the aggregate level, meaning at the national level, to meet the growing demand for food while ensuring the stability of these supplies in terms of quantity and price, so that they are only sufficient to provide the minimum needs. Food availability plays a significant role in ensuring food security. It is essential to deliver adequate food supplies to a specific segment of the population, whether through local production, imports, or food assistance on a consistent basis. This dimension is not sufficient to ensure that people have adequate access to food.

2.6 Access to food

The work of many researchers has focused on the variable of access to food, after the famines that occurred in some regions of Africa and Asia, as despite the availability of food in sufficient quantities, but large groups were unable to reach it due to its high prices or lack of income, which made the concept of food security move from the macro level to the micro level, so that attention is no longer limited only to the degree of adequacy of supply, but attention has also become limited to the degree of meeting demand at the national, regional, family and individual levels as well. Food access is based on two pillars: economic access and physical access. Economic access is determined by disposable income, food prices, and the provision and access to social support. Physical access is determined by the availability and awareness of infrastructure, including ports, roads, railways, communications, food storage facilities, and other facilities that facilitate the functioning of markets. Agricultural, GATT, fisheries, and aquaculture revenues play a major role in determining food security outcomes

2.7 Time

The time factor was included as a variable to define the concept of food security for the first time by the World Bank in 1986 in its report on poverty and hunger, where it linked the state of hunger that individuals suffer from during a certain period of time to the state of poverty in which they live, and accordingly divided the state of food insecurity into two types: temporary and chronic.

3. Background on FAO and Its Role in Food Security

October 16th of 1945, marked the founding of the Food and Agriculture Organization in Quebec City. In 1951, the organization relocated its headquarters from Washington, D.C., USA to Rome, Italy. As of August 8, 2013, the organization has 194 member states, with the European Union (Member Organization), the Faroe Islands, and Tokelau also being associate members.

Since its inception, the organization has focused on combating poverty, hunger, and malnutrition, promoting agricultural development, enhancing food security, and enabling the population to live a decent life in a healthy environment that fosters activity and vitality.

In accordance with a mandate received from the member nations, FAO, under its Regular Programme, provides policy and technical advice to member countries in the fields of agriculture, livestock, fisheries, forestry, and nutrition. Through the Field Programme, it assists developing countries in their efforts to promote rural development, strengthen food security, increase agricultural production, enhance efficiency in land and water use, and optimize the utilization of forestry and fisheries resources. (Somin Jung, 2025)

The UN-FAO is divided into regional conferences, council committees, and technical committees. The regional conferences focus on numerous specific continents, except North America, Antarctica, and Australia. Council committees are separated by logistics: programme, finance, as well as constitutional and legal matters. The technical committees each have a set topic, including world food security, agriculture, commodity problems, fisheries, and forestry. All UN member states (and the European Union as a member organization) are members of the FAO. With 194 countries and the EU, the FAO provides more than 130 nations with food and agricultural support. (Nation, 2025)

4. Structure of the Food and Agriculture Organization

4.1 Headquarters and Presence: Headquartered in Rome, Italy, it operates in more than 130 countries through five regional offices (Africa, Asia and the Pacific, Europe and Central Asia, Latin America and the Caribbean, and the Near East and North Africa), as well as branch and national offices. It employs roughly 11.000 people.

4.2 Leadership: Led by an elected general manager for a period of 4 years

4.3 Governance: Involves a conference, a council, and technical and regional committees.

The membership comprises 194 states, including the European Union, and non-member states are granted observer status.

4.4 Priority work areas: FAO has outlined the following priorities in its fight against hunger

- Help eliminate hunger, food insecurity, and malnutrition - contribute to eradicating hunger by facilitating policies and political commitments to support food security and make sure that up-to-date information about hunger and nutrition challenges and solutions is available and accessible. (2025)

- Make agriculture, forestry, and fisheries more productive and sustainable - promote evidence-based policies and practices to support highly productive agricultural sectors (crops, livestock, forestry, and fisheries) while ensuring that the natural resource base does not suffer in the process.
- Helping the rural poor access the resources and services they require, including rural employment and social protection, can help reduce rural poverty.
- Enable agricultural and food systems that are inclusive and efficient, with the help of building safe and efficient food systems that support smallholder agriculture and reduce poverty and hunger in rural areas.
- Increase the resilience of livelihoods to threats and crises. Help countries prepare for natural and human-caused disasters by reducing their risk and enhancing the resilience of their food and agricultural systems.
- The strategic objective action plans are fully integrated with gender and governance, which are two fundamental areas of work.

