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ЗАБЕЗПЕЧЕННЯ ПРОДОВОЛЬЧОЇ БЕЗПЕКИ НА ТЛІ ВІЙНИ РОСІЇ
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ДЕКЛАРАЦІЯ АКАДЕМІЧНОЇ ДОБРОЧЕСНОСТІ

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Я, Радецький Василь Миколайович, студент 2 року навчання магістерської програми за спеціальністю “Право” факультету правничих наук НаУКМА підтверджую таке:

написана мною кваліфікаційна (магістерська) робота на тему “*Роль Світової Організації Торгівлі в контексті забезпечення продовольчої безпеки на тлі війни росії проти України*” (англійською мовою: “*The role of the World Trade Organisation in ensuring food security in the context of russian war against Ukraine*”) відповідає вимогам академічної доброчесності та не містить порушень, передбачених п. 3.1. Положення про академічну доброчесність здобувачів освіти у НаУКМА, зі змістом якого я ознайомлений.

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TABLE OF CONTENTS

TABLE OF ABBREVIATIONS	5
INTRODUCTION	6
CHAPTER 1. EXPLANATION OF THE CONCEPT OF FOOD SECURITY AND THE PLACE OF WTO IN ITS ENSURANCE.....	11
1.1. Definition and genesis of the concept of food security.....	11
1.2. Comparable analysis of food security with other related concepts.....	17
1.3. The role of trade and WTO in achieving food security.....	21
CONCLUSIONS TO CHAPTER 1.....	30
CHAPTER 2. IMPACT OF THE RUSSIAN WAR AGAINST UKRAINE ON GLOBAL FOOD SECURITY	33
2.1. State of global food security before the full-scale invasion	33
2.2. Ukraine's contribution to food security before the full-scale invasion	35
2.3. Threatening consequences to food security in the first year of the russian invasion of Ukraine	38
2.4. The consequences for food security two years after the invasion	41
CONCLUSIONS TO CHAPTER 2.....	45
CHAPTER 3. THE REFORMING THE ROLE OF WTO IN PROMOTING FOOD SECURITY DURING THE FOOD CRISIS TRIGGERED BY THE FULL-SCALE INVASION OF UKRAINE	47
3.1. The proposals for amendments to the WTO Agreements limiting the trade of agricultural products originating from the temporally occupied territories.	47
3.2. The ongoing agricultural negotiations on the amendments to the Agreement on Agriculture.....	52
CONCLUSIONS TO CHAPTER 3.....	58
CONCLUSIONS	60
LIST OF AUTHORITIES.....	64

TABLE OF ABBREVIATIONS

AB	Appellate Body
Art./Arts.	Article/Articles
DSB	Dispute Settlement Body
GATT	General Agreement on Tariffs and Trade
FAO	Food and Agriculture Organisation of the United Nations
IFPRI	International Food Policy Research Institute
IMF	International Monetary Fund
LDCs	least-developed countries
NFIDCs	net food-importing developing countries
OECD	Organisation for Economic Cooperation and Development
para.	Paragraph
SDG	Sustainable Development Goal
SPS Agreement	Sanitary and Phytosanitary Measures
TBT Agreement	Technical Barriers to Trade
UN	United Nations
UNGA	General Assembly of the United Nations
US	United States
WFP	United Nations World Food Programme
WTO	World Trade Organisation
WTO Agreement	Agreement Establishing the World Trade Organization

INTRODUCTION

The ongoing full-scale invasion of the Russian Federation into Ukraine, which started on 24 February 2022, constitutes a massive threat to global security and led to a chain of challenges and changes in international law, the humanitarian sphere, the economy, and trade [34].

One of the issues that arose immediately after the invasion was the problem of global food security [82]. It appeared by virtue of the place of Ukraine in the global supply chain of agricultural products. Ukraine, which is commonly named the “breadbasket of Europe” [48] [36], was under a massive attack by the Russian military forces, threatening food security worldwide [61], but in particular for the least-developed countries (LDCs) and net food-importing developing countries (NFIDCs) [84] [93].

The effect of the Russian invasion on international food insecurity was massive by virtue of the vulnerability of the global economy and the international food supply chains even before the invasion caused by the COVID-19 pandemic crisis [42]. The Russian war, in particular, led to the unlawful, temporary occupation of thousands of hectares of agricultural land, land mining and the destruction of agricultural production and storage facilities [52] [86]. Moreover, the Russian military forces blockaded the Ukrainian sea ports, making the export of Ukrainian agriculture by sea impossible and threatening international trade by the Black Sea [35].

The described challenges made the international community react through the established international organisations aimed to face such global challenges [83]. In this study, we will focus on the role of the World Trade Organization (WTO) in ensuring global food security [20] by virtue of the threats triggered by the full-scale Russian invasion [101].

The WTO was established as a cornerstone of global trade governance, fostering cooperation and regulating trade relations among its member states [98] [60] [13]. The WTO law facilitating international trade based on the most favoured nation and national treatment principles of international trade [90].

As international trade was deeply affected by the russian full-scale invasion [75], it is important to study what exact measurements were taken [59] or might be taken by the WTO in reaction to the russian invasion aiming to ensure global food security.

In this study, we will focus on the current system of the WTO law, aiming to ensure global food security and gain knowledge on why the WTO is still not able to conduct the multilateral settlement on the ongoing agricultural negotiations [63] in virtue of the last Ministerial Conference 13 (MC 13) held in Abu Dabi [104]. Besides, we will consider the concept of food security, its history and origin, and conduct a comparable analysis of the concept of food security with other related concepts.

The **topicality** of the study is explained by the fact that the raised concerns with regard to global food security were triggered by the ongoing full-scale russian military invasion of Ukraine. These unlawful actions, along with the COVID-19 pandemic, led to an increase in the number of people in hunger for 122 million more since 2019 [1]. The problem of food insecurity is ongoing, and immediate action is needed to prevent starvation and famines. Besides, the topicality is explained by the need for the reform of the WTO-law system in response to the raised world food insecurity.

The study is **scientifically significant** because of the analysis of the concept of food security [21], as well as its history and origin [96]. The role of Ukrainian agricultural exports in contributing to international food security [36] and the impact of the full-scale invasion of russian military forces into Ukraine on global food security was studied [34] [17]. Besides, within the study, we analysed the WTO agreements [78] [6] [5] [4] [3], principles of the WTO-law system, and proposals for its amendments held during the agricultural negotiations [7], [14].

Similarly, the study's **practical significance** is explained by the possibility of implementing its results by amending the WTO agreements and WTO system to strengthen the WTO's role in ensuring food security.

The **object** of the analysis is the concept of food security, the threat of food insecurity caused by russia's full-scale invasion of Ukraine, and the actions of the WTO aimed at ensuring global food security through WTO law.

The **research question** of the study is to consider how the full-scale invasion of the Russian Federation in Ukraine impacted food security worldwide and consider how the WTO, an international trade organisation that declares its obligation of enhancing food security through trade, faced the global food security crisis caused by the full-scale invasion and how it acted in order to resolve the problem of food insecurity.

The **purpose** of the study is to contribute to the WTO law studies focusing on the issue of ensuring global food security, in particular in virtue of the ongoing Russian full-scale invasion to Ukraine and the development of the amendments aimed to improve the state of the WTO law, which currently is not able to face the challenges to the food security.

The study aims to achieve the following **tasks**:

- (1) to define food security, study its origin and genesis as a part of UN Sustainable Development Goal No. 2 of zero hunger [39];
- (2) to analyse the role of the WTO agreements in establishing the food security and measures taken before the full-scale invasion of Russia in Ukraine;
- (3) to consider the contribution of Ukraine to ensuring of global food security;
- (4) to analyse the impact of the Russian full-scale invasion on global food security and the place of the agricultural products harvested on the occupied Ukrainian territories;
- (5) to propose amendments to the current WTO system on the limitation of the trade of the agricultural products harvested on the occupied Ukrainian territories and consider the current status of the agricultural negotiations from the perspective of the MC 13.

Literature review. Although many articles and scientific studies are dedicated to the impact of the Russian full-scale invasion of Ukraine, few studies are dedicated, especially to the role of the WTO in ensuring global food security in reaction to the full-scale Russian invasion and the issues of food security.

Thus, in this study, we used the following types of sources:

- (a) studies based specifically on WTO law, the most fundamental of which is Van Den Bossche's "The Law and Policy of the World Trade Organization: Text,

Cases, and Materials” [92], as well as the WTO reports and articles on food security, WTO law, and agriculture negotiations; WTO agreements and commentaries thereto [103], [104].

(b) studies of international organisations constantly focused on ensuring global food security, such as the International Food Policy Research Institute (IFPRI) [91] [34] [36] [42] [35] [43] [32] [33], the International Institute for Sustainable Development (IISD) [51] [65] [54] [100] and the Consultative Group for International Agricultural Research (CGIAR) [44] [2] [88] [47] as well as studies conducted by Joseph Glauber and David Laborde;

(c) the studies in economy, mathematics, policy and law that are devoted specifically to the problem of the impact of the russian full-scale invasion of Ukraine on food security, such as the studies of Channing Arndt and Xinshen Diao [84], Xi-Yin Zhou and Gang Lu [53], Walter Leal Filho and Mariia Fedoruk [49] and others.

(d) other articles and reports of international organisations related to the world’s policy on food security, such as FAO [52] [83], WHO [1], World Bank Group [96], International Monetary Fund (IMF) [50], European Commission [104] and Council of Europe [48].

Methods. The methodological basis of this study consists of both general scientific and specific juridical methods, such as axiological, analysis and synthesis, comparative law and analogy methods, induction and deduction, formal legal and documentary analysis, historical-logical analysis, statistical analysis and comparison, generalization and systematization.

For the sake of clarity and completeness, the study contains three chapters:

- **Chapter 1**, “Explanation of the Concept of Food Security and the Place of WTO in its Ensurance”, is devoted to the general theoretical aspects of the studies of food security, its definition, the genesis of the concept of food security, and its comparable analysis with other related concepts. The first chapter is also devoted to the WTO mechanisms used in order to establish food security before the full-scale invasion of the russian military forces into Ukraine.

- **Chapter 2**, “Impact of the russian War Against Ukraine on Global Food Security”, is devoted to the state of global food security before the invasion, the contribution of Ukrainian agricultural exports to stabilising the world’s food security, the impact of the russian full-scale invasion on food security, its consequences, and assessments of its impact two years after the beginning of the invasion.

- **Chapter 3**, “Reforming the Role of WTO in Promoting Food Security During the Food Crisis Triggered by the Full-Scale Invasion of Ukraine”, is devoted to the reaction of the WTO to the challenges of food security caused by the russian military invasion of Ukraine, the place of the agricultural negotiations in reforming the WTO policy of food security and the current impossibility of reforming the WTO food security policy demonstrated in the last Ministerial Conference 13 held on February 2024 in Abu Dabi, UAE.

CHAPTER 1. EXPLANATION OF THE CONCEPT OF FOOD SECURITY AND THE PLACE OF WTO IN ITS ENSURANCE

God said, "See, I have given you every plant yielding seed that is upon the face of all the earth, and every tree with seed in its fruit; you shall have them for food.

The Bible, The Book of Genesis, 1:29

Human beings need food for an active and productive life. The need for food and the right to food is biologically determined and natural. Although food is common, crises and disasters may cause significant problems with the supply of food for people all around the world.

The people of Ukraine, the land of whose is often called the breadbasket of Europe, during the XX century faced three artificial famines called “holodomors” from 1929 to 1946 [71]. Thus, it is common that the problem of food security is acute for the Ukrainians and for each nation that has at least once faced the fear of malnutrition and famine.

