

Food Security and International Security: An Analytical View from the Perspective of
Fifth Generation Warfare Technology



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Abstract:

The issue of food security is one of the most prominent trends that has received the attention and study of researchers and theorists in political science, international relations, and other academic and experimental scientific fields. Technology plays a major role in improving agricultural productivity and providing solutions to the challenges facing the agricultural sector, thanks to advanced technologies such as smart agriculture and remote sensing. In addition to defending against digital and biological attacks, the needs of the growing population can be met, and food security plays an important role in the stability of nations, as providing adequate and sustainable food supplies is considered essential for maintaining economic and social stability, as food shortages lead to social and economic unrest, which increases... Therefore, providing food security through technology represents an opportunity to enhance national and international stability, which makes the integration between technology and food security vital aspects in achieving comprehensive stability for nations.

Key words: Food security, fifth generation warfare, digital technology, national security, scientific research.

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Introduction:

The issue of food security is one of the most prominent trends that has received the attention and study of researchers and theorists in political science, international relations and other academic and experimental scientific fields. After the focus on the military and economic aspects of state security and how to develop and protect them prevailed, and in light of the technological progress that has affected all fields and the continuous expansion of the concept of security, it has led to profound transformations in food security, as it goes beyond the traditional atonement based on environmental and natural factors to include economic, technological and political aspects, where competition over agricultural resources becomes crucial in this context, as political unrest and ongoing conflicts constitute another obstacle to achieving food security, as political unrest affects agricultural production, which may be the result of modern and complex wars facing people in the field of national security, of which food security is one of the most important components.

Fifth generation warfare in the field of national security goes beyond traditional security challenges, such as direct military threats, to include more complex aspects related to food, economy, technology and information. In the age of technology, protection from digital threats and control of information sources become vital to maintaining national security.

Fifth generation warfare reflects the shifts in the nature of threats, which are supposed to be more diverse and complex through indirect security impacts. Adapting to these challenges requires comprehensive national strategies that include sustainable improvement of security capabilities and developing the ability to confront effective threats.

Understanding fifth generation warfare has become essential to developing national security policies that meet contemporary challenges and protect the interests of the state in a rapidly changing world.

Through the above introduction, we raise the following problem:

How can technological and political dimensions be integrated in looking at food security through fifth generation wars?

To try to solve this problem, this topic was divided into two sections as follows:

- First axis: Food security within fifth generation wars
- Second axis: The theoretical dimension of food security within fifth generation wars

1. Food Security in Fifth Generation Wars

Food security is one of the most important pillars of national security for countries, as it ensures that societies have access to sufficient and safe food at all times. Food security is a fundamental national and global goal, but it has become more important in light of fifth generation wars, as fifth generation wars are characterized by targeting the country's infrastructure, including food infrastructure. In this axis, we address the relationship between food security and fifth generation wars.

a. The concept of fifth-generation warfare from a food security perspective:

War is a recurring phenomenon that continues to impose its continuity in the world, through the change from the traditional level in its practices among ancient peoples to its organizational development, then its formation in the third generation that changed the form of confrontations between the warring parties, to add the fourth generation warfare the beginning of radical change, and announce a new stage that is consistent with the twentieth century, and with the idea of psychological warfare and the disappearance of the dividing lines between war and politics, combatants and civilians, and enabling non-governmental actors to wage war, in addition to the transformation that the global system has known, and the emergence of the phenomenon of globalization and the technological revolution that accompanied it to cast a group of human transformations their shadows on the formation of fifth-generation warfare. (Ahlam, 2023)

Fifth generation wars are practiced in an indirect military-technical manner, such as digital engineering, misleading information, and cyber-attacks, in addition to modern technologies such as artificial intelligence and information systems, i.e. it is an information war. Fifth generation wars are a term given to military conflicts characterized by the use of a combination of military and non-military methods, and rely on modern technologies such as artificial intelligence and fully autonomous systems. (Ahmed A. M., 2020)

Fifth generation wars are characterized by many characteristics that distinguish them from previous generation wars, the most important of which are:

- Use of modern technologies: Fifth generation wars rely primarily on modern technologies, such as artificial intelligence and fully autonomous systems, which allow for the implementation of precise and effective military operations.
- Focus on non-military operations: Fifth generation wars focus more on non-military operations than military operations, such as psychological, media and economic warfare, with the aim of achieving military objectives without the need to use military force.
- Spatial expansion: Fifth generation wars are characterized by spatial expansion, as they can extend beyond the traditional borders of countries, using the Internet and other modern technologies. (Khoury, 2016)

Food has been considered a political weapon throughout history, and examples of food wars in history include the following:

- Solon is one of the most famous examples of the use of food warfare as a weapon in ancient history. In 428 BC, Solon besieged the city of Megara, preventing it from receiving water from the Iris River, building a dam on the river, and pouring toxic materials into the water flowing into the city. This action led to the spread of disease and famine in the city of Megara, forcing the population to surrender.
- Siege of London in 1940: Nazi Germany imposed an economic blockade on Britain during World War II, which led to food shortages in the country.

