

**MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE
NATIONAL UNIVERSITY OF LIFE AND ENVIRONMENTAL
SCIENCES OF UKRAINE**

**INCLUSIVENESS OF AGRI-FOOD SECTOR
OF UKRAINE: FEATURES, THREATS AND
OPPORTUNITIES FOR IMPLEMENTATION
IN THE CONTEXT OF INSTABILITY**

*Edited by
corresponding member of NAS of Ukraine
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The monograph is devoted to the issues of inclusive development of the agri-food sector of Ukraine, statistical analysis of Ukrainian agriculture, identification of threats to the country's food security and opportunities provided by the state for enterprises in this area; the issue of inclusive development is also investigated, a study was conducted on the impact of crisis phenomena and global trends on the activities of small and medium-sized businesses in the agri-food sector of Ukraine, and the possibilities and significance of the European Green Deal for the domestic agri-industrial complex are identified.

The monograph can be recommended to scientists who study the issues of inclusive development of the agri-food sector, graduate students, students, as well as practitioners in this field.

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FOREWORD

The current state of Ukraine's economy reflected the importance of the agro-industrial sector for its sustainable functioning, which became particularly relevant in the conditions of a full-scale war. The importance of agriculture for our country is not an exaggeration, because in the conditions of limiting the possibility of supplying grain to the world, a real threat to global food security has arisen. Ukrainian sea transport routes were blocked by Russia, which made it impossible for us to fulfill our contractual obligations at a certain stage. In such a situation, there was a threat of famine in the world, and in Ukraine decreased cash receipts for collected and unsold products. But the threat of food security arose not only for the whole world, but also for Ukraine itself, since a large part of the land was or still is under occupation. Part of the lands that were freed were mined or because of the military actions that were conducted on this territory, they are not suitable for agricultural activities. Also, a significant share of agricultural land is located within the zone of active hostilities, which also makes safe agricultural activity impossible. This has significant negative prospects both for the economy of Ukraine itself and for the well-being of the population in general, its social development.

Under these conditions, it becomes important to provide farmers, the rural population, subjects of agricultural

entrepreneurship of various sizes with possible means to preserve their capacities or open new ones. Considering the large wave of migration, including migration within the country, it is necessary to provide opportunities for all sections of the population to maintain their standard of living as much as possible in the conditions of war.

The development of small and medium-sized enterprises becomes the opportunity that will allow the country's economy not to suffer significant economic losses as a result of the war, since it is precisely such enterprises that create jobs, solve the problem of self-employment of the population, are interested in the created quality products due to competition in the market, etc. The creation of a product that becomes scarce due to limitations in production is also positive in stimulating the development of agricultural entrepreneurial activity. The problem of lack of saturation of the market in the period of crisis always has a concomitant problem of a significant increase in the price of scarce products, which further exacerbates the social crisis in society.

Supporting farmers or simply the rural population is also important, because giving them the opportunity to resume the production of various agricultural crops solves the problem of providing oneself with food products, which is the prevention of hunger in the country. In addition, surplus products can be sold in the market and will increase the supply, which will create the basis for setting a fair, not inflated, price for products.

That is why, in the conditions of the war, as well as those challenges that preceded the war, we consider it important to study the development of the agro-industrial sector in Ukraine, so that in the future it will be possible to form directions for the post-war development of this sector. In this, it is important to observe inclusiveness, because inclusive development is balanced and full-fledged. Consideration of human interests is the basis for the formation and implementation of the policy of inclusive development. It is important not only to focus on economic indicators, but also social indicators that reflect the quality of life of the population, their living conditions. Moving to agriculture with inclusive growth, one can also add to the above orientation to the Sustainable Development Goals, orientation to which make agriculture more responsible, oriented to people and the environment.

The purpose of this monograph was to study the theoretical, methodological and practical foundations of inclusive development of the agri-food sector of Ukraine, identify features, threats and opportunities under instability.

The first chapter examines the genesis of approaches to the inclusive economic development, provides approaches to assessment of inclusiveness and classification of countries, presents institutional prerequisites and support of inclusive development of agrarian sector; emphasises importance of sustainable development for agri-food sector and benefits of its implementation in this sector.

The second chapter reveals peculiarities of the development of economy and food security under the war in Ukraine, highlights the role of FAO in ensuring Ukrainian food security, conducts investigation of the development of agri-food sector in these circumstances and main factors that affect inclusive development of agricultural SMEs.

The third chapter analyses opportunities and prospects for Ukrainian agro-industrial sector in the modern conditions: it is provided state investment support for enterprises of this sector; highlighted opportunities, challenges and benefits that Ukraine can face to implementing Green Deal; mentioned importance of social and youth entrepreneurship for inclusive development and main directions of interaction of sustainable development and social responsibility of agricultural enterprises.

Taking into consideration the challenges that have arisen before the agro-industrial sector of Ukraine, it is necessary to take all possible measures for its development on the basis of inclusiveness for the full protection of both the rural producer and the population of our country.

CHAPTER 1. INCLUSIVENESS IN THE CONTEXT OF SUSTAINABLE DEVELOPMENT: PECULIARITIES OF IMPLEMENTATION IN THE RURAL SECTOR OF UKRAINE

1.1. The genesis of approaches to the inclusive development of the economy

The first step towards the conceptualization, analysis and implementation of social inclusion was the UN report “Building an inclusive society: practical strategies for promoting social integration” of 2007. It cites the definition of an inclusive society – as a society for all, in which every person, with his rights and responsibilities, plays an active role (World Summit for Social Development, Copenhagen, 1995). An inclusive society is based on reasonable values of justice, equality, human dignity, rights and freedoms, as well as principles of inclusive diversity. A society for all provides appropriate mechanisms that allow its citizens to participate in decision-making processes that affect their lives and ultimately shape their shared future.

The basic foundations of the concept of inclusive sustainable growth were developed by the Commission on Growth and Development of the World Bank in the report “The growth report. Strategies for Sustained Growth and Inclusive Development” from 2008. As noted, the emphasis on sustainable growth is made not because it is the ultimate goal, but because growth is necessary to solve problems that concern people: it is poverty reduction,

employment, education, health, opportunities for creativity. Growth is a necessary and possibly sufficient condition for giving people a better chance of becoming productive workers and creative individuals. The exclusion of some part of the population - based on gender, age, ethnicity – leads to the loss of the abilities that these people have (R. Solow).

The European document “EUROPE 2020. A European strategy for smart, sustainable and inclusive growth” focuses on sustainable development, inclusiveness in terms of employment, social and territorial harmony.

The principles of inclusiveness are reflected in the UN program “Sustainable Development: Goals and Agenda 2030”, which is a guide for actions for governments and citizens of the planet and provides: to overcome poverty in all its forms, to promote well-being and productive employment for all, to ensure universal access to resources (water, energy, ecosystems, etc.) and opportunities for all (inclusive education, innovation, justice, infrastructure, sanitation), reduce inequality within countries and between them.

European Green Deal from 2019 is a new strategy of sustainable and inclusive (following the principle of “leaving no one behind”) growth, which ensures the transition of the EU to a fair and prosperous society, responds to the challenges of climate change and

environmental degradation, and aims to improve the quality of life of current and future generations¹.

