

**FACTORS OF INFLUENCE ON THE DEVELOPMENT OF ORGANIC  
LAND USE UNDER THE CONDITIONS OF MARITAL LAW**

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**Abstract.** *The importance of increasing the pace of production of organic products has been proven, since traditional technologies used in the production of agricultural products significantly disrupt the natural balance and cause significant environmental problems (disruption in ecosystem chains, environmental pollution, man-made pollution caused by military actions, deterioration of people's health). It was found that a number of highly developed countries that cooperate with Ukraine on various projects and programs are involved in this process. An in-depth study of the field of organic land use in Ukraine under the conditions of military operations made it possible to identify existing problems and assess their impact on the development of this segment of activity. A number of restraining factors affecting the development of organic land use have been identified, one of the determining factors being the creation of an appropriate institutional environment. The need for the development of land management projects regarding the organization of organic land use territory is substantiated. Incentives are presented as motivating factors for both consumers and producers of organic products (incentive payments to economic entities, introduction of free pricing for manufactured products, introduction of preferential taxation and preferential loans, obtaining the possibility of conducting certification in a remote format, etc.) despite the military situation in the country Potential factors for development and development of organic land use are also proposed. The given triad*

*of factors can be implemented logically and sequentially and to a large extent simultaneously.*

**Key words:** *organic land use, organic farming, traditional farming, influencing factors, land management project, martial law.*

**Problem statement.** The global agri-food market at the end of the last century and the beginning of the present century combined a triad of applied technologies for the production of agricultural products. It is about traditional technologies, organic farming and cultivation of genetically modified products.

Great Britain became the country where the organic movement was started (in the 1940s). In Lady Eva Balfour's scientific work "Living Earth" the term "organic" was mentioned for the first time, the characteristics of organic and traditional farming methods were given, and their comparison was made [1].

The importance of increasing the pace of production of organic products is very high, since traditional technologies used in the production of agricultural products significantly disrupt the natural balance and cause significant environmental problems. We are talking about disruptions in ecosystem chains, environmental pollution and, most importantly, deterioration of people's health. To correct the existing situation, humanity has to use ecologically safe (alternative) methods of farming, such as: organic farming; biointensive mini-agriculture; biodynamic agriculture; precision farming; regenerative agriculture, etc. The most widespread method in the world is considered "organic farming" because it is based on the principles of preserving people's health, the environment, biological synergy, etc. Alternative agriculture is, first of all, the ethics of attitude to the land, a new approach in farming.

The strategy of the European Union "From farm to fork" within the framework of the European Green Deal determined that by 2030, organic products should be produced on 25% of agricultural land. How does this apply to Ukraine? The relationship is simple: a number of highly developed countries cooperate with Ukraine on various projects and programs. In particular, the Project "German-Ukrainian cooperation in the field of organic agriculture" (2020-2023); European Union project

"Supporting the implementation of agricultural and food policy in Ukraine" (2016); Swiss-Ukrainian program "Development of trade with higher added value in the organic and dairy sectors of Ukraine" (2019-2023) [2; 3].

An important factor in the organization and development of organic land use is compliance with the norms and standards of ecological farming, taking into account the requirements of the International Federation of Organic Agricultural Movement (IFOAM) and the creation of an appropriate institutional environment in Ukraine. In accordance with this, encouraging incentives for the development of a new market segment - the transition to organic land use - should work. This will be a motivating factor for both the consumer and the producer of organic products despite the military situation in Ukraine.

**Analysis of the latest scientific research and publications.** The study of problems related to the field of organic production on the domestic market, and the study of the basics of ecologically safe and organic agricultural production have always been in the field of view of many scientists, in particular: V. Artysh [4], V. Budziak [5], V. Kyporenko [6], V. Chudovska [6], O. Shkuratov [6] and others. Issues related to the organization of the territory of agricultural enterprises for the production of organic products, related to compliance with the requirements of IFOAM standards and rules, legal support for the organization of organic land use were studied by A. Barvinsky [7; 8], Y. Dorosh [7], O. Dorosh [7; 9], D. Melnyk [7] and other scientists. Thanks to the work of scientists, there is a scientific basis for the development of organic land use as an important tool for achieving environmental safety in agricultural land use. However, issues related to organic land use under martial law require more detailed study.

**The aim of the study** — in-depth study of the field of organic land use in Ukraine in the conditions of military operations, identification of problems and assessment of their impact on the development of this segment of activity and provision of proposals to prevent negative trends in the organic farming.

**Materials and methods.** To realize the goal of research, we used general and special scientific methods, which include: monographic, analysis and synthesis,

system-analytical, and generalization methods. The application of the mentioned methods made it possible to achieve results and to substantiate them scientifically.

