



THE ISSUE CONTAINS:

Proceedings of the 15th
International Scientific
and Practical Conference

**SCIENTIFIC RESEARCH
IN XXI CENTURY**

Ottawa, Canada
16-18.02.2024

SCIENTIFIC COLLECTION
INTERCONF

№ 188
February, 2024

Scientific Collection «InterConf»

No 188

February, 2024

THE ISSUE CONTAINS:

Proceedings of the 15th International
Scientific and Practical Conference

**SCIENTIFIC RESEARCH
IN XXI CENTURY**

OTTAWA, CANADA

February 16–18, 2024



OTTAWA
2024

UDC 001.1

S 40 *Scientific Collection «InterConf»*, (188): with the Proceedings of the 15th International Scientific and Practical Conference «Scientific Research in XXI Century» (February 16–18, 2024; Ottawa, Canada) / comp. by LLC SPC «InterConf». Ottawa: Methuen Publishing House, 2024. 428 p.
ISBN 978-0-458-20903-3 (series)
DOI 10.51582/interconf.2024.188

EDITOR

Anna Svoboda
Doctoral student
University of Economics;
Czech Republic
annasvobodaprague@yahoo.com

COORDINATOR

Mariia Granko
Coordination Director
LLC Scientific Publishing Center
«InterConf»; Ukraine
info@interconf.center

EDITORIAL BOARD

Temur Narbaev (DSc in Medicine)
Tashkent Pediatric Medical Institute,
Republic of Uzbekistan;
temurl972@inbox.ru

Nataliia Mykhalitska (PhD
in Public Administration)
Lviv State University of
Internal Affairs; Ukraine

Dan Goltsman (Doctoral student)
Riga Stradiņš University;
Republic of Latvia;
goltsman.dan@inbox.lv

Katherine Richard (DSc in Law),
Hasselt University; Kingdom of Belgium
katherine.richard@protonmail.com;

Bashirov Ansar (Doctor of Medicine),
EMIH of Almaty region,
Republic of Kazakhstan

Stanyslav Novak (DSc in Engineering)
University of Warsaw; Poland
novaks657@gmail.com;

Kanako Tanaka (PhD in Engineering),
Japan Science and Technology
Agency; Japan;

Mark Alexandr Wagner (DSc. in Psychology)
University of Vienna; Austria
mw6002832@gmail.com;

Elise Bant (LL.D.),
The University of Sydney; Australia;

Richard Brouillet (LL.B.),
University of Ottawa; Canada;

Kamile Əliağa qızı Əliyeva (DSc
in Biology)
Baku State University; Republic of Azerbaijan

Dmytro Marchenko (PhD in Engineering)
Mykolayiv National Agrarian University
(MNAU); Ukraine;

Svitlana Lykholat (PhD in Economics),
Lviv Polytechnic National University; Ukraine

Viktor Yanchenko (PhD in Pharm. Sc.),
T.H. Shevchenko National University
«Chernihiv Colehium»; Ukraine

Rakhmonov Aziz Bositovich (PhD in Pedagogy)
Uzbek State University of World Languages;
Republic of Uzbekistan;

Mariana Vereskliia (PhD in Pedagogy)
Lviv State University of Internal Affairs;
Ukraine

Dr. Albena Yaneva (DSc. in Sociology
and Anthropology),
Manchester School of Architecture; UK;

Vera Gorak (PhD in Economics)
Karlovarská Krajská Nemocnice; Czech Republic
veragorak.assist@gmail.com;

Polina Vuitsik (PhD in Economics)
Jagiellonian University; Poland
p.vuitsik.prof@gmail.com;

Alexander Schieler (PhD in Sociology),
Transilvania University of Brasov; Romania
alexandrds.schieler@protonmail.ch

George McGrown (PhD in Finance)
University of Florida; USA
mcgrown.geor@gmail.com;

Vagif Sultanly (DSc in Philology)
Baku State University; Republic of Azerbaijan

Larysa Kupriianova (PhD in Medicine)
Humanitas University, Italy








Please, cite as shown below:

1. Surname, N. & Surname, N. (2024). Title of an article. *Scientific Collection «InterConf»*, (188), 21–27. Retrieved from <https://archive.interconf.center/index.php/conference-proceeding...>



This issue of Scientific Collection «InterConf» contains the materials of the International Scientific and Practical Conference. The conference provides an interdisciplinary forum for researchers, practitioners and scholars to present and discuss the most recent innovations and developments in modern science. The aim of conference is to enable academics, researchers, practitioners and college students to publish their research findings, ideas, developments, and innovations.