Summarizing scientific views and international guidelines, it is possible to indicate the following key principles of inclusive development:

- broad social goals, comprehensive human development;
- reduction of inequality and poverty, participation in income distribution, it is poor people who should benefit from development, ensuring cohesion (*social inclusion*);
- the participation of citizens of all groups in economic life, and not only in the distribution of income, economic development is transformed into increased employment, equality in access to resources and markets (*economic inclusion*);
- receiving benefits by broad sections of the population, especially children, women, and the elderly (*inclusion of vulnerable population groups*);
- participation of citizens in the prudent use of natural resources and environmental protection, implementation of control (*ecological inclusion*);
- formation of equal basic conditions and chances for the life of the population in cities and rural areas, equal distribution of

¹ Communiqué of the Commission to the European Parliament, the European Council, the European Economic and Social Committee and the Committee of the Regions. European Green Deal (unofficial Ukrainian translation). Brussels, December 11, 2019. URL : <https://www.rac.org.ua/priorytety/evropeyskyy-zelenyy-kurs/komyunike--com-2019-640-evropeyskyy-zelenyy-kurs-neofitsinyy-pereklad-ukrayinskoyu>

benefits between territories, elimination of disparities, equalization of development of rich and poor countries (*territorial inclusion*);

– if the capabilities of people and the resources of the planet increase the ability to meet human needs in the short and long term, then descendants will receive substantial benefits for sustainable prosperity (*intergenerational inclusion*).

Thus, inclusion is such an organization of life in society, under which:

✓ all people are provided with the opportunity to participate in various spheres of society's life, access to vital spheres - resources, places of work, education, culture, making political decisions that increase their chances for well-being, self-realization, acquiring a higher status, and no person (regardless of from appearance, origin, state of health, gender identity, as well as her place of residence, etc.) does not feel excluded from social processes;

✓ every member of society feels the benefits of economic growth.

We are not talking about a “passive participant” of inclusion (when people benefit from economic growth without actively participating in the increase of income, but only thanks to a partial redistribution of income through various forms of state support), but productive employment in the economy of all population groups is positioned. People, thanks to the creation of better opportunities,

access, chances, can ensure prosperity for themselves and their descendants.

Civilizational development since the 90s of the last century has been oriented towards sustainability, according to the concept of sustainable development recognized by the international community as the dominant concept of the 21st century. This concept, among other principles, envisaged the achievement of equality and social justice; ensuring social self-determination and cultural diversity, which corresponds to the principles of inclusiveness. The UN 2030 Global Sustainable Development Goals were developed based on an inclusive approach. However, the strengthening of imbalances between economic and social progress and resource provision leads to property stratification of the population, gaps in the socio-economic status of residents of cities and villages, unemployment, inequality in access to education, medicine and other basic benefits.

Some scientists, comparing the principles of the concept of sustainable development and the concept of inclusive development, claim that “inclusive development is a new concept that has fundamental differences. Sustainable development ... forms the basis for inclusive development”². Depicting the logic of the transformation of models of economic dynamics - economic growth → sustainable development → inclusive development, it is noted

² Mantsurov I.H. (2018) Inklyuzyvnyy rozvytok yak osnova protydyi hlobal'nym vyklykam s'ohodennya [Inclusive development as a basis for countering today's global challenges]. *Ekonomika Ukrainy*, № 10. Pp. 64, 67, 73 (71-87 p.). (in Ukrainian)

that each subsequent model does not contradict, but harmoniously develops the previous ones.

So is it really “inclusive development - this is a new concept”, which was formed as a result of the transformation of previous concepts, including sustainable development? Is it a complementary component of the concept of sustainable development? It should be remembered that the principles of inclusion, in particular, the achievement of equality and social justice, were already defined by the concept of sustainable development. Therefore, the concept of inclusive development harmoniously fits into the context of the concept of sustainable development (as part and whole), develops, updates and strengthens the socio-economic aspect of sustainable development. In our opinion, inclusion is a zone of intersection of social and economic spheres in the context of sustainable development (Fig. 1), supplemented by indicators of the inclusion of human capital in the assessment of preconditions and results of this development.

The isolation and modern emphasis on the concept of inclusive development once again proves the scale and dynamism of the concept of sustainable development as dominant for social development. In 1992, at the UN Conference on Environment and Development, the basic principles of sustainable development - socio-economic-ecological balance - were recorded at the conceptual level. The process of transition to the model of sustainable development is permanent, the transition from one to

another version of this model is carried out, with the positioning of certain components as priority in a certain time period. After the approval of the concept of sustainable development, special attention was focused on ecological aspects, therefore, it was emphasized the illegitimacy of equating sustainability with environmental safety and the need to strengthen the social component of sustainable development.

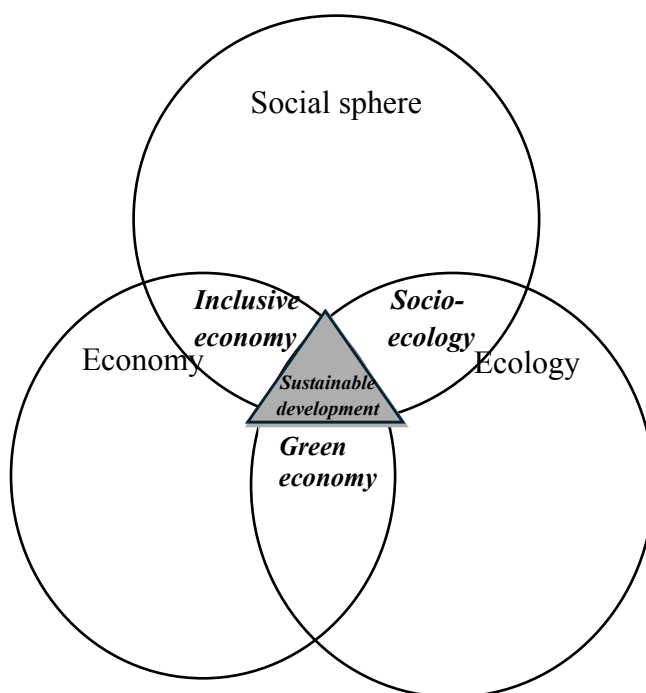


Figure 1. Inclusion as a zone of intersection between social and economic spheres of sustainable development.

Source: adapted and supplemented by the authors based on ³.

³ Popova, O.L. (2009) Stalyy rozvytok ahrosfery Ukrayiny: polityka i mekhanizmy [Sustainable development of the agricultural sector of Ukraine: policy and mechanisms.]. NAN Ukrayiny, In-t ekon. ta prohnozuv. K. P. 20. (in Ukrainian)

It is the concept of inclusive development that strengthens the socio-economic component of sustainable development: people, and all their groups, especially vulnerable, relying on knowledge and innovation, should have chances for livelihood, including economic participation, and should receive benefits from economic growth. Researchers of inclusive topics often use the expression “inclusive sustainable development” to emphasize this aspect. Thus, the priority of this aspect of sustainable development is emphasized as important at the current stage.