**Research results.** In view of the goals set by the National Economic Development Strategy of Ukraine for the period until 2030, it is envisaged to reach the share of agricultural land on which organic products are produced in 3% of their total area, which is 1.26 million hectares, and to increase the annual export of these products in the amount of about \$1 billion [10; 11]. And this is for a country with high land-resource potential, while the Strategy of the European Union defines that by 2030, organic products should be produced on 25% of agricultural land.

We must answer the question of the importance of Ukraine's transition to the organization and development of organic land use. This is primarily related to the level of environmental pollution, the main polluters of which over the past decades have been industry, transport, agriculture (currently a new type of soil pollution has been added - man-made as a result of military operations) on the territory of our state. After all, more than 2 million hectares of land, or 5% of the land fund of Ukraine, were damaged. According to various estimates, direct asset losses in agriculture currently reach more than \$6 billion and more than \$30 billion - total losses [12]. According to preliminary calculations by the Kyiv School of Economics, the cost of land reclamation due to damage to the fertile soil layer is estimated at \$39.6 million, which will last for decades. In most cases, damaged lands will not be rehabilitated, but will need to be withdrawn from agricultural use.

The organization of organic land use for agricultural producers requires the fulfilment of a number of requirements. It is about the refusal to use pesticides, herbicides, fungicides and artificial fertilizers with the simultaneous use of animal and plant waste as fertilizers, biological means of plant protection, the introduction of crop rotations to restore the soil, the use of manual labour for the care of agricultural crops, the maintenance of a closed cycle “plantation-animal husbandry”, compliance with mandatory livestock grazing without the use of synthetic additives, hormones and antibiotics in their diet. In case of non-compliance with these requirements, the following economic sanctions should be applied to entrepreneurs: introduction of a

system of fines, reduction of prices for contaminated products, increase of land fees, etc.).

At the same time, organic production also has disadvantages, such as: biological preparations are not sufficiently effective, which is why the problem of pests and diseases remains open; there is a need to expand the areas for sowing; the production process is more expensive than the traditional one, which is due to the availability of special equipment, strict adherence to technological processes, etc. the cost of organic products is higher than conventional products.

In Germany, for example, the price of organic products in relation to conventional products exceeds 1.4 times (minimum indicator) and increases to 2.9 times (maximum indicator). Characterizing the livestock industry, the price for veal is 1.76 times higher and 1.87 times higher for pork [6].

The economic efficiency of growing agricultural crops (winter wheat and spring barley) by organic and traditional methods is shown in the table 1.

**Table 1.**

**Comparison of the economic efficiency of growing winter wheat and spring barley by organic and traditional methods [13]**

	Deviation, %			
	Winter wheat		Spring barley	
	Traditional method	Organic method	Traditional method	Organic method
Productivity, c/ha	100	64.3	100	111.23
Costs per hectare, UAH	100	77.8	100	63.3
Profit per 1 ha, UAH	100	109.4	100	186.29

The given data show that despite the fact that the yield of winter wheat grown under organic farming is lower, at the same time the profit obtained from its sale is higher, and the costs associated with the cultivation of 1 ha are lower. The yield of spring barley when using organic production technologies exceeded that of conventionally grown barley, and the profit from its sale almost doubled.

At the same time, the organic agriculture continues to develop thanks to systematic scientific research in the direction of the development of technologies and the development of more effective biological preparations, which indicates its superiority over traditional.

Accordingly, we analysed the dynamics of area changes under organic land use during 2017-2022.

Looking at the dynamics (2017-2021) of the area under organic land use, we note that there is a trend towards their growth and slight decline. In 2017-2019, this indicator grew and, accordingly, amounted to 289 thousand hectares; 309 and 468 thousand hectares, and in 2020-2021 it was 462 and 422 thousand hectares, respectively. As of the beginning of 2022, the area under organic land use was 422,000 hectares (133,000 hectares more than in 2017). Since the beginning of the full-scale war, more than 120 thousand hectares of these lands have been lost (we are talking about territories under occupation and territories of hostilities), the lion's share of which falls on Khersonska (about 81.5 thousand hectares) and Zaporizhska (about 44.5 thousand hectares) Oblasts. On the lands liberated from occupation at the beginning of April 2022, the activities of enterprises focused on the production of organic products have practically resumed [14].

Despite this, with such indicators, Ukraine is among the top-25 countries in the world and the top-20 countries in Europe in terms of the available area of organic land [15].