Even now, in the digital and free trade XXI century, the problem of food security is far from being resolved, with millions of people who are food insecure [1]. In order to solve the problem of food security, it is mandatory to go deep into the definition and genesis of this concept, study the related concepts and define the role of trade and place of WTO in achieving food security.

1.1. Definition and genesis of the concept of food security

Although the right to food is natural and biologically determined, the studies in this field and global understanding of the need for global food security arose in the second half of the XX century as a response to increasing awareness of global hunger and food crises in the post-World War II world [21], [24].

After the long-term evolution, the modern concept of food security was founded on the definition contained in the Rome Declaration on World Food Security 1996 and the Plan of Action, which was applied as a result of the World Food Summit held in Rome in 1996 [81].

The proposed definition held that food security is the situation in which every person, at all times, has economic and physical access to safe and sufficient nutritious food to meet their daily dietary needs and food preferences for a healthy and active daily life [81].

Under the said definition, the members of the 1996 Food Security Summit underlined that in order to achieve food security for a person or community, the four components should be fulfilled and ensured simultaneously [21] [24].

The first component of food security is the **physical availability of food**. That means that the person should be able to receive a sufficient amount of nutrition of appropriate quality and variety supplied both by way of production within the domestic country and/or imported from abroad (including foreign food aid) [21] [97].

The second component of food security is **economic and physical access to food**. This component of food security may be achieved by the way direct access by each individual to sufficient and adequate resources that may acquire appropriate foods for a nutritious daily diet.

This component was separated from the first one in virtue of the consideration that often, an adequate supply of food at the national or international level is not enough as it does not in itself guarantee food security on the household level. Thus, access to food mostly depends on the legal, political, economic, social and religious processes within the community where the exact individual or household inhabits [24] [97].

For example, the traditional rights and privileges within the communities of traditional cultures may limit access to common resources such as food and water for specific individuals, threatening their access to food.

The third component of food security is **food utilisation**, which can be defined as a sufficient diet, clean drinking water, sanitation, and health care, which allows one to reach a state of nutritional well-being where all physiological needs of the person are met [24].

This highlights the importance of non-food inputs in food security. Utilisation's existence mostly depends on enough energy and nutrient intake, which can be achieved

by feeding practices, food preparation, the diversity of agricultural products, and food distribution within households [97].

The fourth component of food security is the **constant stability** of the other three previous components, despite any distortions to the agricultural market, such as wars, natural disasters, and crises [21].

The importance of this component is explained by the fact that food consumption by individuals is a constant and long-term need for humans. The people at threat should not risk losing access to food because of sudden food security shocks such as war, an economic and climatic crisis and cyclical events threatening food security [58].

The simultaneous existence of the four dimensions of food security mentioned above is a prerequisite for establishing food security in a specific country or society.

At the same time, the concept of food security had its genesis throughout the evolution of the food security policy proposed by international organisations and governments. Such developments were initiated by international organisations, such as the UN and FAO, and researchers on the topic.

Hence, at the first World Food Summit in 1975, the definition of food security was mostly focused on the volume and stability of food supplies [15]. Back then, food security was described as the constant **accessibility** of sufficient global stock of essential food items. The primary objective was to prevent food deficits during times of extensive crop failure, environmental changes, or any other unexpected situations. Furthermore, it aimed to maintain a consistent growth in food consumption rates in developing countries and to counteract the differences in prices and production [68].

Further, the collective understanding of what is meant by food security evolved and was first conceptualized as an issue of food **availability** for a human being [80].

In 1981, Amartya Sen, in an essay on famines, introduced, focused on, and prioritized the idea of food accessibility over its availability [73]. This component of access to food was incorporated by FAO in its updated definition of food security that year.

In 1983, the FAO expanded its scope to include the broader notion of food security, emphasizing the importance of individuals' access to food. This shift

highlighted the dynamics of both food demand and supply. Specifically, the FAO Council recognized that the overarching goal of global food security should be to guarantee that every individual consistently possesses both the physical ability to obtain and the economic means to access essential food items [99].

Moreover, three distinct objectives of food security were delineated: (1) ensuring the generation of sufficient food resources, (2) optimizing stability in the distribution of these resources, and (3) facilitating access to available provisions for those in need through trade mechanisms [15].

FAO emphasized in a report that food security can be achieved through specific actions in the complex areas of agricultural and rural development, food production, food reserves, the functioning of national and international food markets, the foreign exchange needs of importing countries, trade liberalization and export earnings, financial resources and technical assistance, the flow of food aid, and arrangements to meet emergency needs [99].

The next step in developing the definition of food security took place in 1986 with the influential “Poverty and Hunger” report of the World Bank. In this report, food security was also defined as access by all people at all times to enough food for an active, healthy life [64].

Besides, it was established in the report that food security consists of two essential elements: (1) the **availability** of food and (2) the **ability to acquire** it. Moreover, the World Bank paid attention to the opposite – the concept of food insecurity, which is defined as the lack of access to enough food [64].

The incorporation of the access dimension into the food security concept represented the key change in how food security was addressed to the international communities. Prior to this shift, the scholars were mostly focused on self-sufficiency in food production inside the countries, with the belief that if a country could produce enough food for its citizens, international food security would be achieved. Such an approach was heavily dependent on the expansion and development of agricultural sectors within countries, underlining a broader scope of efforts for economic development.

However, the introduction of the access dimension brought attention to the fact that food security is not solely about the **availability of food** at the national level, but also about the ability of individuals and households to **access the food** that is available. This realization acknowledged that even in countries where food production was sufficient, food insecurity could still be prevalent due to issues of distribution, poverty, and lack of access to food for certain populations.

This shift towards considering access led to a reevaluation of strategies to combat food insecurity. Rather than focusing exclusively on increasing agricultural production, the new approach emphasized reducing poverty as a direct way to improve access to food. This was based on the understanding that poverty is a key barrier to accessing food and that by improving the economic conditions of individuals and households, the countries can directly impact their ability to secure adequate food.

Furthermore, this change in focus also brought free trade into the spotlight as a mechanism for enhancing food security. The argument for free trade was based on the principle that it could lead to more efficient production systems globally, by allowing countries to specialize in the production of goods for which they have a comparative advantage. This, in turn, was expected to lead to faster agricultural development, as countries could focus on producing crops or goods that they are most efficient at producing, thereby improving overall productivity and, potentially, lowering food prices. This increased efficiency and specialization were also seen as pathways to improving livelihoods, not just through direct impacts on agriculture but also by fostering economic growth and development more broadly.

This paradigm shift towards focusing on access and poverty reduction while still recognizing the importance of agricultural development reflects a more nuanced understanding of the multifaceted nature of food security. It underscores the importance of not only producing enough food but ensuring that all individuals have the means to access it. This holistic approach has since influenced international policies and strategies for addressing food security, highlighting the complex interplay between agricultural development, trade policies, and poverty reduction efforts.

As our understanding of the causes of hunger evolved, so too did the concept of food security.

Additionally, the widely recognized and commonly embraced definition of food security, as articulated in the Rome Declaration on World Food Security 1996, was established. It stipulated that food security is achieved when every individual consistently possesses both the physical capacity and the economic means to obtain adequate, safe, and nourishing food, meeting their dietary requirements and preferences for a vibrant and healthy lifestyle [72].

In addition to availability and access, the definition was based on two other pillars: utility (including distribution within families, nutritional composition, access to clean water, cultural relevance and food safety) and stability (including the temporal aspect and vulnerability to price volatility) [80].

Any further definitions of food security were based on this definition with minor amendments. For example, in 2001, the FAO brought attention to the social aspect of food security in communities and defined it as the situation that exists when all people, at all times, have physical, social, and economic access to sufficient, safe, and nutritious food that meets their dietary needs and food preferences for an active and healthy life [27].

Since the beginning of the 21st century, the definition of food security has remained almost unchanged [56]. Although discussed, the new challenges of globalisation, the COVID-19 pandemic of 2020, and the Russian full-scale invasion of Ukraine and the other threats to global food security, were not reflected in its modern definition.

In this regard, we propose an updated definition of food security based on its multidimensionality and stability in times of war and food accessibility crises. Food security should be understood as the final result and constant status of UN Sustainable Goal 2, which is to end hunger for all, achieve food security and improved nutrition, and promote sustainable agriculture [39], [38].

The proposed version of the definition of food security covers the following issues that were not raised in the previous definitions.

Firstly, we propose to define food security not as a “situation” but as a “multidimensional concept.” Such wording allows us to directly indicate the concept’s nature and underline its ambiguity.

Secondly, we propose to name all four dimensions of food security described above, namely food availability, food accessibility, utilisation and stability. Such an approach allows us to simultaneously study the concept of food security in its four dimensions.

Thirdly, we underlined the importance of physical, social, and economic access to food in ensuring constant access to food by all individuals.

Fourthly and finally, considering the fragility of food security in times of wars, climate changes, and trade disruptions, we propose to add to the definition of food security the positive obligation of the international community to ensure food security and mention that food security shall be reached and maintained as the UN Sustainable Goal 2 of Zero Hunger.

Thus, food security is defined as a multidimensional concept, which encompasses the constant availability, accessibility, utilisation and stability of food for each and all individuals and communities, ensuring that they have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and cultural preferences, enabling them to lead active lives that should be ensured in the circumstances of the war, reached and maintained as the UN Sustainable Goal 2 of Zero Hunger.

1.2. Comparable analysis of food security with other related concepts

Although the term and concept of food security are widely used and commonly recognised, international organisations and researchers often use them along with other related concepts.

By conducting a detailed comparative analysis of these concepts, we can distinguish between them and gain a better understanding of food security, which is the focus of our research. This analysis involved identifying similarities and differences

among the following related concepts: (a) food security, (b) food safety, (c) food sovereignty, (d) food resilience, (e) food justice, and (f) food waste reduction.

(a) Food security and food safety

According to the definition presented by the WHO, food safety is the situation when the food is free from all hazards, both chronic and acute, that potentially may make food injurious to the health consumer [55].

The difference between the concepts of food security and food safety is that although both concepts focus on food as a main object of the specific policies, food security prescribes that food should be available and accessible for each individual at all times. In this respect, food safety underlines that the food must be not only accessible but also safe for consumption in a way that every person who consumes food will not harm themselves because of the inappropriate quality of the agricultural products [55].

(b) Food security and food sovereignty

The notion of food sovereignty was formally conceptualized and introduced to the global community through the Declaration of Nyéléni in 2007, held in Mali. As outlined in this declaration, food sovereignty centers on placing producers, distributors, and consumers of food at the core of food systems and policies, prioritizing their needs and rights over the interests of markets and corporations [19].

In a broader context, the supporters of food sovereignty underline that the key to addressing and ensuring food security is the formation of separate resilient food systems, which can satisfy consumers' needs without any additional imports outside of the defined sovereign food systems. Thus, their position is completely opposite to the free market approach.

The Declaration of Nyéléni in 2007 articulated the vision of food sovereignty advocates, who strive for a world where all individuals, nations, and states have the autonomy to shape their own food-producing systems and policies. This vision aims to ensure that everyone has access to high-quality, sufficient, affordable, nutritious, and culturally appropriate food. Moreover, it stands in opposition to imperialism, neoliberalism, neo-colonialism, and patriarchy, as well as any systems that deplete life,

resources, and ecosystems. The declaration identifies entities such as international financial institutions, the WTO, free trade agreements, transnational corporations, and governments that work against the interests of their people as adversaries to this vision [19].

The relationship between supporters of food security and supporters of food sovereignty is tough. The position of the last is brightly described in the report of the Alliance for Food Sovereignty in Africa [29].