In the context of inclusion, the renewal of the triad of sustainable development following the Sustainable Development Goals 2030, namely “people, planet, prosperity” draws attention. That is, people are put first (social component of sustainable development), then planetary problems (ecological) and finally prosperity (economic component). This triad is essentially formulated in the form of a syllogism (a logical conclusion, when two judgments lead to a third). If people (locally, regionally, globally) enjoy the fruits more equitably (access to resources and benefits, justice; broad participation at all levels), have better education and more opportunities (infrastructure, innovation, security, sustainable settlements) and if they manage natural resources in a sustainable way (production and consumption), the result of this is and will be economic prosperity in the long term. By doing so, descendants will be able to reap the benefits for sustainable prosperity, and this is intergenerational inclusion.

A sustainable future for all means human dignity, social integration and environmental protection; this is a future in which economic growth does not exacerbate inequality, but ensures economic prosperity for all, where the living environment and labor markets are designed for everyone to realize their rights and opportunities, and economic activity is ecologically rational⁴.

So, the concept of inclusive development was formed in the process of evolution of the concept of sustainable development⁵, which is dominant in the 21st century. The Sustainable Development Goals 2030, as a concept for the development of global civilization for the coming years, declares the task of ensuring prosperity and a full life for all people. Equity and equality of opportunity is an essential element of sustainable development strategies. The implementation of an inclusive development model will contribute to sustainable growth⁶.

While there is skepticism about the practical reach of inclusion in livelihoods (Box 1), like the Sustainable Development Goals, this does not mean that we should stop striving for their realization. Inclusiveness is a prism through which the authorities

⁴ *Obrazovaniye v interesakh lyudey i planety: postroyeniye ustoychivogo budushchego dlya vsekh.* [Education for People and Planet: Building a Sustainable Future for All.] Vsemirnyy doklad po monitoringu obrazovaniya. Izd. YUNESKO, 2016. (in Ukrainian)

⁵ Popova, O.L. (2020) Inklyuziya – nova kontseptsiya chy onovlena kontseptsiya staloho rozvytku? [Is Inclusion a new concept or an updated concept of sustainable development?] *Ekonomika i prohozuvannya*, № 1. Pp. 128-141. (in Ukrainian)

⁶ Zinchuk, T.O. (2017) Inklyuzivna skladova rozvytku sil's'kykh hromad. Intelektual'na ekonomika v umovakh suspil'nykh transformatsiy: perspektyvy publichno-pryvatnoho partnerstva [Inclusive component of development of rural communities. Intellectual economy in the conditions of social transformations: prospects of public-private partnership]. P. 19. (in Ukrainian)

and citizens of each state should look at existing problems and evaluate actions; these are ideological attitudes for the self-organization of society and its members, business, etc.

Box 1

Increasing inequality: there is such an opinion.

It has long been noticed that a certain phenomenon, including inclusion, appears as a symptom of a disease (non-inclusion), but during the time when no attention was paid to that disease, it progressed rapidly. That is, global imbalances, inequality of development (of countries, citizens in different countries and within countries), stratification of society have become so striking that the international community has formed a strategy of inclusive development to counteract these processes. The effects of economic growth turned out to be insufficient to reduce poverty and unemployment, growth was not transformed into employment growth, although these processes were usually considered to be correlated. The researchers found that if in the 80s of the last century, 3% of GDP growth gave a 1% increase in employment⁷, then in the 90s, 8% of GDP growth gave such a result in terms of employment. Although poverty has been reduced by almost half since 1990, there are still a large number of people living in it.

Inequality and the gap between the rich and the poor have increased, thereby complicating the solution to the task of overcoming poverty: if a 1% increase in income reduces poverty by 4.3% in countries with lower income inequality, it is only 0.6% in countries with greater inequality (according to World Bank research)⁸. Over the past decade, the number of billionaires in the

⁷ Felipe, Jesus and Hasan, Rana (2006). The challenge of job creation in Asia. ERD Policy Brief. Economic and Research Department Series, 44. Asian Development Bank. Retrieved from <https://www.adb.org/publications/challenge-job-creation-asia>

⁸ Ravallion, Martin (2013). How long will it take to lift one billion people out of poverty? Policy Research Working Paper, WPS6325. World Bank. Washington DC. Retrieved from <http://documents.worldbank.org/curated/en/248361468025472051/How-long-will-it-take-to-lift-one-billion-people-out-of-poverty>

world has doubled; at the same time, the financial situation of the poorest people (3.8 billion) did not improve. The great strategist Roosevelt noted back in the 30s of the last century that “our progress is tested not by increasing the prosperity of those who already have a lot, but by whether we are able to sufficiently provide for those who have too little.”

The metaphorical statement, “economic growth is like a tide - lifts all boats” (Deng Xiaoping) does not hold true; Recently, it seems more and more that only yachts are raising the growth. The 21st century will be a period of grand stratification, as the French economist claims; the cost of labor will be less and less, and the capitals of rich people will grow by themselves, they will be inherited, increasing the level of concentration of wealth in parts of people and countries⁹.

Inclusion in business activity is a demonstration of inclusion as an intersection of social and economic spheres in the context of sustainable development. At the same time, social business is most often talked about, which is not justified, since other types of business can be inclusive. Suppose, if the activity is based on the principle of solidarity, for example - when a vulnerable category of agro-food producers - small farmers provide it to vulnerable groups of the population (schoolchildren, low-income families, etc.); when rural households as small tour operators provide tourist products and services to tourists with special needs (both in terms of the physical condition of individuals and their preferences – gastronomic, ecological, cultural tourism).

At the same time, it is necessary to realize that inclusion is a high-value business and sometimes ambiguous. The logic of the

⁹ Piketti T. Kapital u XXI stolitti. [Capital in the XXI century.] Vyd-vo «Nash Format». 2016. (in Ukrainian)

market system is largely subordinated to the need to take into account the individual interests of people to the extent that they serve the goals of this economic system - the extraction of profit. At the same time, as experience shows, not only a significant part of society falls out of the market system (and it is not only the unemployed), but also the interests of working people are largely limited (regarding the level of wages, rewards, proper working conditions, etc.).

Along with meeting the basic needs to ensure the conditions for obtaining education, access to resources and public transport, etc., in the context of inclusion, it is important to provide opportunities for all people to be employed, to reveal their individual abilities. Inclusiveness is associated with flexible labor markets (with minor restrictions on hiring and firing employees), low taxes on entrepreneurship, incentives for innovation, high costs of the state, business, and citizens (for education, professional training, unemployment benefits, health care) and equalizing social policy. The costs of creating, suppose, a workplace for an employee with special needs can sometimes be significantly higher than for a regular employee. The efforts that will have to be made to involve certain vulnerable persons in economic activity may also be incomparable.

In the 2007 UN report “Building an inclusive society: practical strategies for promoting social integration” the following economic aspect of inclusion is noted, namely, the cost of inclusion

is high, but the cost of exclusion and missed opportunities is even higher (we are talking about social conflicts, violence, division of society, etc.)¹⁰.