As of 2020, there are 722 organic market operators in Ukraine, of which 544 are certified organic producers. Compared to 2006, we have a positive trend, because their number has increased almost 7 times. The most productive years were 2018 and 2020. In 2021, there were 528 organic market operators (a slight decrease), including 418 certified agricultural producers according to a standard that meets both EU organic legislation and NOP (USA). This indicates the Ukrainian producer's interest in organic production [16].

As of 2022, the production and processing of organic products in Ukraine was provided by 473 enterprises, which were mostly engaged in the cultivation of grain

and vegetable crops and cattle breeding. As a result, cereal products, flour, seeds, pasta, beverages, milk, eggs, oil, sugar, etc. were produced. Despite the military actions and their consequences, organic producers will not stop their activities in 2022. However, due to the hostilities, about 30% of operators have suspended their activities and about 15% are on the verge of stopping (the lion's share of which is in Khersonska and Zaporizhska Oblasts, and in Kharkivska Oblast these productions have been destroyed). Due to the destroyed logistics, the export volume of organic products also decreased by 5 times [17].

Despite this, we must build our own model for the development of organic production in the country in order to achieve better results in this area and keep as many producers as possible in Ukraine, for which we must develop plans to support producers based on material and non-material incentives.

Financial stimulation of producers of organic products is the most effective means on the part of state management bodies when implementing the following measures: 1) allocation of funds for their support at the stage of transition to such production at the rate of 1 ha; 2) allocation of funds per head of cattle; 2) provision of subsidies for promotions and advertising in the amount of 50% of the cost of promoting such products by manufacturers; 3) crop insurance; 4) the pricing system should be formed taking into account the premium for the production of organic products; 5) funding of research works; 6) reimbursement of the cost of certification (partial). It would also be appropriate to allocate prize funds (in monetary equivalent) for the promotion of organic production, etc., from local budgets.

An effective mechanism for the development of organic land use from an economic point of view would also be the introduction of free pricing for manufactured products and their transportation by their own logistic routes. This will partially offset the costs of purchasing organic certified seeds, biological protection agents, applying organic fertilizers, marketing costs, etc. The introduction of preferential taxation (primarily for enterprises that implement new innovative technologies for the production of organic products at their own expense) and preferential loans (financed by banks of producers of organic products) would also become motivating tools for

supporting organic producers. It is appropriate to introduce so-called “tax holidays” for producers of organic products (primarily for those located near the occupied territories) during martial law, which would allow them to endure the conversion period. Considering the state of war, there is a need to provide the possibility to conduct certification remotely and to facilitate obtaining a certificate without checking products according to a shortened procedure, which should be facilitated by regulatory bodies and owners of standards.

It would be appropriate to introduce non-material incentives as well (it is about assisting producers of organic products in the organization of **organic production clusters** and supporting them in the sale of products according to established logistics).

In this regard, a consistent state policy should be conducted at all levels in terms of forming the legislative framework, implementing a number of regulatory measures, and most importantly, ensuring the development of state and regional programs in this area.

Taking into account the fact that for Ukraine the transition to organic land use is a new market segment (especially in the conditions of martial law), the encouraging factors of influence for its development should become effective, prevent the further spread of restraining factors influence, and, as a result, potential factors of its development should be realized (Table 2).

*Table 2*

**Factors influencing the development of organic land use under martial law**

Factors influencing the development of organic land use under martial law
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<b>Encouraging</b>	<p>World trends in the development of organic production and its popularization as a healthy way of life.</p> <p>The possibility of independent choice of consumption of products grown according to traditional technologies or organically grown products.</p> <p>The cost of organic products is higher than conventional products.</p> <p>Incentive payments to business entities for the production of organically grown products and the use of safe production technologies.</p> <p>Introduction of free pricing for manufactured products and their transportation by own logistics routes.</p> <p>Introduction of preferential taxation for enterprises that will implement new innovative technologies for the production of organic products at their own expense.</p> <p>The introduction of soft loans (financed by banks for producers of organic products) would become a motivating tool for supporting organic producers.</p> <p>Providing the opportunity to conduct certification in a remote format and assistance in obtaining a certificate without checking products according to a shortened procedure with the assistance of regulatory bodies and owners of standards.</p>
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<b>Restraining</b>	<p>Insufficient development of institutions related to the field of organic land use.</p> <p>Lack of special state and regional programs in this area.</p> <p>Underfunding of fundamental and applied research.</p> <p>Absence in the legislative field of development of land management projects regarding the organization of organic land use territory (land ownership).</p> <p>The imperfection of the national system of organic certification and inconsistency with world standards.</p> <p>The production process is more expensive than the traditional one, which is due to the availability of special equipment, strict adherence to technological processes, and the cost of biological preparations.</p> <p>Insufficient support of the investment project from the authorities.</p> <p>The imperfection of organizational marketing tools.</p> <p>Reduction of the export volume of organic products (by 5 times) in the war zones due to destroyed logistics.</p> <p>Risks of loss of products (investments) as a result of hostilities or occupation.</p>
<b>Potential</b>	<p>The development of technologies and the development of more effective biological preparations on a global scale.</p> <p>Availability of own model of development of organic production in the country to improve results in this area.</p> <p>The possibility of obtaining additional profit for the manufacturer obtained as a result of the investment.</p> <p>Growing demand in domestic and foreign markets</p> <p>Raising the awareness of consumers and forming the foundations of a healthy lifestyle.</p> <p>Assisting in the reproduction of soil fertility, improvement of the environment, ensuring the preservation of biodiversity in the region of organic land use.</p> <p>Revitalization of rural areas by creating additional places of employment.</p>