They provide that there has been a misinterpretation of the concept of food security by international organisations, which has led to policies that prioritize yield and food delivery to consumers without taking into consideration the means of production and the producers themselves. This has resulted in the justification and promotion of agricultural industrialization, food aid, genetically modified seeds, monoculture crops for exports instead of diverse crops for local markets, and the liberalization of markets which has negatively impacted small producers who are unable to compete with subsidized imports [29].

Thus, the promoters of food sovereignty believe that the concept of food security was misused by international corporations with the purpose of enrichment, which led only to the increasing threat for the food importing countries, as the imports from abroad led to the intervention to the domestic food production sovereign systems.

(c) Food security and food resilience

The FAO describes food resilience as the enduring ability of a food system, including its various levels and units, to ensure the availability of adequate, suitable, and accessible food for everyone despite a range of potential and unpredictable challenges [69]. Food system resilience highly corresponds to the fourth component of food security, which is the stability of food availability, access, and utilisation.

The food resilience of the food systems is prescribed to endorse that the food supply chains will be stable, with the possibility that individuals within the food system will have access to nutritious food. The resilience of the food system depends on how the food system reacts to the challenges of the economic and climate crises as well as the threat of war and military invasions [89] [41].

(d) Food security and food justice

Food justice is defined as the state in which individuals and communities, regardless of their social, racial, and economic lines, have equitable access and participation in producing, selling, buying, and consuming fresh, nutritious food [95]. The movement for food justice aimed to ensure that healthy food is accessible to all individuals, regardless of their background, income, or location. This initiative encompasses all aspects of food, including its cultivation, distribution, sale, and education on healthy eating habits. Additionally, it advocates for the rights of workers, farmers, and landowners involved in the food industry [94].

The difference between the supporters of the concept of food security and those who promote food justice is the way how to achieve the aim of accessible food for every individual in all parts of the world. While reformist food security supporters seek to address malnutrition risks through strategies such as ramping up industrial food production, expanding GMOs, advocating for liberalized markets, and relying on internationally sourced food aid, the stance of progressive food justice promoters centers on the fundamental right to food. Their approach emphasizes the implementation of robust safety nets, the promotion of sustainably produced food from local sources, and the advancement of agroecologically based agricultural development [45].

At the same time, the concept of food justice is conservative but not as radical as the concept of food sovereignty, which completely denies the free market approach in the sphere of agriculture and endorses the human right to food sovereignty, focuses on the locally sourced, sustainably produced, culturally appropriate production of food democratically controlled by the way of UN/FAO negotiations [45].

(e) Food security and food waste reduction

Food waste is defined as the reduction in the quantity or quality of food due to the actions and decisions of retailers, food service providers, and food consumers. Tackling food waste is vital for improving the sustainability of food systems, bringing economic, social, and environmental advantages [77].

In the situation when food is deliberately wasted, the resources invested, such as money, energy, land, water, labour, and time, are lost. This not only squanders kilocalories and micronutrients that fail to reach consumers but also has broader implications.

The relations between food security and food waste reduction are direct. The ongoing global economy model allows the inhabitants of developed countries to waste food while millions of people in other parts of the world are food insecure. Although food waste reduction alone does not solve the problem of global food insecurity, wasted resources may be redirected to the threatened food-insecure people.

Thus, the concept of food security is commonly used and researched along with related concepts such as food safety, food sovereignty, food resilience, food justice, and food waste reduction. The complex comparable analysis of these concepts allows us to broadly define and understand the scope of food security which is in the focus of this study. Consequently, the following conclusions are made.

Having overlooked and considered all the related concepts food security was chosen as a primary object for the study. The reason for such focus is that food security is the most fundamental concept promoting food accessibility. Only after the person or community is food secure and has constant access to food do further issues, such as food safety, food sovereignty and food waste reduction, arise. At the same time, the ways of achieving food security may differ from the perspectives of different countries and international organisations. Thus, aiming at achieving food security, some conservative organisations propose to follow the alternative concepts of food security, named food sovereignty and food justice. Consequently, the issue of food security is fundamental for each and every person around the globe. The right to food is natural and biologically determined and, as such, should be ensured with the goal of each person to have constant access to food for their dietary needs.

1.3. The role of trade and WTO in achieving food security

The WTO is one of the international organisations that has declared its direct contribution to the achievement of global food security by establishing international

trade rules and resolving the trade disputes that arose out of the WTO agreements [8]. The contribution of the WTO to enhancing food security is made through international trade, free market policies and WTO-established rules under the WTO Agreements.

However, it was not always like that. At the time of the conclusion of the WTO Agreement on Agriculture in 1994, the problem of international food security was considered just as a non-trade concern [63]. Although time has passed and the WTO's approach has changed, the said position is still reflected in the preamble to the Agreement on Agriculture [3].

At the same time, the WTO constantly informs that it is actively involved in the achievement of food security through the facilitation of the trade and establishment of trade rules in all four dimensions of the food security described above, namely in (a) availability of food, (b) its accessibility, (c) utilization of food and (d) its stability [80].

The WTO's position is that WTO rules contribute to trade, which in turn contributes to global food security [76].

According to the WTO, trade facilitates **food availability** by ensuring the improved allocation of food resources and making food production more effective and efficient. Therefore, because of trade, global food production increases, reducing food unavailability for food-insecure people. Because of the international trade and free-market system, agricultural products are produced in the regions with the most suitable conditions for production in the most efficient and sustainable fashion [105].

Besides, food availability in regions with food deficits may be improved through strong and resilient trade connections with food-sufficient areas.

The input of trade to **food accessibility** is explained by the bilateral benefits for both food producers and consumers. WTO's position is that trade not only enhances the revenue streams of food manufacturers and traders but also facilitates the availability of food at more economical prices for consumers, thereby improving economic accessibility to nutritional resources for people with the threat of food insecurity [105]. In this regard, we note that the problem of food security is deeply connected to the problem of global poverty.

Trade also improves the **utility of food** in the food-importing regions, contributing to the diversification of the available food sources and, by expanding consumer options, delivering more nutritious meals to people at lower prices [105].

Finally, trade contributes to the **stability of the food supply** by acting as a balancing mechanism during supply shocks, particularly in the context of increasing extreme weather events, wars, and the breach of supply chains.

Consequently, contemporary food security policy emphasizes the liberalization of agricultural trade. Within this approach, advancements in modern seed technologies, productive inputs, and genetic engineering aim to usher in a second Green Revolution. This strategy anticipates that heightened yields, enhanced nutrition, and more efficient resource utilization will occur concurrently. Both trade liberalization and the Green Revolution operate on a shared principle: bolstering food availability through productivity enhancements, coupled with robust growth rates, to ensure sustained food security in the years ahead [80].

Thus, we can conclude that the trade indeed facilitates and contributes to the described dimensions of food security. However, the role of the WTO in this respect is more direct, involving the facilitation of trade in the first place and further improvement of the state of international food security. Consequently, the role of the WTO in enhancing food security can be outlined as follows [105].

Firstly, WTO trade rules and principles, such as most-favoured-nation treatment and national treatment [90], guarantee that food is produced as efficiently and abundantly as possible and can move as freely as possible from food surplus to food deficit regions, preventing hunger in the vulnerable least-developed countries, which are dependent on the imports of the basic foods.

Secondly, the WTO Agreements, such as the Agreement on Agriculture [3], Agreements on TBT [4] and SPS measures [5], were established in order to limit the distortions in the global agricultural markets and to make sure that unnecessary barriers for trade are not imposed. Such an affords of the WTO ensures that the food security of one Member State should not come at the expense of that of another Member State.

These agreements and possible amendments thereto are in detail analysed in the third chapter of this study.

The WTO's endeavors, notably encapsulated in the Agreement on Agriculture, were geared towards achieving target 2b of Sustainable Development Goal 2, which aims for zero hunger [38]. This target seeks to mitigate trade restrictions and distortions within global agricultural markets, including the simultaneous elimination of all forms of agricultural export subsidies and export measures with similar impacts. This verbiage of target 2b is consistently reiterated in the preamble of the Agreement on Agriculture. At the same time, the question of subsidies in developing countries and export restrictions in developed ones during crises becomes a stone of premonition for future negotiations on food security.

For example, soon after the beginning of the Russian full-scale invasion, a list of countries, in virtue of the food deficit and high prices of agriculture, introduced export prohibitions making the situation even more threatening for the least-developed countries making the situation for bad to worse [30], [26]. Eventually, these restrictions were relieved by the countries but still constituted a massive threat at the beginning of the full-scale invasion.

As of now, the issue of export restrictions remains a matter of future negotiations between the Member States on the common policies [11]. Besides, it is worth noting that in June 2022, at the 12th Ministerial Conference in Geneva, the Ministerial Decision on WFP, food purchases exemption from export prohibitions or restrictions was adopted for the purpose of humanitarian for the least developed countries [13].

Another challenge the WTO faces in the matter of agriculture is the subsidies and public stockholding given to farmers by the governments, especially in countries such as India [12] [74]. Despite being encouraging for the local farmers and ensuring the food sovereignty of the countries, such subsidies can not be considered appropriate according to the WTO law and, in particular, to the Agreement on Agriculture, as such that leads to distortions in international trade.

Most countries adopted various policies to support their domestic agricultural sectors, using different strategies based on their unique circumstances. While

developed countries often employed border measures to raise domestic prices and used export subsidies when supply exceeded demand, developing countries typically implemented policies that reduced consumer prices, along with subsidies for agricultural inputs [76].

At the same time, in 2015, the WTO took another step to ensure food security by adopting the Decision at the Nairobi Ministerial Conference to eliminate the use of agricultural export subsidies and establish disciplines on other export support measures with potentially equivalent effects [23]. However, as can be seen from the perspective of 2024, the said decision remained the declaration only.

WTO repeatedly emphasised that its goal of eliminating agricultural export subsidies is also covered by target 2b of Sustainable Development Goal 2 of zero hunger [38] [39].

Fourthly, the WTO paid attention to food manufacturers, traders, and consumers to the topic of export measures, such as export restrictions and prohibitions. It is a cornerstone topic for importing countries that need assurance that they will have secure and stable access to food supplies. These countries are therefore seeking to have enhanced transparency and discipline on measures restricting exports.

While trade plays a crucial role in advancing food security, it is not a standalone solution. Instead, trade serves as a tool, an indispensable component within a holistic policy framework essential for achieving food security. Complementary policies, such as those addressing irrigation, nutrition, access to fertilizers and credit, as well as broader strategies encompassing sound macroeconomic and development policies, are equally pivotal in this endeavor [46].

At the same time, given the rising threat of food insecurity, a number of experts, scholars, and Member States concluded that the WTO rules are not enhancing food security in the manner as it could be ensured.

It is unfortunate to note that world hunger, which had been on a steady decline for over a decade, is now on the rise. Recent estimates suggest that about 10% of the world's population, equivalent to roughly 735 million people, continues to suffer from

hunger [66]. In 2022, 2.4 billion people faced severe food insecurity, an alarming 394 million people more than in 2019 [39].

The international trading system's ability to deal with issues of food security is questionable. The GATT was established over 75 years ago, and the provisions of the WTO Agreement on Agriculture were agreed on almost 30 years ago. Both of these agreements fail to recognize the importance of food security and the right to food as a human right [16].

Open trade and interconnectedness are crucial to address the issue of food security. The underlying economic principle under this fact is that those who have a surplus of food will share or trade with those countries, communities and individuals who require it. However, the reality is much more complicated.

Despite the inevitable reliance on international trade as the key to addressing international food security, countries may impose protectionist measures to restrict food exports. Notably, even the slightest indication of supply chain disruption or tightening food markets can lead to export prohibitions, export duties, or other types of restrictions to ensure domestic food availability. This is due to the fear that dependence on international trade poses a risk and that nations must be self-reliant and cautious against the uncertainties of exporting countries [16].