Some of the positive effects of inclusion are quite obvious, such as social and financial inclusion. However, there are also negative consequences of inclusion, in particular, an increase in card fraud; the imposition of gender ideology, which sometimes results in the underestimation of traditional family values; fixed / facial recognition cameras provided better monitoring of the spread of COVID-19, at the same time - total surveillance; modern communication technologies using the Internet sometimes lead to the distribution of individual data of individuals. Thus, in inclusion, as in any phenomenon, there are "two sides of the same coin" - positive and negative; for example, inclusion as face recognition (China, Singapore and other countries), on the one hand, guarantees safety for people, preservation of things, reduction of theft, etc., on the other hand, it is perceived as an encroachment on human freedom, interference in life.

Inclusion is well perceived by people as the creation of conditions and the presence of chances when each person feels involved, valued, respected, united, included in the general culture, with a sense of belonging (recognition, honors, respect). But it is important for each person to form, "cultivate in him/herself" the

¹⁰ Creating an Inclusive Society: Practical Strategies to Promote Social Integration. Final Report of the Expert Group Meeting / Division for Social Policy and Development, United Nations Department of Economic and Social Affairs. Paris, 65 p.

willingness to be an inclusive person - tolerance, humane attitude, participation, help, leadership, active inclusion in life activities. Undoubtedly, everyone's willingness to be inclusive increases awareness, education, and the formation of the will for an inclusive life.

1.2. Approaches to assessment of inclusiveness and classification of countries

It is worth to pay attention to the study of the methodology by which inclusiveness can be assessed. In the development of previous studies of scientists, we can also give a definition to inclusive growth, which we define as “growth that allows to attract the majority of labor resources to effective economic activity, due to which to provide a higher standard of living for the majority of the population”.¹¹ For a deeper understanding of the inclusiveness of the economy, it is important to consider the methods by which inclusiveness can be assessed.

But before that, we note that inclusive growth itself has an economic foundation in its basis, as well as any socio-economic processes or phenomena, since it is the economic basis that precedes the possibility of balanced, all-encompassing, human-oriented development of any level. A.V. Uniyat and Z.I. Yuzvin in their

¹¹Vlasenko, YU.H. (2019) Mizhnarodni pidkhody do metodyky otsinky inklyuzyvnosti. [International approaches to the methodology of assessment of inclusivity]. *Naukovyy visnyk Uzhhorods'koho natsional'noho universytetu. Seriya : Mizhnarodni ekonomichni vidnosyny ta svitove gospodarstvo*, Vyp. 24(1). Pp.70-74. URL : http://www.visnyk-econom.uzhnu.uz.ua/archive/24_1_2019ua/15.pdf (in Ukrainian)

research cited the components of an inclusive economy, which were determined by them according to the World Economic Forum. We can present these components in Fig. 2.

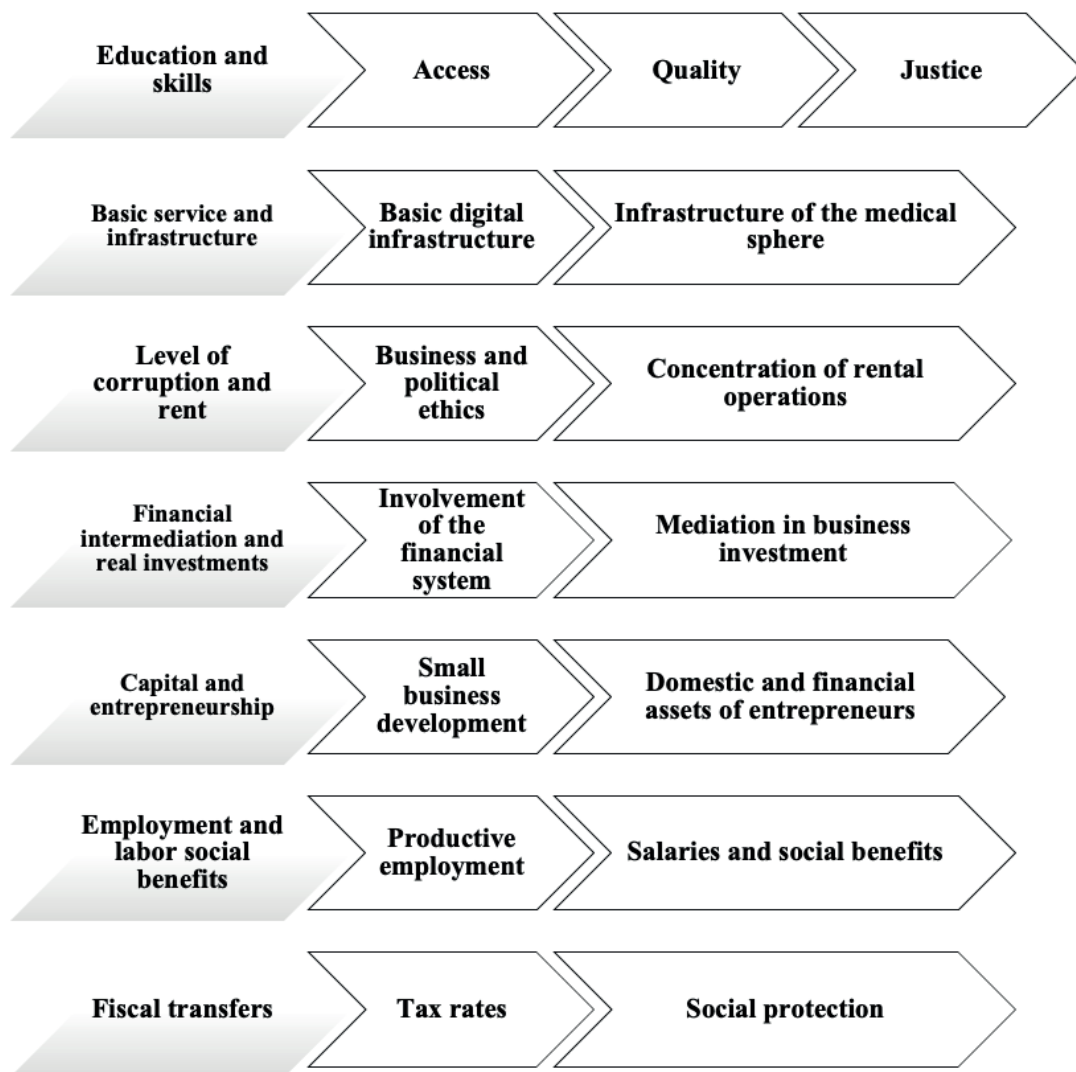


Figure 2. Components of an inclusive economy

Source: compiled by the authors based on Uniyat A.V., Yuzvin Z.I. Kontseptsiya inklyuzyvnoyi ekonomiky v konteksti suchasnoho staloho rozvytku krayin. [The concept of inclusive economy in the context of modern sustainable development of countries]. *Efektivna ekonomika*. 2019. №2. URL: <http://www.economy.nayka.com.ua/?op=1&z=6905> (in Ukrainian)

As we can see, the components of an inclusive economy include various social aspects, such as education, employment, infrastructure, and economic aspects, which include the possibility of small business development, and tax rates, and salary payments, etc. That is, an inclusive economy has a balanced, multifaceted socio-economic development in its essence. It provides the opportunity to fully reveal the potential of people, both individuals and groups of people. Human development contributes to the development of the country as a whole, as it is a mutually determined process where each individual develops on the basis of the benefits created by the state, and, in turn, create new jobs, raise their own standard of living, take advantage of business opportunities, etc.