- Siege of Kosovo in 1999: NATO forces imposed an economic blockade on Serbia during the Kosovo War, which led to food shortages in the country.
- War in Yemen: Yemen is suffering from a severe food crisis for various reasons, including the civil war and military intervention by Saudi Arabia.

Some experts believe that food wars will become more common in the future, due to countries' dependence on imported food and increasing food insecurity.

b. Methods of fifth generation food wars

Food wars are considered part of fifth generation wars, as they rely on the use of modern technologies such as artificial intelligence and autonomous systems, and they also focus on non-military operations such as economic wars.

Food wars include a set of methods that can be used to target food, such as: (Al-Rashdan, 2019)

- Economic blockade: which affects the import or export of food.
- Agricultural sabotage: which is the destruction of crops or livestock.
- Biological warfare: which is the use of microorganisms to infect crops or livestock. (Megahed, 2020)
- The use of modern technology in military operations: such as the use of artificial intelligence and fully autonomous systems, which allow for the implementation of precise and effective military operations.
- The use of modern technology in non-military operations: such as the use of electronic warfare and cyber warfare, which can lead to the disruption of vital infrastructure.

Technology has made fifth-generation warfare more complex and less predictable, as political issues arise over food security, which some countries may use as a winning card to pressure other countries. Food wars can have significant negative effects, as food crises can lead to famine and deaths. (El-Baz, 2000)

c. The importance of enhancing food security as a national security strategy:

Countries can take a set of measures to prevent the use of food security as a weapon, such as:

- Increasing local food production.
- Improving storage and distribution methods.
- Building strategic food stocks.
- Enhancing international cooperation in the field of food security.
- Establishing international mechanisms to prevent the use of food security as a weapon.

2. The theoretical dimension of food security within fifth-generation wars:

The political theories explaining food security within fifth-generation wars address the relationship between food security and politics, as these theories emphasize that food security is an essential part of the national security of countries, and that countries will resort to using different methods to achieve food security, including military and non-military methods.

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One of the most important political theories explaining food security within fifth generation warfare is the national security theory. This theory believes that a state's national security depends on several factors, including food security, as it asserts that food shortages can lead to social and political unrest, which weakens the state and makes it vulnerable to external threats.

a. The impact of food security on the stability of the state:

Food security is considered one of the security forms of the concept of national security, and there are internal threats to national security of a food nature, as food security is considered one of the most important of these factors, and internal threats of a food nature can be measured by measuring the degree of food shortage or lack of ration, and the existence of large differences in purchasing power, in addition to the unavailability of raw materials and the low level of agricultural production, i.e. the weakness of agricultural and animal production and its insufficiency to meet the needs of society, and the lack of self-sufficiency in food and strategic materials, and the high rates of import and consumption versus the low rates of production. (Hamdan, 1999)

The implementation of the national food strategy requires the use of available national capabilities under all circumstances in order to achieve the highest possible level of food security, with the aim of achieving the interests of the national security of the state. It is a system of scientific and practical methods and means based on the optimal use of national forces and resources in order to achieve national security goals. It is also a set of plans and principles that define the national goals of the state in all fields within the scope of international cooperation and the management of those plans and principles to achieve its national goals within the limits of available capabilities, and within the framework of the principles and rules that define the nature of the contemporary international system.

There is no country in the whole world that achieves complete self-sufficiency in food resources, meaning that there is no complete food security, and therefore all countries of the world depend to one degree or another on importing food materials, which is a factor that has its consideration in relation to the national security of any country. (Mokled, 2007)

b. National Security and Food Security Challenges:

Subjecting countries to food dependency by countries controlling the global economy is an integral part of the policy of those countries in order to subjugate them and ensure their dependency. A country that achieves self-sufficiency in providing its agricultural food crops and industrial products achieves its national security and maintains its sovereignty and the independence of its political decision, while a country that cannot provide this, its national security is exposed and threatened at any moment to penetration and even destruction, and it becomes a dependent state if not a failed state. (Ahmed, 2003)

The migration of farmers to the city has also increased, causing them to abandon agricultural lands, and some have even offered them for sale or left them in order to live a civilized life. This was accompanied by a crisis of desertification, water scarcity, global warming, and others, and the need to provide food commodities to all citizens with rising prices.