5. FAO's Food Security Policy:

Through the World Food Summit, the organization led the establishment of an action plan based on the foundations of diverse paths, aiming at a common goal: to achieve food security at the individual, family, national, and global levels. The action plan is consistent with the goals and principles contained in the United Nations Charter, and seeks to enhance the results reached by United Nations conferences since 1990.

The plan includes the following commitments:

- Commitment to ensuring an appropriate social and economic environment in which peace and stability prevail and conflicts are avoided, and to following strict policies and giving sufficient priority to respecting the right to food by developing policy-making processes and legislative and executive processes based on democracy, transparency, and the full participation of men and women, considering this is the strongest way to achieve sustainable food security. (Wafiaa, 2022)
- Develop and implement cohesive strategies for rural development in all regions with both high and low potential, and enhance employment, skills acquisition, infrastructure, institutions, and services in rural areas.
- Developing readiness to confront natural disasters and emergencies caused by humans, and ensuring that transient and emergency food needs are met by encouraging recovery, revival, and development processes, while also building capacities to meet future desires.
- Engaging in intensive and diversified sustainable food production that enhances productivity, efficiency, and safety. Prevents pests and decreases waste and losses, taking fully into account the need to preserve natural resources, while encouraging activities aimed at reviving and preserving natural resources in food production areas, developing appropriate political and national plans regarding water and watersheds and methods of managing them and reducing the impact of drought and floods.

Also, the Rome Five Principles provide a strong strategic basis for coordinated action by all stakeholders at the global, regional, and country levels, and adopt a dual approach to combating hunger. These are as follows:

- First Principle: Invest in plans owned by nations that direct funds to well-designed and results-driven programs and companies
- Second Principle: Strengthening strategic coordination at the national, regional, and global levels to improve governance and encourage and distribute resources better.
- Third Principle: Make every effort to follow a dual-track and comprehensive approach to food security consisting of direct measures to immediately combat hunger among the most vulnerable population groups and medium- and long-term programs in the fields of sustainable agriculture, food security, and nutrition.
- Fourth Principle: Ensuring that the multilateral system plays a strong role through sustainable improvements in the efficiency of multilateral institutions
- Fifth Principle: Ensure that all partners are sustainably and significantly committed to investing in agriculture, food security, and nutrition while providing the necessary resources in a timely, reliable, and targeted manner for multiple plans and programs. (Wafiaa K. , 2022)

6. Challenges and Achievements of the FAO in Achieving Food Security

6.1 Challenges of FAO in achieving food security

FAO's mission is complex due to many challenges, despite its significant contributions to achieving global food security :

- Climate change and Environmental Degradation is a critical issues because it poses a direct threat to agricultural productivity through extreme weather events, changing growing seasons, and increased pest pressures. As global temperatures rise and weather patterns become more unpredictable, farmers, especially those living in vulnerable areas, are at risk of losing their livelihoods. (2025)

According to the FAO's report in 2023, 3.3 billion people were experiencing moderate or severe food insecurity, which was partly caused by climate-related shocks that affected 80% of the world's undernourished population.

- Population Growth and Urbanization: By 2050, the global population is predicted to reach 9.7 billion, increasing the demand for food while the amount of arable land per person decreases. According to FAO data, there is a need for a 50% increase in food production to meet 2050 needs, but urbanization in developing regions (like Africa and Asia) is affecting supply chains.
- Poverty, Inequality, and Economic factors: FAO's 2023 report shows that 691 million people experienced hunger in 2022, with poverty being the main cause in 80% of cases. Gender inequalities reduce women's access to resources, impacting 50% of global food production.
- Data Gaps and Weak Information Systems: Another major challenge facing FAO is providing up-to-date and accurate data on food security and agricultural production around the world, or countries suffering from food shortages due to wars or economic crises, and their lack of food security, which is essential for planning policies and strategies effectively. (Nations, 2025)

The FAO must navigate these challenges by promoting adaptive strategies that help communities build resilience against climate-related shocks while also advocating for policies that address climate change at a systemic level. Another challenge lies in addressing the growing disparities in food access and nutrition across different regions of the world. While some countries have made significant progress in reducing hunger rates, others continue to struggle with high levels of malnutrition and food insecurity.

6.2 Achievements of FAO in achieving food security

FAO works to eliminate hunger, malnutrition, and poverty sustainably. Since its establishment in 1945, FAO has brought the world closer to this goal by supporting several important achievements.