In our previous researches, we have investigated and presented certain methods, namely the UN inclusive growth assessment method and the IMF inclusive growth assessment method.

First, we will consider the UN methodology, which will be presented in the Fig. 3.

This technique considers indicators that are not purely economic, but socio-economic, that allows to assess not only the level of income and access to economic benefits, but also access to social ones, opportunities to reveal one's potential, etc. A large number of indicators according to this methodology are not quantitative, but qualitative, which is difficult to calculate, but reflects the standard of living in the country, which can represent the real situation.

<i>Related to income:</i>	<ul style="list-style-type: none"> • the share of the population that consumes less than \$2 per day (for PPP in USD); • the ratio of income and consumption of the richest 20% of the population to the poorest 20%.
<i>Not related to income:</i>	<ul style="list-style-type: none"> • average number of years of education (for young and adult population); • infant mortality rate.
<i>Growth and expansion of economic opportunities:</i>	<ul style="list-style-type: none"> • GDP growth rates per capita by PPP (in constant prices); • employment rate; • elasticity of the total number of employed to GDP (elasticity of employment).
<i>Key infrastructure indicators:</i>	<ul style="list-style-type: none"> • electricity consumption per capita; • the share of asphalted roads in the total length of the road network.
<i>Social equality to ensure equal access to economic opportunities, education and health care services:</i>	<ul style="list-style-type: none"> • the number of doctors, nurses and obstetric staff per 10,000 people; • the share of public spending on education and health care from total spending; • the ratio of pupils to teachers in primary school.
<i>Access to social infrastructure services:</i>	<ul style="list-style-type: none"> • share of the population with access to electricity in the total population; • the share of the population that uses high-quality sanitation facilities.
<i>Gender equality and opportunities:</i>	<ul style="list-style-type: none"> • gender segregation in primary, secondary and higher education.
<i>Systems of social guarantees:</i>	<ul style="list-style-type: none"> • the share of spending on social security from state spending on health care and social security.
<i>Effective state administration and public institutions:</i>	<ul style="list-style-type: none"> • quality of public administration; level of corruption.

Figure 3. Inclusive growth assessment indicators according to the UN methodology

Source: compiled by the authors based on Hoekman B. Trade Policy for Inclusive Growth . Policy Dialogue : Redefining the Role of the Government in Tomorrow's International Trade . Geneva : UNCTAD, 2012. URL: http://unctad.org/meetings/en/SessionalDocuments/ditcdir2012d1a_Hoekman.pdf.

One of the methods is also an evaluation method that calculates the Inclusiveness Index of Economic Growth, which was proposed in 2017. A distinctive feature of this index is that it includes 12 different indicators of the country's development, which are divided into 3 groups, namely “growth and development”, “inclusiveness” and “intergenerational succession and sustainability”. In Fig. 4 we present the indicators that measure the Index of Inclusiveness of Economic Growth. Indicators are specified with measurement units.

The Inclusive Development Index (IDI) was an annual economic index that was created as an alternative to GDP in measuring a country's economic growth and development. It is worth noting that this index report was last issued in 2018. We can present its main results in Table 1.

Separately, we note that in 2017, Ukraine took 47th place, and in 2018, it took 49th place in this rating. According to the assessment of the World Economic Forum, Ukraine belongs to the group of developing countries ¹².

¹² Irtysheva, I., Kramarenko, I., Zavorodniy, K. (2023) Otsinka rivnya staloho inklyuzyvnoho rozvytku Ukrayiny. [Assessment of the level of sustainable inclusive development of Ukraine.] *Scientific journal “Modeling the development of the economic systems”*, №2. Pp. 159-165. DOI : <https://doi.org/10.31891/mdes/2023-8-21> (in Ukrainian)

Growth and development

- GDP per capita, US dollars
- Employment, %
- Labor productivity, US dollars
- Expected healthy life expectancy, years

Inclusivity

- Median household income, USD per day
- The Gini coefficient is a stratification of society by income, from 0 to 100
- Poverty level, %
- The Gini coefficient is a stratification of society by level of well-being, from 0 to 100

Intergenerational succession and sustainability

- Adjusted net savings, % (of gross national income)
- Intensity of greenhouse pollution per unit of GDP, kg/US dollar
- Public debt, % (of GDP)
- Demographic load factor, %

Figure 4. Calculation indicators of the economic growth inclusiveness index

Source: compiled by the authors based on Vlasenko, Yu.H. (2019) Mizhnarodni pidkhody do metodyky otsinky inklyuzyvnosti. [International approaches to the methodology of assessment of inclusivity]. *Naukovyy visnyk Uzhhorods'koho natsional'noho universytetu. Seriya : Mizhnarodni ekonomichni vidnosyny ta svitove gospodarstvo*, Vyp. 24(1). Pp.70-74. URL : http://www.visnyk-econom.uzhnu.uz.ua/archive/24_1_2019ua/15.pdf(in Ukrainian)

Table 1. Dynamics according to the Index of Inclusive Development (IDI) and the rating of leaders and “outsiders” according to the international classification of countries in 2013-2018

Countries with developed economies	Countries with developing economies
TOP 5 countries by the level of inclusive development in 2018 and the value of IDI (points)	
1. Norway (6.08)	1. Lithuania (4.86)
2. Iceland (6.07)	2. Hungary (4.74)
3. Luxembourg (6.07)	3. Azerbaijan (4.69)
4. Switzerland (6.05)	4. Latvia (4.67)
5. Denmark (5.81)	5. Poland (4.61)
TOP 5 countries by the growth rate of the level of inclusive development in 2013–2018 (%)	
1. Iceland (12.58)	1. Macedonia (9,24)
2. Ireland (9.28)	2. Latvia (8.60)
3. Denmark (4.76)	3. Tajikistan (8.57)
4. Israel (3.57)	4. Nepal (8.53)
5. Czech Republic (2.88)	5. Hungary (8,10)
Ranking of 5 countries with the highest rates of decline in the inclusive development index and IDI value in 2018 (points)	
11. Finland (5.33)	74. Mozambique (2.47)
19. Slovenia (4.93)	49. Ukraine (3.42)
26. Spain (4.40)	70. Egypt (2.84)
27. Italy (4.31)	72. Malawi (2.81)
29. Greece (3.70)	60. Small (3,10)

Source: compiled by the authors based on The Inclusive Development Index 2018 Summary and Data Highlights . World Economic Forum . URL: http://www3.weforum.org/docs/WEF_Forum_IncGrwth_2018.pdf . (last accessed : 16.03.2020); The Inclusive Growth and Development Report 2017. World Economic Forum . URL: http://www3.weforum.org/docs/WEF_Forum_IncGrwth_2017.pdf . (last accessed : 16.03.2020).