The conditions of the international markets in the sphere of agriculture differ from country to country, and farmers' ability to produce in the face of various shocks is mostly dissimilar. To solve the ongoing problems of international food insecurity and discuss the issues of subsidies, trade restrictions, blockades, public stockholding measures and climate change, the agricultural negotiations were established [8].

Concerns regarding food security have been a long-standing issue for both developing and developed countries. Such concerns have been a central theme in numerous negotiations within the WTO. Now, the problem of food security is the key element in the ongoing agricultural negotiations [85]. Thus, we consider it essential to analyse the course and role of the agricultural negotiations at the WTO, which aim to enhance global food security.

Under GATT rules pertaining to agriculture, the agreement encompassed a provision that explicitly acknowledged nations' authority to enact measures aimed at safeguarding their populations against food shortages. GATT Article XI, typically barring quantitative restrictions, contains an exception allowing for “export prohibitions or restrictions temporarily applied to prevent or alleviate critical shortages of foodstuffs or other products essential to the exporting contracting party” [78].

The GATT's limited influence on agricultural trade led to the persistence of trade-distorting policies in agriculture globally. The absence of robust regulations on agriculture within the GATT framework posed significant challenges to the international trade system. GATT members recognized that the existing framework inadequately addressed agricultural trade issues. Agriculture became a focal point of numerous trade disputes, exacerbated by heightened subsidies from developed nations. Such subsidies had detrimental effects on agricultural exporters in developing countries, which found it difficult to compete with heavily subsidized products [76].

During the **Uruguay Round negotiations**, member countries leveraged food security to justify their trade barriers and domestic support for agriculture. Developed countries argued that these measures bolstered their economies by enhancing agricultural output. Nonetheless, these justifications did not hold much sway. Developing countries presented more compelling arguments due to their greater vulnerability to food insecurity. The discourse on food security has evolved over years of negotiation, influenced by changing economic conditions [74].

The final agreement reached at the conclusion of the Uruguay Round negotiations, which established the WTO, included the Agreement on Agriculture. This agreement initiated the process of liberalizing trade in agriculture and aimed to address food security concerns. The Agreement on Agriculture is based on three pillars: market access, domestic support, and export subsidies, through which greater liberalization is pursued. The differential treatment provided to developing countries, and to LDCs in particular, is present in each of these aspects of the agreement [93].

With respect to market access, the Agreement on Agriculture establishes a system where import barriers, such as quantitative import restrictions, are converted to tariffs (known as "tariffication") and then reduced [76].

With respect to domestic support, the Agreement on Agriculture distinguishes between programs that directly relate to production and those that do not, permitting the latter and limiting the former. Members agreed to reduce domestic support policies that directly affect production and trade, known as "amber box" measures. Programs with little or no impact on trade, known as "green box" programs, are not limited under the Agreement on Agriculture. Similarly, "blue box" programs, which are programs that would be considered as "amber box" but have conditions to reduce distortion and limit production, are not limited [76].

With respect to export subsidies, the Agreement on Agriculture capped existing programs and committed Members to reducing the amount spent on and the products covered by such programs [76].

By 2000, developing countries had become increasingly aware of the biases in WTO rules that favoured developed nations, particularly in allowing them to offer subsidies that distort trade. This led to efforts to negotiate more equitable rules.

The **Doha Round**, which commenced in 2001, held significant promise for developing countries, encompassing a wide array of issues ranging from agriculture to market access for various products. Agriculture was integrated into the comprehensive framework known as the Doha Development Agenda (DDA), which addressed negotiations across multiple sectors, prioritizing the "needs and interests" of developing countries. Central to these discussions was the aim of mitigating the adverse effects of agricultural support from certain developed nations on farmers in poorer regions of the developing world. The objective was to reduce such support while ensuring equitable treatment to rectify imbalances [76].

During these talks, there were proposals for a "food security box" to provide additional protection for specific crops. However, the round concluded without success in 2008 due to disagreements among Member States. The subsequent global food crisis worsened the situation, marked by escalating food prices and volatility. In response,

countries imposed restrictions and diverted grains for biofuel production, further unsettling prices. This crisis eroded developing countries' confidence in global food price stability, prompting measures to safeguard domestic markets and food security.

The crisis exacerbated extreme hunger, pushing an additional 75 million people into dire conditions. Consequently, negotiations shifted focus from policies affecting supply and demand dynamics to those directly impacting global prices. In later Ministerial Conferences, efforts to narrow down negotiation topics for consensus faced continuous setbacks due to food security disagreements [74].

The **Bali Conference** avoided a deadlock through a “peace clause” regarding public stockholding for food security, providing temporary relief despite uncertainties about its implementation. Developed nations were particularly keen on the Trade Facilitation Agreement to ease trade barriers, but countries like India prioritized food security, linking it to the agreement's implementation [57].

The peace clause's terms were eventually clarified in 2014 and reaffirmed in **Nairobi**, but a permanent solution remains elusive, as seen in the 12th Ministerial Conference held in Geneva in 2022 and the 13th Ministerial Conference held in Abu Dhabi and as will be explained in the third chapter of this study.

Recently the role of the WTO and trade in enhancing global food security was analysed by the USA in their communication of 27 March 2023 [22], which summarised the role of WTO and trade within in contribution to the global food security.

In particular, it was underlined that, **firstly**, trade improves the movement of food, making it more affordable and available, especially for developing countries, reducing the risk of food scarcity in domestic markets and mitigating food price volatility in both domestic and global markets [22].

Secondly, trade was considered the driver of innovations in the production and distribution of food. To feed the global population sustainably, farmers had to adopt novel technologies and inventive methods to surmount production challenges. Work facilitated by the WTO could bolster food security by promoting science-based regulatory frameworks and open markets. This stimulated investment in innovative

solutions, hasten the uptake of emerging technologies and methods, and eased the exchange of goods produced through new techniques [22].

Thirdly, access to global markets positively impacted vulnerable groups, especially those who depend on agricultural production for their livelihoods, such as in least-developed and net food-importing developing countries. To ensure that these groups benefit from global trade, it is necessary to provide them with the necessary infrastructure and access to new innovations. Such an approach supports the core function of WTO agreements, which is facilitating global trade, and contributing to reducing poverty and enhancing food security in an inclusive manner [22].

Thus, the WTO plays a crucial role in enhancing food security by facilitating international trade, establishing trade rules, and limiting distortions in global agricultural markets. The WTO's efforts are aimed at ensuring the availability, accessibility, utilization, and stability of food, contributing to the reduction of food insecurity around the world. While there are still challenges of agricultural market distortions to be addressed, the WTO's commitment to achieving Sustainable Development Goal 2 of zero hunger is a positive step towards a more food-secure future. The rounds of negotiations show that permanent solutions are findable; however, they require a mutual understanding of the food security problems and permanent solutions through multilateral agricultural negotiations. The reform of the WTO trade rules in the sphere of agriculture is urgent and most probably should be resolved through consideration of the issues of limitation of the trade distortions and regulation of the usage of public stockholding, export prohibitions and subsidies.

CONCLUSIONS TO CHAPTER 1

In conclusion, food security is crucial to ensuring that people have access to safe and sufficient nutritious food to meet their dietary needs and food preferences for a healthy and active daily life. The definition of food security has evolved over time and is now based on four components: physical availability, economic and physical access, food utilization, and stability.

The definition of food security has evolved with scientific analysis by international organizations and researchers contributing to the developments in the matter. Overall, ensuring food security is crucial for promoting healthy and active daily life for all individuals and communities.

Although a number of definitions of food security were produced by international organisations and scholars, in this chapter we present our proposition of the definition of food security as a multidimensional concept, which encompasses the constant availability, accessibility, utilisation and stability of food for each and all individuals and communities, ensuring that they have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and cultural preferences, enabling them to lead active lives that should be ensured in the circumstances of the war, reached and maintained as the UN Sustainable Goal 2 of Zero Hunger.

Further, we conducted a comparable analysis of the concept of food security with other related concepts of food safety, food sovereignty, food resilience, food justice, and food waste reduction, concluding that food security is the most fundamental concept of the analysed ones. Therefore, this study is focused on the issue of food security in virtue of the Russian full-scale invasion of Ukraine.

Consequently, we brought to the conclusion that the WTO plays a significant role in ensuring food security by implementing policies that promote free and fair trade and by addressing trade-related issues that affect food security. The agricultural negotiations within the WTO aimed at the liberalisation of trade, limitation of trade distortions and finding a permanent solution for food security policy through agricultural negotiations.

Despite the efforts of the WTO, the challenge of food security persists, remaining unresolved. The history of agricultural negotiations underscores that while food security stands as the ultimate objective of the WTO, there exist divergent perspectives among developing and developed Member States regarding issues such as public stockholding, export prohibitions, and subsidies. These pivotal matters in WTO agricultural negotiations directly influence international food security and trade

dynamics. While they may initially bolster food security and food sovereignty within individual countries, they can ultimately engender trade distortions that adversely affect food security, particularly for nations reliant on food imports.

CHAPTER 2. IMPACT OF THE RUSSIAN WAR AGAINST UKRAINE ON GLOBAL FOOD SECURITY

The ongoing russian full-scale military invasion of Ukraine has continued for two and a half years already. Since 24 February 2022, the entire international community has faced threats to global food security, which was caused by the occupation of a significant part of agricultural land in Ukraine and damages to the civil agricultural infrastructure [25]. At the same time, the Ukrainian farmers faced the impossibility of exporting agriculture to the global markets by virtue of the blockade of the Ukrainian deep seaports. The russian war in Ukraine was a crime against global food security, critical for the most vulnerable countries and societies.

As a result, the shortage of Ukrainian agriculture in international markets and rising demand caused skyrocketing prices and increased threats to global food security [50].

In this chapter, we will focus on (1) the state of global food security before the full-scale invasion; (2) the role of Ukraine in contributing to global food availability; (3) the consequences of the full-scale invasion on food security in the first year of the war; (4) further consequences of full-scale invasion that arose on the second year of the war.

2.1. State of global food security before the full-scale invasion

Even before the russian full-scale invasion of 2022, the global food security framework was already on unsteady ground. The fragility of this essential system was not a sudden development; rather, it had been brewing for years, influenced by a variety of complex and interconnected factors that challenged the resilience and stability of global food supply chains [34].

The onset of the COVID-19 pandemic brought unprecedented disruptions, with nations grappling to stem the spread of the virus through trade measures and lockdowns, inadvertently straining food supplies. The aftermath of the pandemic was especially severe, leaving a trail of economic downturns and elevated poverty rates that

the world was still struggling to overcome as the Russian full-scale invasion of Ukraine began to unfold.

The historical context is crucial to understanding the precarious nature of food security before 2022 [36].

Tracing back to the crisis of 2007-2008, characterized by a “perfect storm” of surging food prices, the global community witnessed similar patterns that should have served as cautionary tales. Contributing factors included skyrocketing oil prices, increased demand for biofuels, high transportation costs, speculative financial activities, and inadequate grain reserves. Although these crises receded, they forewarned of the system’s inherent vulnerabilities [36].

As we approached 2022, signs of strain re-emerged. Costs associated with food, fertilizers, fuel, and shipping were on an upward trajectory. The FAO cereal price index revealed that by 2021, prices had matched the peaks of 2008, only to surge post-invasion.

Three factors in 2022 exacerbated the situation. Firstly, the global economy had not fully recuperated from the pandemic’s blow, with an additional 97 million people estimated to have fallen into poverty, according to the World Bank [36]. Secondly, the urban poor had borne the brunt of the pandemic’s economic effects, unlike the more resilient rural agricultural sectors. Thirdly, the developing world, still nursing the wounds from pandemic-induced fiscal protection measures, now faces amplified debt burdens, putting them in a precarious position to handle the looming crisis.