Scientific Collection «InterConf» and its content are indexed in Google Scholar



© 2024 Authors
© 2024 Methuen Publishing House
© 2024 LLC SPC «InterConf»

	Рябка Ю.А. Вінніков А.І.	ОСОБЛИВОСТІ ЗМІН БІОХІМІЧНИХ ПОКАЗНИКІВ КРОВІ ПРИ АОРТОКОРОНАРНОМУ ШУНТУВАННІ У ПАЦІЄНТІВ, ЯКІ ПРОЖИВАЮТЬ У ПРОМИСЛОВОМУ МІСТІ	291
	Сергієнко З.В.	АНАЛІЗ ТА ОЦІНКА ГЕМАТОЛОГІЧНИХ ПОКАЗНИКІВ ПРИ АНЕМІЇ	307
	Талыбова Д.Х. Новрузова М.С. Байрамова Р.С. Гасымова М.Ч. Бахишова Е.А.	РОЛЬ МИКРОФЛОРИ ПОЛОСТИ РТА В РАЗВИТИ АТЕРОСКЛЕРОЗА И ДРУГИХ ЗАБОЛЕВАНИЙ	311
	Турицька Т.Г. Досенко Н.В.	ПОРУШЕННЯ ФУНКЦІЇ НИРОК ПРИ СЕРЦЕВО- СУДИННИХ ЗАХВОРЮВАННЯХ ТА ЇХ НАСЛІДКИ	316
	Турицька Т.Г. Кролевецька І.Е.	МОЖЛИВОСТІ СУЧАСНОЇ ДІАГНОСТИКИ ОСТЕОАРТРИТУ: СТАН ПРОБЛЕМИ ТА ПЕРСПЕКТИВИ РОЗВИТКУ	327
	Турумова Г.К. Нарымбетова А.Қ. Тайпакова Ж.С.	СМЕРТНОСТЬ ОТ ИНСУЛЬТА В РЕСПУБЛИКЕ КАЗАХСТАН	338
	Яшнова А.С. Вінніков А.І.	ДИНАМІКА ВИЯВЛЕННЯ ВІРУСІВ SARS-COV- 2 ТА ВІРУСІВ ГРИПУ ТИПУ А/В ЗАЛЕЖНО ВІД СЕЗОННИХ ЗМІН	342


GEOLOGY, MINERALOGY AND SOIL SCIENCE

	Антоненко Т.С. Снісар В.П. Овсієнко В.В.	ОКИСНЕННЯ МІНЕРАЛЬНОЇ ФАЗИ МАГНЕТИТУ В ПРОЦЕСІ МЕХАНІЧНОГО ПОДРІВНЕННЯ	344
	Осьмачко Л.С.	ПРОЯВИ СТРУКТУРИЗАЦІЇ ТЕХНОГЕННИХ УТВОРЕНЬ У КАР'ЄРІ «ПІВДЕННИЙ» М. КРИВИЙ РІГ	348


NATURE MANAGEMENT, RESOURCE SAVING AND ECOLOGY

	Dyudyayeva O.	THE MODERN THREATS TO THE FOOD SECURITY OF THE WORLD AND UKRAINE	358
	Котовенко О.А. Мірошниченко О.Ю. Тарабанова Ю.С. Сегеда П.Ф.	ОДИН З ПІДХОДІВ ДО ЗНИЖЕННЯ ІМОВІРНОСТІ ВИНИКНЕННЯ ІНЦИДЕНТНИХ ТЕХНОГЕННИХ ЕКОЛОГІЧНИХ КАТАСТРОФ	364

PHYSICS AND MATHS

	Кондратенко П.О.	ТАХІОНИ І ЇХНЯ РОЛЬ У ВСЕСВІТІ	368
---	------------------	--------------------------------	-----

LIGHT INDUSTRY AND FOOD INDUSTRY

	Гопанчук Л.М.	БЕЗПЕКА ТА ЯКІСТЬ ПРОДУКТІВ ХАРЧУВАННЯ ЯК ЗАПОРУКА ЗДОРОВОГО СПОСОБУ ЖИТТЯ	377
---	---------------	--	-----