According to the data in the table, countries are divided into groups of countries with developed economies and countries with developing economies. Thus, Norway is the leader in developed countries. Iceland and Luxembourg have a slightly lower result. Switzerland is also among the countries with the highest rate. Iceland closes the TOP 5 leading countries. In developing countries, the leaders are Lithuania, Hungary, Azerbaijan, Latvia and Poland. As you can see, among the 5 countries that are among the leaders according to this indicator, 4 countries are relatively new members of the EU, which joined it in 2004.

Among the countries with the highest growth rate in 2013-2018, it is worth noting Iceland, which currently occupies the second position among developed countries. So is Denmark, which is also in the top 5.

The table also shows that the developed countries with the highest growth rate include Ireland, Israel and the Czech Republic. The presence of the Czech Republic is distinctive here, because countries that are similar to it in terms of economic development and historical heritage in the 20th century (Poland, Hungary, etc.) in this methodology are classified as developing countries.

Among the developing countries, the following growth rates can be noted: Macedonia, Latvia, Tajikistan, Nepal and Hungary. That is, it is obvious that the growth rates of two countries (Latvia and Hungary) allowed them to become leaders in their group of countries.

The table also shows the countries that are the leaders in terms of the rate of decline of the index in the period from 2013 to 2018. Among the developed countries, Finland, Slovenia, Spain, Italy and Greece are listed here. Their rates of decline were equal to – 2.92% in Finland, –2.39% in Slovenia, – 2.12% in Spain, 1.69% in Italy and – 1.69% in Greece ¹³. As we can see, there are countries in which economic decline was observed in the 2000s, namely Spain, Italy and, especially, Greece. In the latter, there is a big problem with youth unemployment, just like in Spain.

Among the developing countries, the highest rates of decrease in the index in 2018 compared to 2013 were noted in Mozambique (-12.38%), Ukraine (-6.80%), Egypt (-6.52%), Malawi (-6.47%) and Mali (-5.71%) . As we can see, Ukraine is among African countries. These rates of decrease in the index are not a positive characteristic for our country, they are a consequence of various crisis situations that took place on the territory of Ukraine, the war that began in 2014, etc. It is the construction of an inclusive economy that can create the foundations that will allow us to develop our country's potential as best as possible.

As already mentioned, the last time the Inclusive Development Index was calculated was in 2018. After that, in 2022, UNCTAD proposed the Inclusive Growth Index (IGI). This organization has

¹³ Vlasenko, YU.H., Vlasenko, T.O. (2020) Klasyfikatsiya krayin na osnovi pokaznykiv indeksu inklyuzyvnoho rozvytku. [Classification of countries based on indicators of the index of inclusive development.] *Vcheni zapysky TNU imeni V.I. Vernads'koho. Seriya: Ekonomika i upravlinnya*. Tom 31 (70). No2. Pp. 57-61. (in Ukrainian)

already noted the limitation of GDP as the main indicator of progress, including social. They noted that higher economic performance is not the same as more inclusive and sustainable growth. That is why there is a problem of measuring and finding those components that influence this growth and which are worth developing for the formation of a stable, developed society. This Inclusive Growth Index measures not only the usual economic indicators such as GDP, but also indicators of living conditions, equality and a sustainable environment. In 2023 this index included such large economies as China and India and currently covers 129 world economies, which represent 93% of the world's population and 96% of the world's GDP. The latest calculations of the Index reflect significant disparities between countries: developed economies perform twice as well as developing economies in the overall index of inclusive growth¹⁴. Table 2 shows the results of this Index for European countries, including and Ukraine, in 2021.

As it is seen, the table presents the overall indicator of the Inclusive Growth Index, as well as its main components, which it takes into account: the economy, living conditions, equality and the environment. As noted on the official website of UNCTAD, these components are the 4 pillars of the Index of Inclusive Growth (the 4

¹⁴ UNCTAD's inclusive growth index underscores the need to move beyond GDP. Official site of UNCTAD. URL : <https://unctad.org/news/unctads-inclusive-growth-index-underscores-need-move-beyond-gdp>

pillars of Inclusive Growth Index)¹⁵. This Index analyzes a country's ability to achieve development with a focus on gender equality and a sustainable environment, and puts people and planet in the spotlight.

Table 2. Inclusive Growth Index of European countries, 2021

Country	General Indicator	Economy	Living conditions	Equality	Environment
Luxembourg	91.8	100.0	89.0	79.9	100.0
Switzerland, Liechtenstein	78.1	66.7	94.4	95.8	61.6
Ireland	76.9	76.8	90.4	79.4	63.6
Denmark	75.9	54.8	97.2	96.0	64.8
Norway	74.4	72.5	94.1	98.2	45.8
Sweden	72.5	55.6	98.7	97.0	51.9
Great Britain	68.7	43.1	93.6	88.2	62.6
Netherlands	68.6	53.5	95.3	92.4	47.0
Finland	67.5	51.9	97.7	100.0	40.8
Belgium	66.3	49.9	100.0	86.4	44.8
Germany	65.7	48.2	94.1	84.7	48.4
Austria	65.6	49.6	88.5	89.9	46.8
France	64.0	40.8	93.8	87.4	50.2
Lithuania	59.0	36.3	80.5	74.9	55.3
Estonia	58.6	39.2	88.1	77.1	44.1
Slovenia	57.9	39.4	85.7	79.3	42.0
Portugal	57.2	30.5	90.4	82.4	47.2
Spain	57.0	33.1	93.0	79.0	43.4
Iceland	56.9	85.5	91.2	95.0	14.2
Cyprus	56.4	38.6	83.7	69.7	44.9
Czech Republic	56.0	37.6	85.7	66.0	46.1
Latvia	55.6	30.3	80.2	72.3	54.3
Italy	55.1	35.1	85.8	63.8	47.8
Slovakia	54.1	34.4	80.9	65.6	47.0
Hungary	52.8	32.5	82.0	65.6	44.3

¹⁵ Inclusive growth remains elusive as inequality persists globally. Official site of UNCTAD. URL : <https://unctad.org/news/inclusive-growth-remains-elusive-inequality-persists-globally>

Croatia	52.7	27.4	79.2	76.5	46.5
Poland	52.7	31.5	82.8	70.0	42.3
Greece	49.0	26.4	87.1	56.5	44.2
Romania	46.7	24.8	71.9	56.3	47.5
Bulgaria	46.5	25.1	75.3	64.7	38.1
Ukraine	32.7	14.2	68.7	57.7	20.3

Source: compiled by the authors based on Inclusive Growth Index (IGI).
 UNCTADSTAT. URL :
<https://unctadstat.unctad.org/datacentre/dataviewer/US.InclusiveGrowth>

In this table we included European countries, mostly the EU, and Ukraine. According to UNCTAD data, the indicator of Switzerland and Liechtenstein is combined. Luxembourg had the highest indicator according to this Index. Moreover, this country had a leading position not only in the above table, but also in general among 129 countries. Luxembourg's score was 91.8, more than 10 points higher than Switzerland and Liechtenstein, that are also world leaders. Such a result of Luxembourg is due to the high standard of living in this country and, of course, the maximum indicators of the economy and the environment. But, if we analyze the result of this country in terms of equality, we will see that it is lower than, for example, in Switzerland. This means that any country can have completely different results based on the components of the Index. If we take Finland as an example, we can see that it is ranked very high by two indicators (living conditions and equality), but the economy and environment indicators significantly reduce its overall score.