Africa emerged as one of the most susceptible regions. With North Africa relying heavily on Ukrainian wheat imports, the stakes were alarmingly high. Sub-Saharan Africa, though primarily rural, saw its growing urban poor grappling with the ripple effects of dependency on imported grains [9].

Agricultural sectors across many African regions struggled with access to fertilizers, and the high costs threatened to erode farmer profits and disincentivize production, potentially negating the poverty-reduction effects of higher food prices. Conflict and climate change intensified the vulnerabilities, with countries like Yemen, Northern Ethiopia, and Madagascar facing acute crises.

In light of Ukraine's significant share in global grain exports, the invasion represented a formidable supply shock to the global food system.

To mitigate the worst of this crisis, immediate and long-term actions were imperative. Increasing food supply, avoiding export restrictions and enhancing fuel supplies to reduce associated costs are urgent steps. Furthermore, it is essential to bolster social protection for the vulnerable populations hit hardest by the pandemic and now by food inflation. This calls for concerted efforts by governments, international institutions, and the private sector to offer comprehensive aid and, critically, for the international community to provide support.

In conclusion, the state of global food security prior to the full-scale invasion in 2022 was a system fraught with challenges, strained by past crises, and hobbled by recent global events. The invasion's impact on the already weakened food system was not just an isolated event but a continuation of vulnerabilities that had been manifesting for years. As we contend with the present, it is imperative to draw lessons from the past to build a more resilient global food system for the future.

2.2. Ukraine's contribution to food security before the full-scale invasion

Ukraine has always been one of the major players in the global agricultural markets, exporting grain, feed, and oil cultures. Since gaining its independence in 1991 and up until 2022, the role of Ukrainian exports gradually and surely increased [4].

Prior to the cataclysmic events of the full-scale invasion by Russia in 2022, Ukraine had been one of the cornerstones of global food security, the breadbasket of Europe, rising as a powerhouse in the agricultural domain post-independence. The story of Ukraine's ascent in the global food market is one of resilience, innovation, and an enduring commitment to growth despite historical and systemic hurdles.

In the wake of gaining independence in 1991, Ukraine embarked on a journey that would see its exports, notably grain, feed, and oil cultures, surge with unwavering momentum. This crescendo of trade placed Ukraine firmly on the global map, aligning it with the world's largest exporters of essential commodities.

The statistics from the 2019-2021 period underscore Ukraine's instrumental role: a combined market share of 34% for wheat, 26% for barley, 17% for maize, and a commanding 75% for sunflower oil, reflecting the critical importance of Ukrainian contribution to global calories [4].

The full-scale war has jolted this dynamic, causing a dramatic plummet in Ukraine's export capacities and unsettling the fragile equilibrium of international food trade.

Understanding Ukraine's significance requires a retrospective glimpse. Gradual but pivotal changes in land ownership laws, most notably Ukraine's major land reform in 2002 and the lifting of the moratorium on land sales transactions in 2021 laid the groundwork for a renaissance in agricultural productivity.

The dawn of the 21st century witnessed the resurgence of Ukrainian agriculture. As property rights solidified and economic recovery took hold, a surge in investment flowed into the sector. Between 2002 and 2021, wheat and maize yields climbed steadily. However, this growth was not without its challenges. Variability in production and yields lagging behind EU levels pointed to lingering issues with credit access, regulatory uncertainties, and underutilization of modern farming inputs [4].

Ukraine's rebound in production was mirrored by a dramatic rise in grain exports, significantly outpacing the global average. Over the last decade, Ukrainian wheat exports soared by 11.3% annually, with maize exports growing by 6.5% per year. The beneficiaries of Ukraine's agricultural bounty were as diverse as they were numerous, ranging from neighbours in North Africa and Western Asia to distant markets in Southeast Asia and Sub-Saharan Africa.

The global reliance on Ukrainian grains deepened through these years. Countries like Egypt saw their dependence on Ukrainian wheat swell from 50% in 2013 to over 76% in 2021 [4].

The dependency on Ukrainian agriculture was not just a matter of volume but also of quality and preference. For instance, the European Union, with a discerning demand for non-GMO maize, turned increasingly towards Ukraine, sourcing over 55% of its imports from the country. This shift highlights not only Ukraine's agricultural

prowess but also its ability to meet specific market demands, thereby reinforcing its stature in international trade.

The burgeoning agricultural exports from Ukraine transformed the Black Sea region into a critical nexus for global food security. This transformation was not merely about quantities; it was symbolic of a strategic shift in global agricultural dynamics, where new breadbaskets were challenging the traditional centres of grain production. As a result, Ukraine's fertile and bountiful fields became synonymous with food stability for millions beyond its borders.

The shockwaves of the full-scale invasion by Russia have been profound, with Ukraine's once-thriving ports shuttered, cutting off a lifeline for many importing nations. This disruption sent ripples across the globe, as countries like Egypt and Bangladesh scrambled to identify alternative suppliers amid soaring costs and dwindling supplies. It underscored not only the interconnectedness of our global food systems but also the fragility and vulnerability of relying on geopolitically sensitive regions for essential commodities.

Prior to the full-scale invasion, Ukraine was more than a participant in global food security; it was a central pillar upholding the intricate architecture of the world's food supply. The nation's journey from a net grain importer to a leading exporter is a testament to its resilience and strategic development, which has been, and will continue to be, a vital part of the global food security narrative.

The reverberations of the war have been far-reaching, but they have also illuminated the urgent need for diversified sources of production and a robust, resilient global supply chain that can withstand geopolitical shocks. As the international community grapples with the aftermath of the invasion, Ukraine's role in global food security will remain a critical point of discussion and action in our collective pursuit of a hunger-free world.

Thus, the contribution of Ukraine as the major grain exporter to global food security was huge. The combination of the number of production facilities and quality of Ukrainian agriculture, as well as the strategic location at the Black Sea, allowed Ukraine to significantly add to the food availability in the international food supply,

contributing to food security worldwide. Considering this fact, the further full-scale invasion of Russian forces in Ukraine, in fact, cut off one of the biggest producers of grain and oils out of the international supply chain, shortening the supply of agriculture. Such shortage of supply, as well as the pessimistic opinions of the food exporters and importers causing the significant increase in food demand, led to the skyrocketing of the prices for agriculture and constituted a massive threat to global food security.

2.3. Threatening consequences to food security in the first year of the Russian invasion of Ukraine

The Russian full-scale invasion of Ukraine is a crime of the Russian Federation against the most fundamental values and principles of international public order. The invasion was a shock for the international community and led, in particular, to the food crisis all around the globe. The threat to international food security was major by virtue of the role of Ukrainian exports of agriculture in the global supply chains.

Ukraine has historically been integral to the global food system, particularly in the production and export of wheat, barley, maize, and sunflower oil. The war has led to direct interruptions in production and trade, occupation of the agricultural land, mining of the land, the killing of the farmers, destruction of the grain terminals and storage facilities, cutting off the possibility of agricultural exports by the sea, thefts of the agriculture in the occupied territories and massive damage to the production and exports capacities, which caused the massive threat to the world's cereals and vegetable oils markets. As IFPRI notes, the war has not only impeded the physical flows of these commodities but also instigated a sharp increase in prices [75].

The invasion has directly interrupted the production and export of these critical commodities. Military operations have not only raised the risk of immediate supply shortages but also posed a threat to the forthcoming planting and harvesting seasons, potentially damaging infrastructure critical for storage and transport. The subsequent supply chain disruptions are likely to increase food price volatility and have long-term implications on food security [1].

Food inflation, intensified by the invasion, poses substantial risks for food insecurity and malnutrition, particularly for the poor in low- and middle-income countries. Researchers note that food inflation is associated with greater risks of child wasting and stunting, emphasizing the need for urgent policy interventions [34].

The price increases have a profound impact on nutrition. Food inflation is correlated with greater risks of child wasting and stunting, particularly among populations that are already vulnerable due to poverty, war, or poor governance. The repercussions extend beyond immediate nutritional deficits, potentially impeding long-term growth and development in young children.

The implications of the crisis extend well beyond its immediate impacts. The war has underscored the vulnerability of global food systems to geopolitical disruptions. As such, IFPRI suggests that there is an urgent need to diversify food markets and build resilience to protect against future crises, in particular amending the existing trade rules introduced by the WTO. This could involve improving the efficiency of fertilizer use, strengthening global trade rules to prevent export restrictions, and enhancing the resilience of food systems to reduce dependency on a few key exporters [30].

The invasion's consequences are multifaceted, affecting not just food availability but also the socio-economic well-being of nations. Net food-importing countries, particularly in the Middle East and North Africa region, are highly vulnerable due to their reliance on imports from Ukraine, which was stable and predictable before the invasion [49]. Policy responses thus far have focused on avoiding export bans, diverting biofuels to the food supply, and providing social safety nets.

Tragically, this crisis underscores the need to diversify global food sources to build resilience against future shocks. Reducing the dependency on a few major producers and fostering a multi-tiered approach to food security – from local to global levels – is crucial. This will involve a concerted effort in policy development, trade regulation, in particular amending the WTO trade rules, and investment in agricultural innovation.

It is worth noting that after the start of the Black Sea Grain Initiative and the first grain and oils exports from Ukraine, the predictions of the global community became more optimistic or at least less pessimistic than at the beginning of the invasion.

The role of the Black Sea ports for Ukraine and for the smoothing of the grain exports is crucial. The fact is that the volume of producing of agricultural products by the Ukrainian agricultural companies is indeed significant. However, after agriculture is produced, it is vital to find a way to deliver these goods to the international markets. Due to the geographical location of Ukraine, the most affordable way to deliver the products abroad is by sea. Ukraine, before the invasion, conducted their exports both via the Black Sea and Azov Sea deep water seaports.

The blockage of the Ukrainian deep seaports of Pivdennyi, Odesa, Chornomorsk, Mykolaiv and Olvia was critical for international food security. Most of Ukraine's agricultural commodities exports were conducted through these seaports, as water transport is the most affordable option. The blockage of the seaports, along with the occupation of thousands of hectares of agricultural land, made it impossible for the crops to be delivered to international markets. Possibly, transforming Ukraine to a landlocked country was one of the primary goals of the Russian invasion to Ukraine.

The situation was partially solved with the Black Sea Grain Initiative and the grain corridor coordinated by the UN. However, even in that situation, Russia took all possible actions to use agriculture and threats to global food security as the instrument of a full-scale invasion, delaying the inspections of the vessels and eventually terminating the Black Sea Grain Initiative in July 2023.

Considering that exports by sea were not possible due to Russia's military activities in the Black Sea, Ukrainian exporters intensified their exports via land—by trucks and railway – using the “lines of solidarity” introduced by the European Union.

However, the fact is that the western border of Ukraine became a “bottleneck” for Ukrainian agriculture exports, as the major production facilities were located in the southern and central parts of Ukraine, and the transportation and exporting system did not allow the exports of agriculture to be comparable to the pre-invasion level.

Unfortunately, the possibility of exports was also affected because of the farmer's protests in EU countries neighbouring Ukraine: Poland, Hungary, Slovakia, and Romania. Because of the farmers' protests, the export and transit of agriculture from Ukraine were, in fact, impossible, which also threatened the food supply to the countries that depended on the imports of agriculture from Ukraine.

Considering the above facts, the following conclusions are made. First, the role of Ukraine as a major exporter of agricultural goods in contributing to global food security was crucial. Secondly, the unlawful and unprovoked military invasion of the Russian forces into Ukraine led to the temporal impossibility of Ukrainian exports through the sea, and the exports by the western Ukrainian border were complicated because of the protests of farmers in the neighbouring countries.