**Conclusions.** In order to achieve an effective model of management and production of organic products in Ukraine, we must combine economic growth, raise the standard of living in society with the simultaneous improvement of the environment. In order to obtain high-quality ecologically safe products, we must create an appropriate institutional environment (standards, rules, requirements, etc.) in the field of organic production, which will allow organic land ownership and land use to function properly. It is important to introduce changes to the Law of Ukraine “On Land Management” and provide for the development of land management projects regarding the organization of organic land use territory (land ownership).

Taking into account the fact that for Ukraine the transition to organic land use is a new market segment (especially in the conditions of martial law), the encouraging factors of influence for its development and development should become effective, prevent the further spread of restraining factors of influence in this sphere, and, as a result, potential factors for its further development should be implemented.

### References

1. Lady Eve Balfour (1948). The living soil. Faber & Faber Ltd. URL: <https://handoutset.com/wp-content/uploads/2022/06/The-Living-Soil-Lady-Eve-Balfour-.pdf>.
2. Farm to fork strategy (2020). European Commission. URL: [https://food.ec.europa.eu/system/files/2020-05/f2f\\_action-plan\\_2020\\_strategy-info\\_en.pdf](https://food.ec.europa.eu/system/files/2020-05/f2f_action-plan_2020_strategy-info_en.pdf).
3. Organic production in Ukraine (2022). Ministry of agrarian policy and food of Ukraine. URL: <https://minagro.gov.ua/en/napryamki/organic-production/organichne-virobnictvo-v-ukrayini>
4. Artysh V.I. (2010). Udoskonalennia systemy derzhavnoho rehuliuвання vyrobnytstva orhanichnoii produktsii v Ukraini [Improvement of the system of state regulation of production of organic products in Ukraine]. *Scientific Bulletin of the National University of Life and Environmental Sciences of Ukraine*. 145. 365-370. URL: [http://www.nbu.gov.ua/Portal/chem\\_biol/nvnau/2010\\_145/10avi.pdf](http://www.nbu.gov.ua/Portal/chem_biol/nvnau/2010_145/10avi.pdf)

5. Budziak V.M., Budziak O.S. (2012). Ekolohizatsiia zemlekorystuvannia [Greening of land use]. *Scientific Bulletin of the National University of Life and Environmental Sciences of Ukraine*. 4. 34-37.
6. Chudovska V.A., Shkuratov O.I., Kyporenko V.V. (2016). Ekoloho-ekonomichnyi mekhanizm rozvytku orhanichnoho silskoho hospodarstva: teoriia i praktyka: Monohrafiia [Ecological and economic mechanism of development of organic agriculture: theory and practice: Monograph]. Kyiv: LLC “DKS-Center”. 332.
7. Dorosh Y., Barvinskyi A., Dorosh O., Melnyk D., Vysidalko A. (2021). Regulatory and legal support of organization of organic land use and ways of its improvement. *Land Management, Cadastre and Land Monitoring*. 3. 40-50. DOI: <http://dx.doi.org/10.31548/zemleustriy2021.03.05>
8. Dorosh O., Barvinskyi A., Kolisnyk H., Svyrydova L. (2020). Scientific and methodological approaches to the development of experimental land management projects for the organization of the territory of state scientific institutions and enterprises for the production of organic products. *Land Management, Cadastre and Land Monitoring*. 2-3. 136-148. DOI: <http://dx.doi.org/10.31548/zemleustriy2020.02.14>
9. Dorosh O., Sokhatska M. (2023). Svitovi tendentsii vedennia orhanichnoho zemlerobstva [World trends in organic farming]. *Collection of Scientific Papers «ΛΟΓΟΣ»* (March 3, 2023; Bologna, Italy). 50-52. DOI: <https://doi.org/10.36074/logos-03.03.2023.14>
10. Natsionalna ekonomichna stratehiia na period do 2030 roku [National economic strategy until 2030] (2021). Cabinet of Ministers of Ukraine. URL: <https://www.kmu.gov.ua/storage/app/uploads/public/604/13e/648/60413e6481b69340709542.doc>
11. Organic map of Ukraine (2018). *Official site of the information center “Green Dossier”*. URL: <https://organicinfo.ua/infographics/organicmap2018>
12. Vnaslidok viiny poshkodzhen zaznalo ponad 5% zemelnoho fondu Ukrainy [As a result of the war, more than 5% of the land fund of Ukraine was