The problem of food security, from the perspective of national security theory, is no longer an agricultural problem as much as it has become a political problem, because the food crisis leads to a revolution against any political system, no matter how strong it is. (Mohammed, 2008)

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From here, food security is linked to national security. When food security is achieved, national security is achieved. Changes, developments, and crises have made food security an integral part of the national security of any country. The concept of comprehensive national security includes both internal and external national security, which governments are responsible for achieving and securing in all cases and under any circumstances. (Hamdan, 1999)

Threats to food security can pose a challenge to national security through: (Khassan, 2015)

- Imbalance between population and national production.
- Crises and environmental imbalances.
- Supporting prices and imports instead of enhancing production.
- The control of developed countries over food and their dominance over prices and food quantity.
- Giving priority to non-productive sectors, including trade, services and administration.
- Reliance on oil money that was used in imports and lack of productive work.
- Reliance on traditional agriculture instead of moving towards relying on scientific research.
- Absence of a national strategy and technology in seed production.
- Lack of national coordination that ensures strengthening the relationship between various scientific research laboratories and various agricultural directorates. (Al-Tanoubi, 1996)

c. Regional and international role:

Factors threatening national security mean everything that threatens internal values and the entity of the state and the loss of society's confidence in the political system, whether by external or internal forces, and whether the threat is direct or indirect. Considering that national security in its comprehensive concept is a multi-faceted phenomenon and is not limited to the military aspect, but extends to the political, economic and social aspects, the possibility of exploiting weaknesses in all these aspects is great. (Moneim, 1993)

The national interest is the conditions that help the state to exist and continue, which achieves its goals. It includes preserving the pillars and values of the state, its independence and freedoms in its international relations and supporting its economic hegemony. States may use this concept in an attempt to influence the international environment in a way that serves their interests.

National security policies and strategies must be based on the assumption that a nation is only safe when it maximizes its own power compared to other countries. Foreign policy is the first tool that a state uses to defend its supreme interests, protect its security, and maintain its system of life against all external or internal threats. The effectiveness of a state's foreign policy depends on its diplomatic capabilities, the way the state uses its sources of power, its interactions with international political organizations, international public opinion, and the policies of other countries with common vital interests, and the reflection of all of this on the state's efficiency in explaining its goals to the international community, and its ability to extend its influence abroad. (Mokled, 2007) 114

Self-sufficiency does not mean stopping international relations or cutting off trade with other countries, but rather preparing internal national conditions and circumstances to achieve the highest levels of profit for economic exchange and ensuring the sustainability of the development of national production in terms of quantity and quality. (Gharbi, 2010)

Conclusion:

Food wars are one of the methods that can be used to achieve food security within the fifth generation wars, as these methods can be used to affect global or regional food, which can lead to the suffering of societies and the weakness of countries.

Food independence and food sustainability are no less important than political independence, as they protect the state from dependency, and make it safe from external pressures, global economic crises, and rising prices in global markets.

Food security is not limited to monitoring the amount of food that an individual receives or consumes, but is also related to the quality of the available food, as societies that have certain amounts of food available and are provided with a certain amount are not necessarily food secure, and food security differs from many concepts such as the right to food, as food security constitutes one of the basic goals of the state and a dimension of national security that the government can set and work to achieve, while the right to food is a human right.

It can be said that countries will seek to achieve food security within the fifth generation wars through several methods, including:

- Enhancing local food security: This is done by increasing local food production, enhancing food self-sufficiency, and improving storage and distribution methods.
- Securing food supplies from abroad: This is done by building strong trade relations with food-exporting countries, and establishing strategic food stocks.
- Using military and non-military methods to achieve food security: This is done by imposing an economic blockade on hostile countries, or sabotaging their agricultural lands, or using biological warfare, or monitoring cyber-attacks related to the economy or national security, and enhancing digital defense methods, strengthening international military relations, and exchanging expertise to raise the level of national security.

Among the results reached are the following:

- Food insecurity in the country affects its political decisions and endangers its sovereignty.
- Mismanagement and exploitation of national capabilities lead countries to remain within the import policy.
- Policies and strategies capable of achieving food sufficiency at the local level lack strong political will and weak monitoring and follow-up.
- Achieving food security makes the country possess a strategic weapon.
- Food security is one of the most important components of national security.
- Stability and food security necessarily lead to political stability.

Recommendations:

- Strengthening the role of scientific and technological research in innovating new methods for cyber security.

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- Planning joint cooperation between countries to facilitate access to modern technology.
- Supporting and financing scientific and applied research, appreciating efforts, publishing scientific research, and creating communication channels between researchers to facilitate the exchange and exploitation of information.
- Increasing interest in the agricultural sector and improving production.
- Developing information bases in the agricultural field that work to provide investors with accurate and reliable information and data.
- Enhancing, preserving, and protecting the environment.
- Preparing a long-term strategy for food security.