Despite this, Ukrainian producers of agriculture demonstrated phenomenal fortitude and found ways to export agriculture and still contribute to global food availability and food security.

2.4. The consequences for food security two years after the invasion

On 24 February 2024, the two years since the beginning of the full-scale invasion passed. It is noticeable that these two years passed with a different passion than was expected by the food security analytics before and soon after the invasion.

Food prices, after skyrocketing in 2022, now keep decreasing as if the problem with global food security is solved. Unfortunately, this is not the case. Two years after Russia's full-scale invasion of Ukraine, the war continues to significantly hinder Ukraine's agriculture – a major global agricultural exporter, thereby impacting worldwide food security.

Despite this, global commodity markets have adapted, partly due to increased exports from other countries, which mitigated the initial shock. Prices of commodities like wheat, corn, and soybeans initially surged post-invasion but have since decreased to below pre-war levels, although they are still higher than pre-COVID levels [32].

The war has directly damaged agricultural production in Ukraine, particularly in the eastern regions occupied by Russia, such as Donetsk, Luhansk, Kherson, and

Zaporizhzhia. These areas, which represented a significant portion of Ukraine's agricultural output, have seen extensive disruptions due to active combat, land mines, unexploded ordnance, and chemical pollutants, leading to widespread abandonment of agricultural lands.

Moreover, there is an existing problem of the further export of agriculture originating from the temporarily occupied territories. As a significant part of the agricultural land and the goods cropped, it should be banned for further exports to the international markets as such that were gained as a result of the unlawful occupation of the Ukrainian territories. In this regard, possible amendments to the existing WTO trade rules of TBT and SPS may be proposed in order to prohibit market access to agriculture originating from the occupied territories of Ukraine that were captured as a result of the unlawful occupation of Ukrainian territories. The trade of agriculture originating from temporarily occupied territories encourages, stimulates and funds the Russian invasion of Ukraine, which is the root of the problem of food insecurity nowadays.

The mechanisms of tracing the goods originating from the occupied territories should be developed in order to ensure, that the agriculture gained through theft, murder and terrorism should not benefit and encourage the thefts, killers and terrorists who are the Russian Federation in its nature as prominently described by their unlawful actions of the military aggression to the sovereign territories of Ukraine.

As reported by the U.S. Department of Agriculture, these regions accounted for substantial percentages of Ukraine's production of wheat, barley, rapeseed, soybeans, and sunflower seeds between 2016 and 2020. Furthermore, NASA Harvest estimates that the abandoned cropland in Ukraine due to the war amounted to about 7.5% of the nation's total in 2023 [25].

The war has also indirectly affected agricultural production across Ukraine, leading to increased costs for transporting grains and other products to export markets and for importing necessary agricultural inputs like seeds and fertilizers. These cost increases have generally resulted in lower prices received by Ukrainian producers for their agricultural goods and higher costs for inputs.

There has also been a significant reduction in the farmed areas in Ukraine, with the USDA estimating considerable decreases in the harvested areas for wheat, corn, and barley for the 2023/24 season [25]. Meanwhile, the areas for growing sunflower, soybeans, and rapeseed have seen varied changes, with overall reductions in cultivated land across all major crops compared to previous years.

The war has notably impacted Ukraine's agricultural exports. The cessation of shipments from Ukrainian Black Sea ports around the invasion led to the adoption of alternative routes known as "Solidarity Lanes" through neighbouring European countries. Although these routes initially managed only a fraction of the typical export volumes, the initiation of the Black Sea Grain Initiative by Türkiye and the United Nations on July 22, 2022, significantly boosted exports. This initiative, although precarious and eventually unlawfully terminated by Russia in July 2023, allowed substantial grain and oilseed exports from Ukraine, helping to ease global food prices.

Shifts in export patterns have emerged due to the war, with significant changes in the destinations of Ukrainian wheat and corn exports, influencing markets in Europe, the Middle East, North Africa, and parts of Asia. These shifts have been accompanied by local protests in countries like Poland and Slovakia over the surge of Ukrainian agricultural products, prompting negotiations for import limits within the European Union.

Overall, while global markets have adjusted, the continuing war in Ukraine poses ongoing challenges to the agricultural sector and global food security. The resilience of Ukrainian producers and the dynamic responses of global markets are crucial in navigating these turbulent times.

Despite significant challenges, Ukraine's agriculture sector has demonstrated resilience. Farmers continue to navigate through the hurdles imposed by the ongoing war and disruptions. However, the situation remains fragile, with global markets sensitive to changes in production and export capacities both in Ukraine and worldwide.

On a broader scale, the repercussions of the war extend beyond immediate agricultural disruptions. For instance, the shift in export destinations has altered

traditional trade flows, particularly impacting regions that previously relied heavily on Ukrainian grain. The redirection of exports towards European markets has reduced supplies to regions like sub-Saharan Africa and Southeast Asia, which could heighten food insecurity in these already vulnerable areas [9].

Moreover, global commodity prices, while currently stabilized, remain susceptible to future shocks. Factors such as weather conditions, geopolitical tensions, and further disruptions in major producing regions could precipitate rapid price increases. The global market's ability to absorb such shocks depends on the continued flexibility and responsiveness of global supply chains and trade policies.

Looking forward, the agricultural outlook in Ukraine and its impact on global markets depends heavily on the geopolitical landscape and the potential resolution of the war. Continued international cooperation and dialogue are essential to ensure that agricultural trade can function as a stabilizing force in global food security. This includes diplomatic efforts to secure peace, stabilize regions, and maintain open and fair trade routes that can adapt to crises and protect against food scarcity.

Furthermore, the lessons learned from the ongoing war underscore the importance of investing in sustainable agricultural practices and resilient food systems globally. Enhancing the capability of different regions to produce food sustainably and withstand socio-economic shocks is crucial for future food security. This involves not only technological innovation and infrastructural development but also supportive policies that foster resilience against climate change, market volatility, and geopolitical disruptions.

In conclusion, while the war in Ukraine presents significant challenges, it also offers critical lessons on the interconnectedness of global agriculture and the necessity of robust, adaptable systems to support food security worldwide. The situation calls for a concerted effort from global leaders, policymakers, and the agricultural sector to devise strategies that not only address current challenges but also prepare for future uncertainties. The role of Ukraine in contributing to global food security as the major agricultural exporter is massive, and despite the Russian crimes and threats to food security, Ukrainian farmers and traders demonstrated resilience in their option to

ensure constant access to nutritional food for all the people in the world by exporting the grain and oils from Ukraine.

CONCLUSIONS TO CHAPTER 2

In conclusion, Ukraine, the “breadbasket of Europe”, was and remains the major player in the international food trade market despite the crimes of Russian Federation, significantly contributing to food availability, which is an integral component of global food security. The unlawful and unprovoked full-scale invasion of the Russian military forces into Ukraine was a major hit to international food security and led to the jeopardizing of international food prices with the hundreds of thousands of people facing food insecurity.

At the current time, two years after the beginning of the invasion, the international markets adopted, and the food price index returned to its indications before the invasion as if the food security crisis was allegedly solved. However, this is not the case.

The unlawful occupation of a significant part of Ukrainian agricultural land, destruction of the civil processing and storage facilities by the missile strikes, the blockage of the Black Sea deep ports and occupation of the seaports of the Azov Sea, as well as the difficulties of the food exports by land in virtue of the protests in the neighbouring countries can not restore the level of the Ukrainian exports of agriculture and thought led to the reduction of the Ukrainian export facilities which negatively influenced on the global food availability which is one of the components of the food security.

Notably, the place of Ukraine in the agricultural supply chains should not, in any way, be replaced by the exports from the temporarily occupied territories of Ukraine controlled by Russia. The crops originating from the temporarily occupied territories should be traced and banned from export and excluded from the international supply chains. The reason for such steps is that if the agriculture originating from the occupied territories will be traded without barriers, by allowing the trade of such crops, the

international community will encourage and stimulate the occupation of the sovereign territories of Ukraine and benefit the occupation for their actions.

Furthermore, the russian war in Ukraine and further export restrictions aggravated the food insecurity crisis and underlined that the reform of the trade rules in the sphere of agriculture is urgent. The reform of the WTO-law system, which declares its obligations in the sphere of agriculture and food security, is urgent and should be considered and elaborated for the purpose of ensuring global food security.

CHAPTER 3. THE REFORMING THE ROLE OF WTO IN PROMOTING FOOD SECURITY DURING THE FOOD CRISIS TRIGGERED BY THE FULL-SCALE INVASION OF UKRAINE

The Russian war in Ukraine once again confirmed the fragility of the current trade system established and governed by the WTO, especially in the sphere of agriculture. The threat to food security, caused by the Russian full-scale invasion, although being widely discussed, unfortunately, remained unresolved to date.

Eventually, despite the crimes and occupation, the WTO did not provide, nor establish a real legal mechanism that would make it possible to limit the access for agriculture originating from Russia and the temporarily occupied Ukrainian territories to the global international markets.

Unfortunately, the WTO limited itself only to the non-binding food security declarations. Considering the crisis of the WTO, in this study, we would like to introduce the possible amendments to the current WTO trade policies in the sphere of agriculture that may solve the following tasks: (1) to establish the system in which the products originating from the occupied territories should be limited in access to the international trade markets, (2) to solve the problem of the balance between the free trade policy and WTO principles established in the Agreement on Agriculture on the one hand, and the trade distortion practices of export prohibitions, public stockholding and the subsidies on the other hand.

Finally, in this chapter, we will focus on the achievements of the current agricultural negotiations, declarations, and decisions applied in the two last Ministerial Conferences, which took place after the beginning of the invasion in Geneva in 2022 and in Abu Dhabi in 2024, such as the Ministerial Declaration on the Emergency Response to Food Insecurity of 2022 [59].

3.1. The proposals for amendments to the WTO Agreements limiting the trade of agricultural products originating from the temporally occupied territories.

As was elaborated in chapter 2 of this study, Ukraine was and remains one of the key agricultural exporters, contributing to the food availability worldwide. The full-

scale invasion by russians constituted a massive threat to global food security as the predictable, smooth, and stable exports from Ukraine were disrupted, threatening the most venerable subjects of the global trade of agriculture – the developing courtiers, the net-food importing countries. The massive threat to food security was for the key importers of Ukrainian commodities – the countries of the Middle East and North Africa, who were left “caught off guard and beaten” [9].

At the same time, the main cause of such threat of food shortages – russian federation did not face any responsibility in the sphere of international trade. That completely contradicts the fundamental principles of international trade.

Furthermore, the russian federation frivolously theft a generous amount of agricultural goods and sold them in the international trade markets. It is reported that as of November 2023, russia has exported 15 million tons of grain from the occupied Ukrainian territories [70].

The limitation of the trade of goods by russia originating from the occupied territories may be established through amendments to the TBT Agreement and SPS Agreement of the WTO.

In particular, article 2.1. of the TBT Agreement provides that [4]:

“2.1 Members shall ensure that in respect of technical regulations, products imported from the territory of any Member shall be accorded treatment no less favourable than that accorded to like products of national origin and to like products originating in any other country”.

Commenting on this article, the WTO Analytical Index provided that the Appellate Body considered that Article 2.1. contains a national treatment and a most-favoured nation treatment obligation of the Member States. The MFN treatment obligations prohibit discrimination through technical regulations among the like products imported from different countries [103]. The application of this article is based on the three-pronged legal test that was elaborated in cases *US – Clove Cigarettes* and *US – Tuna II (Mexico)* [103]: firstly, the measure applied should be a ‘technical regulation’, secondly, the products in the matter should be the like the domestic products and the products of other regions and thirdly, the treatment should be less

favourable than that accorded to like domestic products and like products from the other countries.