NATURE MANAGEMENT, RESOURCE SAVING AND ECOLOGY

The modern threats to the food security of the world and Ukraine

Dyudyayeva Olha¹

¹ Senior Lecturer, Export Expert to the EU;
Kherson State Agrarian and Economic University; Ukraine

Abstract. Food security is a priority both in the state policy of any country and in the global world. Among the causes of the unstable situation that has developed in the world food market today are ineffective management of productive forces in agriculture and the processing industry, the impact of natural, man-made and crisis facts, in particular climate change, the consequences of the military actions of the invasion of Russian troops on the territory of Ukraine, which is one of the leaders in the agricultural sector. Therefore, the search for optimal ways of the reformation the agro-industrial sector, its modernization and greening is the object of scientific research in recent years.

Keywords: food security, crisis fact, food market, greening of the industry.

The food security is one of the most important conditions for the sustainable existence and development of society. Moreover, it is important both for a single country and for the global world. In terms of a separate country, both for a single person and for society, as a whole, and for various social groups. The food security is a component of the state security of an individual country and the world, as a whole.

Ensuring food security through various mechanisms, such as greening production, improving food and logistics chains, etc., contribute to the improvement of the general state of the society. The state of health of the country's population, the quality, length and standard of its life depend to a large extent on how complete the food supply is. And among the main factors are the situation on the domestic food market, the degree of its dependence of the world food market, the financial capacity of the population to achieve their needs, the possibility of consuming safe, high-quality and complete food products. It is impossible to solve economic and social problems within the country effectively, without taking into account the challenges of the world market, interrelationships with global processes, in order to achieve

NATURE MANAGEMENT, RESOURCE SAVING AND ECOLOGY

state interests in ensuring food security. The food security is a priority of state policy, the object of scientific research into all aspects of food security with the aim of finding optimal ways of the reformation the agro-industrial sector, its modernization and greening.

There are several reasons for the unstable situation that has developed today on the global food market. They are the result of ineffective management of productive forces in agriculture and the processing industry, the consequences of the influence of natural, man-made and crisis facts which are occurring in the world. Taking into account that Ukraine is one of the main players on the world food market and one of the leaders in the agricultural sector, the consequences of the military invasion of russian troops on the territory of Ukraine were added to the above-listed influencing factors, and continue to be added [1-3].

Therefore, today Ukraine has an important task in terms of providing the country's population with food and fulfilling its obligations to other countries regarding the supply of food products. This makes it necessary to further study the issues of ensuring the food security, taking into account modern trends.

According to the final document of the UN Summit «Transforming our world: an agenda in the field of sustainable development for the period until 2030» (item 24), one of the priority areas of the world community is ensuring food security and ending hunger [1].

The question of environmental and food security in Ukraine is determined by a number of National Security Strategies which were adopted during the independence's years.

Thus, in the first National Security Strategy of Ukraine, which was approved by the Decree of the President of Ukraine No. 105/2007 of February 12, 2007, Article 3.3 of Section 3 «Strategic Goals, Priorities and Tasks of the National Security Policy» emphasizes that ensuring an acceptable level of economic security is impossible without structural reconstruction and increasing the competitiveness of the national economy, and Ukraine must be consistent in implementing land reform, ensuring in practice the priority development of the agro-industrial complex as the basis of the country's food security [2-5].

New modern innovative solutions, development and implementation of achievements of genetic engineering, GIS technologies accompany the development of the global world

NATURE MANAGEMENT, RESOURCE SAVING AND ECOLOGY

today. However, the problems of food safety remain and require their solution as soon as possible [6].

According to the reports of the Food and Agriculture Organization of the United Nations (FAO), at the beginning of 2020, about 800 million people of the planet experienced a lack of food supply. This period was the beginning of the COVID-19 pandemic [7–10]. Thanks to the pandemic, society has drawn attention to the imperfection and vulnerability of agri-food systems.

The pandemic, the effects of which were not overcome in 2021–2022 and which reminded about itself again today, has increased the problem of assessing the state of global food security due to the physical distancing that was introduced to contain the spread of the pandemic at its beginning.

Over the past two years, the situation has not changed, but only worsened. Hundreds of millions of people on the planet face to the problem of malnutrition every day. Among the reasons are the disruption of supply chains and logistics, post-Covid inflation that caused food prices to rise, climate change etc.