The same about Spain, which does not have very high results according to this Index, but the living conditions in it are among the highest. The economy and the environment significantly worsen its situation.

If we analyze this table from the point of view of EU countries, we can see that among the countries that are in the leaders and ahead of others, mainly the countries that became EU members earlier, and those that joined in 2004 and later, received lower indicators. The exceptions are Lithuania, Estonia and Slovenia, which precede other older EU members. Although Greece has one of the lowest positions among the countries represented here.

The position of Ukraine is the lowest among the represented countries, and the overall indicator is 32.7. As we can see from the following components, this is the result of economic processes and the environment. The indicator of living conditions is also the lowest among other countries in the table. And the equality rate is slightly higher than in Greece and Romania. But this does not change the general low indicator of this Index, which indicates the necessary changes in the construction of the country's economy, its social infrastructure, improvement of the situation with the environment and living conditions in the country. We understand that in our country such a low indicator of inclusive growth reflects reality and is exacerbated even in the conditions of a full-scale war, which is why it is necessary to understand the basics of inclusiveness when forming state policy in various sectors. This also

applies to agriculture, which plays an important role in the functioning of the economy in the conditions of modern global challenges that Ukraine has faced. Inclusiveness means giving everyone equal access to markets, resources, fair and equal conditions for businesses and individuals. It is also noted that the main focus in an inclusive economy should be not so much on the usual distribution of income, but more on the creation of productive employment of the population. The main factors affecting inclusive growth are:

1. Inequality.
2. Social alienation.
3. Poverty.
4. Disproportions.
5. Movement ¹⁶.

It is these factors that we must take into account when formulating the policy of inclusive development of any industry or economy in general. And analyzing these factors, we understand that the development of agriculture at this time is itself under their great influence, when a large number of farmers had to leave their homes and production facilities and move, which, in turn, caused changes in well-being and increased even more those disparities that exist in our society.

¹⁶ Inclusive Growth: Limiting Factors, Policy Measures. URL: <https://www.nextias.com/blog/inclusive-growth/>

1.3. Institutional prerequisites of inclusive development of agrarian sector

The question of the essence and structure of the institutional component of the agrarian sector does not receive enough attention on behalf of researchers despite the fact that the agrarian sector as a basic sector of domestic economy and a key one for providing food security has to be studied and developed in the frames of inclusiveness and sustainability which have to be implemented via various institutions. Searching for drivers of the development of the agrarian sector it is necessary to provide adjustment of the research methodology of inclusive growth (including the concept, criteria, indicators, assessment methods, etc.) in accordance with the tasks of sustainable development of the agrarian sector in modern economic conditions. Only inclusive growth will ensure implementation of such important tasks as food independence, physical and economic availability of food for all strata of the population of Ukraine. It becomes relevant to create institutional conditions for inclusive development of the agrarian sector of Ukraine, i.e. to make it oriented at the interests of individuals, small and medium sized agrarian business.

There is a great piece of research of the Ukrainian scientist connected to creating of the institutional environment for providing the inclusiveness of the agrarian sector and of the whole economy of Ukraine. In particular, the problems of inclusive rural development

are raised in the works of Borodina, O., & Prokopa, I.¹⁷ Stepanenko, S. (2023) in his research determines the advantages and disadvantages of inclusive models of agribusiness development. Also there is attention paid to the resource potential of agricultural business in the inclusive economy¹⁸. Vlasenko, Yu., & Kozhyna, A. (2020) determine the ways of formation of inclusive local development¹⁹. Bobukh, I. (2024) considers Ukraine in the dimensions of inclusiveness and institutional development. Shynkaruk, L. et al. (2020) construct models of land relations in Ukraine in the period of institutional transformations.²⁰

However, in our opinion it is necessary to pay attention in the research to determining the institutional prerequisites of inclusive development of agrarian sector.

In the context of the war realities, the Ukrainian agrarian sector is going through a tough period, complicated by huge geopolitical and economic threats. The large-scale aggressive war started by the Russian Federation has had a significant impact on the economy of

¹⁷ Borodina, O., & Prokopa, I. (2019). Inclusive rural development: a scientific discourse. *Economy and Forecasting*, (1), Pp. 67–82. <https://doi.org/10.15407/econforecast2019.01.06> (in Ukrainian)

¹⁸ Stepanenko, S. (2023). Formy ta perevahy inklyuzyvnykh modeley rozvytku ahrobiznesu. [Forms and advantages of inclusive models of agribusiness development.] *Scientific Notes of Taurida National V.I. Vernadsky University. Series: Economy and Management*, 73(2). <https://doi.org/10.32782/2523-4803/73-2-4> (in Ukrainian)

¹⁹ Vlasenko, Y., & Kozhyna, A. (2020). Formuvannya inklyuzyvnoho mistsevoho rozvytku. [The formation of inclusive local development.] *Investytsiyi: Praktyka Ta Dosvid*, (19–20), 46. <https://doi.org/10.32702/2306-6814.2020.19-20.46> (in Ukrainian)

²⁰ Bobukh, I. (2024). Ukrayina u vymirakh inklyuzyvnosti ta instytutsiynoho rozvytku. [Ukraine in the dimensions of inclusiveness and institutional development.] *Economy of Ukraine*, 65(5 (726), Pp. 38–58. <https://doi.org/10.15407/economyukr.2022.05.038> (in Ukrainian)

our country, in particular on its agrarian sector. According to the Ministry of Agriculture, due to the war, the area of land for sowing in 2022 decreased by 3.5 million hectares in the zone of active hostilities. Over the past two years, the agrarian map of Ukraine has undergone significant changes, the production of grain, vegetables and fruits has fallen in our country. As a result of the occupation, Ukrainian farmers lost large areas of land. Another catastrophic consequence of the war was the loss of the ability to export products and earn income²¹.

Because of the war, the usual operational decisions of Ukrainian agricultural companies are also undergoing changes. Such changes consist, first of all, in limiting the use of agricultural resources (for example, fertilizers, pesticides and seeds), business diversification (for example, learning or starting a new business) and changing sales markets (for example, finding new customers). It is also worth mentioning the factors of indirect impact of the war on the agri-food chain of added value. In particular, the number of suppliers of production resources decreased significantly compared to the pre-war period. Such a reduction is a consequence not only of problems with the delivery of the necessary resources, but also of the pricing policy of suppliers, especially in the case of purchases of fertilizers and feed.