Considering the aim of the prohibition of export and import operations with the goods originating from the temporarily occupied territories of Ukraine, used by Russia in international trade, we propose to amend article 2.1. of the TBT Agreement with article 2.1. bis of the following wording:

“2.1. bis. Without prejudice to the Members’ obligation to provide treatment no less favourable than that accorded to like products of national origin and to like products originating in any other country, article 2.1. does not apply to the products originating from the territory of the Member country occupied or annexed by another Member country”.

For the purposes of ensuring the food security and impossibility of trade of agriculture originating from the temporarily occupied territories of Ukraine, further amendments should also be made to article 2.2. of the TBT Agreement, which in its current wording provides that Members must ensure that technical regulations are not formulated, adopted, or enforced in a manner that hinders international trade unjustifiably. These regulations should not impose more restrictions on trade than necessary to achieve a valid goal, considering the potential risks of non-compliance. Valid goals include national security, preventing fraud, and safeguarding human health, safety, and the environment. When evaluating risks, factors such as scientific and technical data, processing methods, and intended product uses should be taken into account [103].

In this regard, we propose to amend these provisions of article 2.2. of the TBT Agreement and replace it with the amended article 2.2. of the following wording:

“2.2 Members shall ensure that technical regulations are not prepared, adopted or applied with a view to or with the effect of creating unnecessary obstacles to international trade. The prohibition on the import of the goods originating from the occupied territories shall be considered as necessary measure of ensuring food security and predictability of trade. For this purpose, technical regulations shall not

be more trade-restrictive than necessary to fulfil a legitimate objective, taking account of the risks non-fulfilment would create. Such legitimate objectives are, inter alia: food security measures; national security requirements; the prevention of deceptive practices; protection of human health or safety, animal or plant life or health, or the environment. In assessing such risks, relevant elements of consideration are, inter alia: available scientific and technical information, related processing technology or intended end-uses of products”.

By applying such amendments to the TBT Arguments in the proposed wording, it would be ensured that the products, in particular the agricultural products, from the occupied territories of Ukraine shall be excluded from the international trade and the principles of the most favoured national treatment and nation treatment shall not be applied to the technical barriers to trade by of these products.

Further amendments are also proposed to the SPS Agreement of the WTO, which governs the sanitary and phytosanitary measures that may be introduced by the Member States. The fact is that due to the uncontrolled harvesting of agriculture in the occupied territories of Ukraine, the goods originating from there may contain harmful components inconsistent with the SPS provision.

In particular, it is our proposal to amend article 2.3 of the SPS Agreement, which prescribes that [5]:

“2.3. Members shall ensure that their sanitary and phytosanitary measures do not arbitrarily or unjustifiably discriminate between Members where identical or similar conditions prevail, including between their own territory and that of other Members. Sanitary and phytosanitary measures shall not be applied in a manner which would constitute a disguised restriction on international trade”.

The WTO Analytical Index on the SPS Agreement, commenting on article 2.3, provides that it was addressed by the Panel in the case *India – Agricultural Products* that article 2.3 of the SPS Agreement provides the Members with two separate obligations.

The initial obligation is to guarantee that Members' sanitary and phytosanitary measures do not discriminate arbitrarily or unjustifiably between Members in situations where identical or similar conditions exist, including within their own territory and that of other Members. The second responsibility is to ensure that these measures are not implemented in a manner that would create undue barriers to international trade [102].

In this regard, we would like to emphasise that the measures on the prohibition of exports from the occupied territories of Ukraine used by Russia in international trade can not be considered discriminatory measures due to the unlawful character of Russian's trade in the first place. Such measures are based on the legitimate aim of ensuring food security and protecting the importers of agriculture from bad practices of usage of harmful sanitary and phytosanitary methods while growing and harvesting agriculture. The measures for preventing the trade of agriculture originating from the occupied territories of Ukraine are not discriminative but are protective ones.

Furthermore, the limitation on the trade of agriculture from the occupied territories can not be considered a disguised restriction on international trade as it directly states that the limitation on the trade of the crops originating from the temporarily occupied territories of Ukraine serves the legitimate aim of ensuring food security for the importing country.

Considering the above, it is our proposal to amend the SPS Agreement by adding article 2.3. bis that would directly provide that for the purposes of the SPS Agreement, the trade restrictions on the import and export of agricultural products originating from the temporarily occupied territories of Ukraine can not be considered an act of discrimination of the products of the Members, not the measure of distinguished restriction on international trade.

Thus, we propose the following wording of the amended article 2.3 bis of the SPS Agreement:

“Without prejudice to article 2.3, for the purpose of this Agreement, the sanitary and phytosanitary measures applied by the Members prohibiting or limiting the import and/or export of the products originating from the territory of the Member country occupied or annexed by another Member

country should not be considered the discrimination between the Members, nor disguised restriction on international trade”.

Such an approach will ensure that the amended WTO rules on sanitary and phytosanitary measures, as well as the regulations on technical barriers to trade, provide an opportunity not to apply the most-favoured nation treatment and national treatment to goods originating from the temporarily occupied territory of Ukraine or any other occupied territories.

In the long stance, these measures will significantly contribute the food security by ensuring the stability of food accessibility, food availability and utilization. Furthermore, such prohibitions will be justified by the legitimate aims of ensuring food security and stability of the supply chains, which would lead to the predictability of the trade of food. Such predictability will open the possibility for the development of other politics of the WTO on food security, in particular, balancing the free-market approach and the approach of food subsidies, export restrictions and public stockholding and its influence on the global food security and the food security of the particular countries – WTO Members.

3.2. The ongoing agricultural negotiations on the amendments to the Agreement on Agriculture

Researching the issue of how the WTO elaborates on the threats to food security, we brought to the conclusion that the major issue discussed among the WTO Members and researchers is to solve the problem of trade distortion policies such as export restrictions, subsidies, and public stockholding. Such actions of the countries, on the one hand, solve the issues of internal food security and food sovereignty within the states, but on the other, they may leave a serious impact on the shortage of agricultural supplies, driving the prices and narrowing the import possibilities for the food importing countries.

Consequently, there are two ways of policies on how to solve trade distortion practices and free trade in the sphere of agriculture. The first one is represented by developing countries, in particular, India, whose stances on the policy of public

stockholding are that it is introduced to secure and motivate the local farmers to ensure food security within the state [12], [74].

As of now, the position of the supporters of public stockholding is expressed in the G-33 Ministerial Statement on Agriculture Trade Negotiations at the 13th WTO Ministerial Conference of 24 February 2024 [31].

In this statement, the countries of G-33 raised the following issues:

Firstly, the G-33 expressed their deep concern that almost 600 million people will be chronically undernourished in 2030 and that hunger will increase significantly in Africa by 2030, as projected by the FAO [31].

Secondly, the G-33 expressed regret for a serious lack of progress in agriculture trade negotiations, including in fulfilling the outstanding mandates of previous Ministerial Conferences (bearing in mind the Ministerial Declaration on Emergency to Food Insecurity adopted on MC 12), noting that progress is key to restoring trust between Members and preserving the credibility of the WTO [31].

Thirdly, the G-33 stated that the vast majority of the G-33 Members recognized the critical importance of public stockholding for food security purposes for developing country Members, including LDCs and NFIDCs, in meeting our food and livelihood security, as well as our rural development imperative, including supporting low income or resource-poor producers [31].

Fourthly, the G-33 reiterated the developing country Members' right to the Special Safeguard Mechanism (SSM) as an important instrument against major import surges or sudden price declines [31].

Finally, the G-33 underlined that they support the Special and Differential Treatment for developing country Members, including LDCs and NFIDCs, which must be preserved in the WTO and its agreements, and non-trade concerns of Members must always be considered in agriculture trade negotiations [31].

The second point of view on the issue of food security through public stockholding is represented by the developed countries and is provided in the current version of the WTO Agreement on Agriculture. Their position is that food security may be achieved by cancelling trade-disruptive practices such as public stockholding,

export prohibitions, and subsidies. The WTO, in particular, implemented such a commitment at the Ministerial Conference in Nairobi in 2015 by adopting the Ministerial Decision on Export Competition, by which the Members agreed to immediately eliminate their remaining scheduled export subsidy entitlements as of the date of adoption of the Decision [103].

Notably that such efforts of the WTO, reflected in particular in the Agreement on Agriculture, aimed to reach target 2b of the Sustainable Development Goal 2 of zero hunger [38].

The objective is to mitigate trade limitations and distortions within global agricultural markets, encompassing the simultaneous eradication of all types of agricultural export subsidies and any export measures producing similar effects.

It is worth noting that the effectiveness of the agricultural negotiations remains a weak point for further amendments to the WTO agreements on food safety and agriculture. Diametrically different points of view between the supporters of the public stockholdings and their opponents leave no place for the agreement and may lead to the fragmentation of global trade, as the IMF warned [10].

Although not been adopted at the Ministerial Conference 13, the current status of the agricultural negotiations is expressed by the Chair of the agricultural negotiations, Ambassador Alparslan Acarsoy of Türkiye, in the draft of the communication on agriculture [7] [14].

In its communication, the Chair of the agricultural negotiations expressed his best efforts to reflect, as faithfully as possible, the state of agricultural negotiations as of 16 February 2024 in advance of the Ministerial Conference 13 [7]. It covers the major blocks of issues to be negotiated and accepted between the member states, such as (a) domestic support, (b) market access, (c) Special Agricultural Safeguard (SAS) instrument, (d) export prohibitions and restrictions, (e) export competition, (f) cotton trade-related component, (g) cotton development assistance component and (h) public stockholding for food security purposes.

We would also like to consider these issues in virtue of their direct impact on the trade by agriculture and global food security.

First, the Chair expressed its belief that more productive negotiations at MC 14 would be possible because the negotiating parties' positions on the issues listed above are divergent at present.

Secondly, without prejudice to Members' rights under the Agreement on Agriculture and considering the vulnerable position of the LDCs, which are dependent on food imports, it was proposed to make a commitment that net food-exporting countries should, to the extent possible, should refrain from the export restrictions to ensure the current food security needs of the LDCs, taking due account of past levels of imports.

Thirdly, the importance of the notification and transparency obligations under the WTO rules and special and differential treatment for the developing countries was underlined.

As to the issue of **domestic support**, the Chair expressed his position as follows. The Members should intensify the negotiations on domestic support analyzing and discussing all forms of trade-distorting support with a view to reducing substantially and progressively the most distorting forms of such support in a fair and equitable manner [7]. The reduction of the trade-distorting practices should be applied by Members considering one's global market participation, the needs of the developing Members, the interests of exporters and the concerns of importers of agriculture. The main point in this regard was made to encourage a shift towards less trade-distorting practices of domestic support. Special attention, as explained above, was paid to the special and differential treatment of developing country Members and LDCs, including support to low-income and resource-poor farmers [7].

The issue of **market access** was elaborated in the following stance. First, it was proposed to continue negotiations on this issue, stating the primary objective of reducing substantially and progressively protection in a fair and equitable manner to improve market access opportunities for all Members and improving disciplines in accordance [7]. Such commitments shall include tariff reduction and other elements, such as tariff simplification, tariff escalation, high tariffs and tariff peaks, tariff rate

quotas, and special agricultural safeguards, taking into account exporting Members' interests and importing Members' sensitivities.

Special Agricultural Safeguard (SAS) instrument was also elaborated by the Chair in his communication on agriculture. In particular, the Chair proposed to intensify negotiations on a special safeguard mechanism for developing country Members. Furthermore, it was the Chair's proposal for the Members to agree on engaging in enhanced technical discussions on specific themes relevant to the SAS mechanism.