One of the solutions to overcome these consequences of the global food crisis was called the reduction of the food losses. Thus, according to UNEP food system experts and the non-profit organization WRAP, up to seventeen percent of all food available for consumption is lost throughout its life cycle – from production and obtaining raw materials to sale and/or use of products, food waste arising in the retail trade system, public food. These losses in monetary terms amount to about 1 trillion US dollars annually. To reduce the losses of food products that occur at all stages of the food chain (production, transportation, storage and consumption) is one of the main tasks on the global level [11, 12].

But today, agriculture and agribusiness face to another important and controversial challenges. They are the need to provide high-quality and ecologically safe food for the population of the planet with the tasks of preservation of the environment. Therefore, the use of innovative technologies is the only way to streamline a number of problems and ensure the productivity and sustainability of food systems around the world. This will ensure high-quality and environmentally safe storage of raw materials, their processing and production of products with a long shelf life.

The war on the territory of Ukraine made the sowing campaigns of 2022 and 2023 the most difficult since the

NATURE MANAGEMENT, RESOURCE SAVING AND ECOLOGY

country's independence. The occupation of the territories and military actions led to a decrease in cultivated areas by 3.5 million hectares, a shortage of labor, agricultural machinery, fuel, destruction of logistics routes, lack of necessary funds, etc. Such challenges have never before arisen simultaneously for domestic farmers [13].

Taking in account, that Ukraine is one of the world's leading exporters of grain and oilseeds, russia's military invasion has had a significant impact on agribusiness and food security around the world. As an example, in 2021 Ukraine exported almost 6 million tons of oil (47% of world sales). The beginning of the war caused a significant decrease in the volume of supplies on the world oil market and an increase in the price.

According to FAO dates, the global food price index reached an all-time high in February 2022 after steady growth in recent years. The number of food insecure people worldwide may soon reach a 15-year high due to the effects of the war and COVID-19 [14].

According to the background of the growing degree of uncertainty due to the war in Ukraine, which negatively effects on the consumer market and the attraction of new investments, negatively affects the GDP of countries, economists equate the war between the russian federation and Ukraine with the financial crisis of 2009 and the COVID-19 pandemic. The worsening situation of global food security is also influenced by export disruptions in the Black Sea region, the ports blockades, increased defense spending and military potential, including by EU countries and other "players" of the global food market.

The crisis that arose during the COVID-19 pandemic and deepened against the background of russia's military invasion of the territory of Ukraine is today being discussed at all levels by experts and participants of the food chains and systems. The confirmation of efforts to solve problems related to challenges for food security, including global ones, is the holding of events at various levels, both national and international. Since the author has been forced to be on the territory of one of the countries of the European Union after the beginning of the full-scale invasion, I will give, as an example, two significant meetings that are important for solving food security question.

The problems of the Ukrainian economy and ways of its reconstruction after the victory were considered at the

NATURE MANAGEMENT, RESOURCE SAVING AND ECOLOGY

International Conference on Reconstruction of Ukraine, which took place on July 4–5, 2022 in the city of Lugano (Switzerland). Among the \$7.7 billion of investments which was planned for increasing the production of agricultural products with high added value, according to the presented project, \$1.6 billion is planned to be spent on the reclamation of war-damaged lands, and \$1 billion is planned on promoting the transition of the Ukrainian agricultural sector to a «green» vector of development. It is planned to attract \$6.5 billion to rebuild 10,500 Ukrainian agricultural enterprises after the war by 2032.

On the 9th of November, 2023, the Geneva Center for Diplomacy and Conflict Resolution (Switzerland) have hosted the round table «Global food security: crisis and ways to overcome it». The event was held with the support of the International Information and Analytical Agency (Agenzia internazionale di informazione e analisi, Italy) and brought together traders, experts, journalists from the USA, South Africa, Poland, Switzerland, and Ukraine. The participation of representatives of the food market have made a unique opportunity to assess the current situation of the problem, which was artificially created as a result of the war in Ukraine. During the meeting there were presented projects that can become effective ways out of the food crisis.

Taking into account all above facts, it should be noted that among the main tasks that Ukraine will face to in the nearly future and after our Victory is the improvement of product security in accordance with the requirements of international standards; development of social infrastructure of rural areas; adaptation of domestic agribusiness to European and international requirements; support of small and medium-sized businesses; creation of conditions for the transfer of the agricultural sector to the principles of sustainable production [15–16].