- **Codex Alimentarius**

Established in 1963. The most important international body for food standards, Consumer protection, and fair practices in food trade. The Codex Alimentarius ensures safe food, good food, for everyone, everywhere. The Codex Alimentarius Commission was established in 1963 by FAO and the World Health Organization. (page, 2025)

- **Eradication of river blindness in West Africa (1974 – 2002):**

River Onchocerciasis in West Africa, transmitted by infected black flies, has blinded tens of thousands of people. In 1974, FAO, WHO, UNDP, and the World Bank launched a program in 11 countries. Eco-friendly insecticides, combined with a large-scale treatment program, have controlled the disease and prevented infection of 40 million people at risk. River blindness was eradicated in 2002.

- **The Treaty on Plant Genetic Resources for Food and Agriculture**

It was adopted in 2001. (Who owns the seed? Who regulates the conservation, sustainable use, access, and distribution of plant genetic resources?) The International Treaty on Plant Genetic Resources has been adopted by 135 countries after years of diplomatic efforts by the Food and Agriculture Organization. The Treaty on Plant Genetic Resources for Food and Agriculture was adopted in 2001.

- **Agricultural Market Information System (AMIS)**

Founded in 2011, in 2007-2008, sudden rises in food prices threatened food security. Tools are urgently needed to reduce food price volatility. The African Union Mission in Sudan was established in 2011 as an inter-agency platform to promote transparency in global food markets and coordinate policy responses. (Security, 2011)

- **The Agricultural Market Information System**

was established in 2011, The right to food. It was adopted in 2004. The right to food is enshrined in the Universal Declaration of Human Rights. In 2004, the FAO Council adopted the Guidelines on the Right to Food. The guidelines have turned the principles into practical practice. The right to food is now part of the constitutions and legal frameworks of more than 30 countries. The Guidelines on the Right to Food were adopted in 2004.

- **Food Security and Nutrition**

- Production of a food composition table for the Near East.
- Establishment of a Regional and five National Codex Coordinating Committees
- Production of Nutrition Country Profiles for the majority of the countries in the Region.
- Establishment of two regional networks for food composition tables. (FAO, Achievements of the FAO Regional Office for the Near East from 1991-2010)

- **Artificial Intelligence and Machine Learning**

AI applications enhance decision-making in farming and supply chains.

Ex : FAO's AI-powered Hand-in-Hand Geospatial Platform analyzes data to identify investment opportunities. In Bangladesh, it optimized rice production, increasing yields by 20% and reducing hunger in vulnerable communities. (FAO, 2022)

- **Blockchain and Traceability Systems**

These tools help make supply chains more transparent and ensure food safety.

Ex: The Food and Agriculture Organization (FAO) tested blockchain technology in Indonesia's fisheries. By tracking tuna exports, they were able to curb illegal fishing, improve traceability, and cut waste by 15% in 2021. (FAO, Blockchain for Sustainable Fisheries: A Case Study from Indonesia, 2021)

Conclusion

The issue of food security is considered one of the fundamental issues in achieving economic and national security for individuals, and therefore it receives the attention of all members of the international community, as a result of its connection with various issues of peace, political stability, and response to various natural disasters, environmental degradation, trade, and global dangers that threaten the sustainability of food security.

Therefore, we conclude that the sustainability of food security depends on the extent of the concerted efforts of various organizations to confront the problem of hunger and poverty. In light of the growing challenges facing the world from climate change, conflicts, and economic crises, the role of the Food and Agriculture Organization of the United Nations (FAO) remains pivotal in formulating comprehensive strategies to enhance global food security. The organization has proven its ability to coordinate between countries, provide technical support, and build capacities, ensuring improved agricultural production and the sustainability of natural resources. FAO's efforts are not limited to addressing emergency crises, but extend to developing long-term visions for achieving rural development and reducing poverty and hunger. Therefore, strengthening international cooperation and intensifying investments in sustainable agricultural policies remains the best way to translate FAO's goals into reality, ensuring the human right to adequate and safe food.

Accordingly, we tried to develop some recommendations to enhance food security, the most important of which are:

- Focus on sustainability: Support sustainable agriculture policies that conserve natural resources and ensure food security for future generations.
- Partnerships with the private sector and civil society: Expanding cooperation with non-governmental institutions and the private sector to accelerate innovation and achieve development goals.
- Empowering rural communities: Prioritizing programs to support small farmers and rural women, as they are the backbone of global food security.
- Plan and execute projects that establish, strengthen, and finish the basic infrastructure required for agricultural development.

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