The matter of the **export prohibitions and restrictions** by the Members was also elaborated on and discussed with the primary option that although the Members have the right to impose the export prohibitions and restrictions, they should enhance transparency and predictability of export prohibitions and restrictions. Notably, the Chair proposed the Members to agree on the review of the notification format to facilitate timely access to clear and relevant information by Members having a substantial interest as importers, taking into account the capacity constraints of developing country Members. It was considered that the discussions shall take into account the interests of all Members, with particular attention paid to the needs of LDCs and NFIDCs.

Throughout 2022, 32 countries implemented 77 export restrictions, as tracked by IFPRI. The WTO, which requires timely notification of such measures, was informed of only a small fraction of these restrictions, and often notifications were delayed [30]. No significant advancements were made at the WTO's 12th Ministerial Conference to discipline the use of export restrictions, although there was an agreement to exempt World Food Programme purchases for humanitarian purposes from these restrictions.

The **export competition** issue was elaborated on in three points. Firstly, it was proposed to ensure the effective implementation and monitoring of the Nairobi Ministerial Decision on Export Competition of 2015, which was considered above [62]. The attention was paid to the commitment to ensure an effective implementation and monitoring of the Nairobi Ministerial Decision on Export Competition. Secondly,

the proposal was to agree to continue negotiations to enhance disciplines on export credits, export credit guarantees or insurance programmes, agricultural exporting state trading enterprises and international food aid as may be necessary to ensure that these measures do not result in a circumvention of export subsidy elimination commitments and to prevent non-commercial transactions from being used to circumvent such commitments [7]. Thirdly, special attention was paid to the needs and circumstances of least-developed and net food-importing developing countries, including by exploring ways to enhance the transparency of the implementation of the Nairobi Decision on Export Competition in relation to the specific provisions therein for LDCs and NFIDCs on export credits, export credit guarantees or insurance programmes and international food aid.

Finally, the key issue of **public stockholding for food security purposes (PSH)**, unfortunately, was elaborated in the least direct manner. In particular, it was proposed whether to adopt a permanent solution for this issue, even without a proposal on how this permanent issue should be applied, or to continue the negotiations in this matter and adopt the permanent solution of the public stockholding at the next MC 14, which shall be available to all developing country Members. Public stockholding programmes shall not distort trade or adversely affect the food security of other Members [7]. It was proposed that the negotiations for a permanent solution of the public stockholding for food security shall pay particular attention to the food security challenges of LDCs and NFIDCs, and consider all relevant issues, including domestic food security targets of the programmes; product coverage; safeguards and anti-circumvention, including with respect to exports; transparency; and legal certainty [7].

Considering the above issues, we may bring to the conclusion that similar to the 12 Ministerial Conference 2022, even if the draft proposed by the Chairman was adopted, it would still be limited to the non-binding food security declaration [62]. Unfortunately, the primary goal of forming the trade agenda with teeth, unfortunately, faces the impossibility of finding a permanent solution between the Members with opposite interests.

At the same time, worth noting that all WTO members acknowledged food security as a critical outcome of these talks, but their strategies to achieve it varied. Some advocated for public stockholding and the special safeguard mechanism, along with domestic support and cotton considerations. Others called for increased transparency and stricter rules on agricultural export restrictions. Additionally, some believe that improving market access for agricultural products can enhance food security by making food more readily available and affordable [62].

A unified stance is that any agreement on food security should benefit LDCs, given the FAO report stating that from 2020 to 2022, 265 million people in LDCs suffered from food insecurity. This should be the starting point for further negotiations and a permanent decision-making process. Looking forward to the Ministerial Conference 14, we may express restrained optimism, as there is no WTO member who would not understand the seriousness of the matter of food security and the fact that the WTO trade rules on agriculture should be reformed. Thus, there is a positive concern that the issues of domestic support, market access, Special Agricultural Safeguards, export prohibitions and restrictions, export competition and public stockholding for food security purposes may be reformed through multilateral negotiations and agreements.

CONCLUSIONS TO CHAPTER 3

Considering the WTO's current status, its potential development, and the measures that might have been taken but were not taken in reaction to global food security, we conclude that there is a lot of room for further improvements to the current WTO trade system in the sphere of agricultural trade in order to ensure the global food security. In this chapter of the study, we proposed amendments to the TBT and SPS Agreements aiming at the limitation of trade of the products originating from the temporarily occupied territories of Ukraine. The need for such amendments is urgent in virtue of the fact that the Russian Federation used the methods of aggressive war and occupied the sovereign territory of Ukraine, disrupting the food supply chains and causing a massive threat to food security worldwide. At the same time, the agricultural

products originating from the occupied territories, in fact, theft goods, are still imported by the Members and are not excluded from international trade.

Furthermore, in this chapter, we focused on the issue of the ongoing agriculture negotiations and developments on the amending of the WTO Agreement on Agriculture in virtue of the last 13th Ministerial Conference of WTO held in Abu Dhabi in February 2024. The conclusions are made that food security is highly dependent on the issues currently discussed within the agricultural negotiations, such as domestic support, market access, Special Agricultural Safeguards, export prohibitions and restrictions, export competition and public stockholding for food security purposes. A permanent solution to these matters is still not found due to the opposite interests of the importing and exporting countries, which negatively affects the decision-making and amendments process. However, further commitments to amend the current trade system in the agricultural sphere are made, and the multilateral agricultural negotiations may give fruit at the future 14th Ministerial Conference of 2026.

CONCLUSIONS

In this study, we focused on the role of the WTO in ensuring food security in the context of the Russian war against Ukraine. Considering the study, we brought to the conclusions.

The study consists of three chapters. Each chapter is devoted to the issue related to the role of the WTO in ensuring food security in the context of the Russian war against Ukraine. In particular, in the first chapter, we analysed the concept of food security and the place of the WTO in its assurance. Following the first chapter, we came to the following conclusions.

First, food security is a multidimensional concept that consists of four components, namely food accessibility, food availability, utilisation and stability for every person at every time. The right to food, although natural and biologically determined, is fragile due to the distortions in international trade, and there is a threat to food security that arose in critical periods such as wars, crises and natural disasters. In this study, we analysed the genesis and definition of the concept of food security and proposed an updated version of the definition of food security, a multidimensional concept, which encompasses the constant availability, accessibility, utilisation and stability of food for each and all individuals and communities, ensuring that they have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and cultural preferences, enabling them to lead active lives that should be ensured in the circumstances of the war, reached and maintained as the UN Sustainable Goal 2 of Zero Hunger.

Secondly, we conducted a comparable analysis of the concept of food security with other related concepts such as food safety, food sovereignty, food resilience, food justice, and food waste reduction. In particular, we in this study focused our attention on the concept of food security, and we found that this concept is the most fundamental of the analysed concepts. As such, that prescribed constant food accessibility for every person and all other analysed concepts are derivative or alternative to the concept of food security.

Thirdly, in this study, it was considered the role of trade and the WTO in ensuring the food security of all four food security dimensions and studied what was the impact of the WTO on food security before the full-scale invasion of Russia into Ukraine. Furthermore, we analysed the course and the evolution of the agricultural negotiations and the proposals to amend the Agreement on Agriculture on the Doha round of negotiations and agreement at the Bali and Nairobi Ministerial Conferences.

The second chapter was devoted to the place of Ukrainian agricultural export in ensuring global food availability, which is part of global food security and the threatening impact of the Russian war against Ukraine on food security. Following the second chapter, we came to the following conclusions.

Firstly, even before the start of the full-scale invasion of Russia into Ukraine, the situation with food security was unstable due to the Covid-19 pandemic and its impact on trade. An additional 97 million people are estimated to have fallen into poverty since 2020. The invasion's impact on the already weakened food system was not just an isolated event but a continuation of vulnerabilities that had been manifesting for years.

Secondly, it was analysed the impact of Ukrainian agricultural exports on global food security, concluding that during the last 33 years, Ukraine demonstrated significant progress in agricultural production, transforming from a country that imported agriculture to one of the key exporters of sunflower, maize, wheat and other agricultural commodities, being the key supplier of the agricultural products, primarily to the Middle East and North Africa.

Thirdly, we analysed the consequences of the Russian full-scale invasion on global food security during the first year of the war, concluding that the start of the war became a massive threat to global food security, skyrocketing the prices for the commodities, blocking the Ukrainian exports by the Black Sea and led to the change of policies of the exporting countries that led to the export prohibitions and shortage of the supply of the agriculture at the international markets. Such actions deeply affected the most vulnerable developing countries, least developed countries, and net-food import countries. Moreover, attention was paid to the status of the agricultural products originating from the temporarily occupied territories of Ukraine.

Fourthly, we considered the current status of food security, two years after the invasion, stating that the prices for agriculture in the international markets decreased. At the same time, the state of food security remains vulnerable, and the conclusion is made that there is an urgent requirement to amend the current WTO trade system.

The third chapter is devoted to the proposition of amendments to the current WTO Agreements – TBT Agreement and SPS Agreement and consideration of the ongoing status of the agricultural negotiations from the perspective of the 13th Ministerial Conference of the WTO.

In particular, firstly, it was proposed to amend the TBT Agreement with article 2.1 bis, which would prescribe that without prejudice to the Members' obligation to provide treatment no less favourable than that accorded to like products of national origin and to like products originating in any other country, article 2.1 does not apply to the products originating from the territory of the Member country occupied or annexed by another Member country.

A further amendment was proposed to article 2.2 of the TBT Agreement prescribing that the prohibition on the import of goods originating from the occupied territories shall be considered as a necessary measure of ensuring food security and predictability of trade.

Furthermore, amendments were proposed to the SPS Agreement by adding article 2.3 bis of the SPS Agreement that prescribes that without prejudice to article 2.3, for the purpose of this Agreement, the sanitary and phytosanitary measures applied by the Members prohibiting or limiting the import and/or export of the products originating from the territory of the Member country occupied or annexed by another Member country should not be considered the discrimination between the Members, nor disguised restriction on international trade.

Secondly, the author's considerations were expressed with regard to the current status of the agriculture negotiations and the outcome of the Ministerial Conference 13. In particular, we analysed the two opposite positions on the issues of domestic support, market access, Special Agricultural Safeguards, export prohibitions and

restrictions, export competition and public stockholding and their impact to the global food security.

Consequently, within this study, we completely reached the research tasks set.

Firstly, we defined the concept of food security and studied its origin and genesis (first and second sub-chapters of the first chapter of the study). Secondly, we analysed the role of the WTO agreements in establishing the food security and measures taken before the full-scale invasion of Russia in Ukraine (third sub-chapter of the first chapter of the study). Thirdly, we considered the contribution of Ukraine to the assurance of global food security (second sub-chapter of the second chapter of the study). Fourthly, we analysed the impact of the Russian full-scale invasion on global food security and the place of the agricultural products harvested on the occupied Ukrainian territories (third sub-chapter of the second chapter of the study). Fifthly, we proposed amendments to the current WTO system on the limitation of the trade of agricultural products harvested on the occupied Ukrainian territories and consider the current status of the agricultural negotiations from the perspective of the MC 13.

The role of the WTO in supporting and encouraging international trade directly influences global food security. The WTO, although it has a positive effect on trade, with the current limited scope of legal instruments and opposite interests of the Members, can not swiftly and effectively react to the dynamic events of wars and disasters, ensuring food security as evidenced by the threats of the full-scale invasion. However, the negotiations continue, and possibly with the assistance of scholars and multilateral negotiations, the WTO would find a way for further development and reforms that may effectively help the WTO to complete its obligation of ensuring global food security.

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