References:

- [1] Transforming Our World: The 2030 Agenda for Sustainable Development. URL: <https://www.ua.undp.org/content/ukraine/uk/home/library/sustainable-development-report/the-2030-agenda-for-sustainable-development.html> [in Ukrainian].
- [2] Decree of the President of Ukraine «On the National Security Strategy of Ukraine» dated February the 12th, 2007, No. 105/2007. URL: <https://www.president.gov.ua/documents/1052007-5496> [in Ukrainian].
- [3] Decree of the President of Ukraine «On the decision of the National Security and Defense Council of Ukraine «On the new edition of the

NATURE MANAGEMENT, RESOURCE SAVING AND ECOLOGY

- National Security Strategy of Ukraine» dated June the 8th, 2012, No. 389/2012. URL: <https://www.rnbo.gov.ua/ua/Ukazy/303.html> [in Ukrainian].
- [4] On the decision of the National Security and Defense Council of Ukraine dated May the 6th, 2015 «On the National Security Strategy of Ukraine»: Decree of the President of Ukraine dated May the 26th, 2015, No. 287/2015. URL: <https://zakon.rada.gov.ua/laws/show/287/2015#n2> [in Ukrainian].
- [5] The National Security Strategy of Ukraine «Human security - country security» : approved by the Decree of the President of Ukraine dated September the 14th, 2020, No. 392/2020. URL: <https://www.president.gov.ua/documents/3922020-35037> [in Ukrainian].
- [6] Kernasyuk Y. Global food security: old problems, new challenges and effective solutions. *Growhow.in.ua*. The 28th of June, 2022. URL: <https://www.growhow.in.ua/hlobalna-prodovolcha-bezpeka-stari-problemy-novi-vyklyky-ta-efektyvni-rishennia/> [in Ukrainian].
- [7] The State of Food Security and Nutrition in the World 2022. Repurposing food and agricultural policies to make healthy diets more affordable. FAO, IFAD, UNICEF, WFP and WHO. 2022. Rome, FAO. <https://doi.org/10.4060/cc0639en>.
- [8] FAO. 2022. World food situation. URL: www.fao.org/worldfoodsituation.
- [9] The State of Food Security and Nutrition in the World 2020. Transforming food systems for affordable healthy diets. FAO, IFAD, UNICEF, WFP and WHO. 2020. Rome, FAO. URL: <https://doi.org/10.4060/ca9692en>
- [10] FAO. 2022. Information Note - The importance of Ukraine and the Russian Federation for global agricultural markets and the risks associated with the current conflict. Rome. URL: www.fao.org/3/cb9236en/cb9236en.pdf
- [11] FAO, IFAD, UNICEF, WFP and WHO. 2023. The State of Food Security and Nutrition in the World 2023. Urbanization, agrifood systems transformation and healthy diets across the rural-urban continuum. Rome, FAO. <https://doi.org/10.4060/cc3017en>
- [12] Food and Agriculture Organization of the United Nations. Official web-site. URL: <https://www.fao.org/home/en>
- [13] Trofimtseva O. (2022). The war showed the importance of the agricultural sector. How to take new heights? URL: <https://interfax.com.ua/news/blog/839762.htm> [in Ukrainian].
- [14] Negrei M. V., Taranenko A. A., Kostenko I. S. (2022). Agrarian sector of Ukraine in the conditions of war: problems and prospects. *Economy and society*, Iss. 40. DOI: <https://doi.org/10.32782/2524-0072/2022-40-38>. [in Ukrainian].
- [15] At the summit in Malta, the Ministry of Economy named the steps to achieve global food security. 30.10.2023. *RadioEra*. URL : <https://radioera.com.ua/na-samiti-v-malti-minekonomiki-nazvalo-kroki-dlia-dosiagnennia-globalnoi-prodovolchoi-bezpeki/> [in Ukrainian].
- [16] Dyudyayeva O.A., Tkachuk S.O. (2023). Food security: current state and challenges: materials of the 6th International Scientific and Practical Conference [*Ecological state of the environment and rational use of nature in the context of sustainable development*]. (October 26-27, 2023, Kherson-Kropivnytskyi). Kherson: Oldi+. 67-71 [in Ukrainian].