damaged] (2022). *Kurkul*. URL: <https://kurkul.com/news/31806-vnaslidok-viyni-poshkodjen-zaznalo-ponad-5-zemel'nogo-fondu-ukrayini>

13. Slyva Yu. (2016). Iak pereity na orhanichne zemlerobstvo? [How to switch to organic farming?]. *Agribusiness today*. URL: <http://agrobusiness.com.ua/agro/idei-trendy/item/8378-iak-pereity-na-orhanichne-zemlerobstvo.html>

14. Statement on the situation in the Ukrainian organic sector (2022). *Organic Initiative*. URL: <https://organicinitiative.org.ua/en/news/statement-on-the-situation-in-the-ukrainian-organic-sector/>

15. Ploshchi zemel z orhanichnym statusom za piat rokiv zrosly na 133 tys. ha [The area of land with organic status increased by 133 thousand hectares in five years] (2022). *Agro Times*. URL: <https://agrotimes.ua/agronomiya/ploshhi-zemel-z-organichnym-statusom-za-pyat-rokiv-zrosly-na-133-tys-ga/>

16. Hvozd O. State regulation of the development of organic agricultural production in Ukraine. Qualification Research Paper (Manuscript). Thesis for a Ph.D. Degree in Economics, specialty 073 «Management». Ivan Franko National University of Lviv. Lviv. 2021. 198. URL: [https://lnu.edu.ua/wp-content/uploads/2021/05/dis\\_hvozd.pdf](https://lnu.edu.ua/wp-content/uploads/2021/05/dis_hvozd.pdf)

17. Chystiy product: tretyna orhanichnykh pidprijemstv ne pratsiuiut v umovakh voiennoho stanu [Green product: a third of organic enterprises do not operate under martial law] (2022). *Agroversy*. URL: <https://agroversy.com/uk/posts/show/cistij-produkt-tretina-organichnih-pidprijemstv-ne-pracuut-v-umovah-voennogo-stanu>

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## **ФАКТОРИ ВПЛИВУ НА ОСВОЄННЯ ТА РОЗВИТОК ОРГАНІЧНОГО ЗЕМЛЕКОРИСТУВАННЯ В УМОВАХ ВІЙСЬКОВОГО СТАНУ**

*Анотація.* Доведено важливість нарощування темпів виробництва органічної продукції, позаяк традиційні технології застосовувані при

виробництві сільськогосподарської продукції суттєво порушують природну рівновагу й спричиняють значні екологічні проблеми (порушення у ланцюгах екосистем, забруднення довкілля, техногенне забруднення спричинене військовими діями, погіршення стану здоров'я людей). З'ясовано, що до цього процесу залучено ряд високорозвинутих країн, які співпрацюють із Україною за різними проектами та програмами. Поглиблене вивчення сфери ведення органічного землекористування в Україні в умовах ведення військових дій дозволило виокремити наявні проблеми й оцінити їх вплив на розвиток цього сегменту діяльності. Виявлено низку стримувальних факторів впливу на освоєння та розвиток органічного землекористування, одним із визначальних є створення відповідного інституційного середовища. Обґрунтовано потребу у розробленні проектів землеустрою щодо організації території органічного землекористування (землеволодіння). Наведено заохочувальні стимули як мотивуючі чинники і для споживачів, і виробників органічних продуктів (заохочувальні виплати господарюючим суб'єктам, запровадження вільного ціноутворення на вироблену продукцію, введення пільгового оподаткування та пільгових кредитів, отримання можливості проведення сертифікації в дистанційному форматі тощо) незважаючи на військовий стан в країні. Запропоновано й потенційні фактори освоєння та розвитку органічного землекористування. Наведена тріада факторів можуть реалізовуватися логічно-послідовно та значною мірою й одночасно.

**Ключові слова:** органічне землекористування, органічне землеробство, традиційне землеробство, фактори впливу, проект землеустрою, військовий стан