²¹ Yak pratsiuie ahraryi biznes v umovakh viiny [How the agricultural business works in the conditions of war] (2022). <https://zn.ua/ukr/ariculture/jak-pratsjuje-ahramij-biznes-v-umovakh-vijni.html> (last accessed : 25.07.2024)

The general structure of sales as a whole remained unchanged, but underwent some adjustments. For example, before the war, most Ukrainian farmers sold their products to wholesalers (who usually sell large batches to other businesses), traders, and processors. After a full-scale invasion, it became more profitable to sell the products of agricultural enterprises to processors. The main problem in this area was the cessation of the work of buyers of products, their inability to purchase pre-war volumes or offer acceptable prices to the manufacturer. According to the World Bank, an average of 18% of all small and medium-sized Ukrainian agricultural producers stopped supplying their products due to low purchase prices²².

In terms of the war social polarization increased, as well as significant differentiation of population groups by the level of physical and economic accessibility of food, ineffectiveness of competition mechanisms, self-regulation, public administration, serious lag in the innovation system and ineffectiveness of investment policy have also posed a threat to sustainable development and in future may lead to serious socio-political risks in the functioning of the agrarian sector.

As a matter of fact, the large-scale military invasion of Russia into the territory of Ukraine changed drastically the system of institutional support of development of the agrarian sector. In fact,

²² Ahrosektor Ukrainy: vplyv viiny ta perspektyvy vidnovlennia [The agricultural sector of Ukraine: the impact of the war and prospects for recovery]. (2023). <https://dlf.ua/ua/agrosektor-ukrayini-vplyv-vijni-ta-perspektivi-vidnovlennya/> (last accessed 25.07.2024)

the whole specter of human needs has changed radically because the Ukrainian society from the consumer type (consumption of products and services) Ukraine has been forced to move to militarization, that means the spread of military laws to civilian areas, in particular to the agrarian sector entities. In connection to the destruction of civil and infrastructure objects throughout the country, forced migration of population caused by hostilities, there were dynamic negative changes in the volumes of production of the agrarian sector caused by the war. Consequently there have been observed changes in institutional and economic conditions including severance of commercial ties with the aggressor country; occupation of the territories where the business operated; migration of the able-bodied female population abroad; women who remained in Ukraine have become forced to pay more attention to children of school and preschool age, and not to work, because children were transferred to distance education; more than a million men of working age left their jobs and went to defend the country. The Ukrainian institutional environment quickly transferred from the consumption-oriented type towards military-oriented type, i.e. there was implemented extension of military laws, norms and rules to civilian areas, in particular to the agrarian sector.

To provide inclusive development of the agrarian sector in current conditions it is necessary to create institutional prerequisites aimed at transformation of the paradigm of economic development through optimization and modernization of economic structure,

ensuring a coordinated solution to economic, social and environmental problems. Among the measures which will reflect the start of expected institutional changes towards the implementation of the inclusive development model of the agrarian sector there can be named stimulating tax and depreciation policy, active use of leasing, development of public-private partnerships in the agrarian sector, credit stimulation measures, opening of land market, acceleration of privatization of state-owned enterprises, digitalization, export support, social support, development of education and other measures (Fig. 5).

Institutional environment normally tends to withdraw most of the resources in favor of individual subjects that have government support. Currently in the Ukrainian agrarian sector, the prior state support belongs to large integrated formations – agrarian holdings, blocking the development of small and medium sized agrarian business, leading to the merging of the interests of the authorities and business, distorting financial flows and competitive environment. It is quite understandable, because large agrarian formations can be more resistible facing the unprecedented threats in comparison to small and medium sized agrarian business.

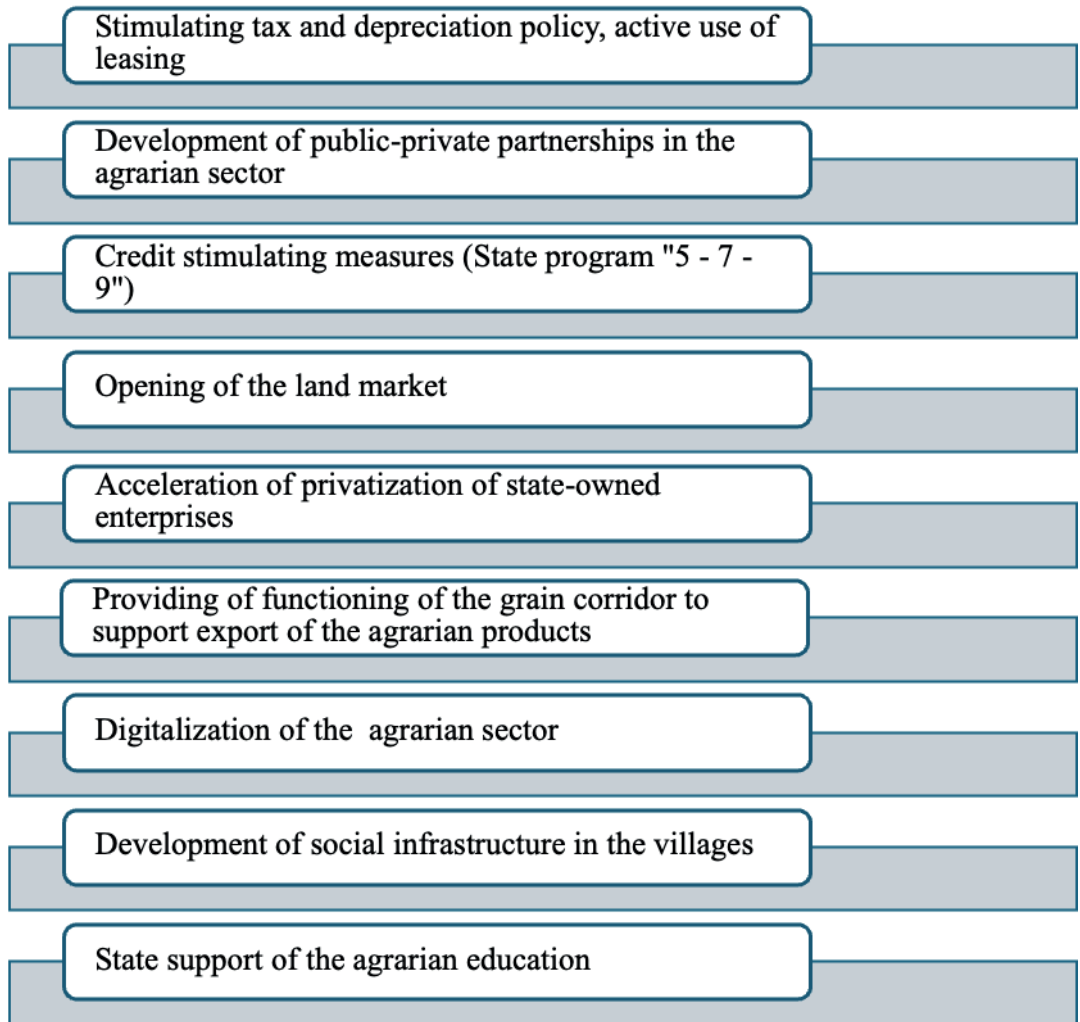


Figure 5. Measures for implementation of inclusive model of agrarian sector

Source: compiled by the authors based on Alekseieva, K. (2023) Derzhavna pidtrymka rozvytku ahrarnoho biznesu v umovakh hlobalnykh zahroz [State support for the development of agrarian business in conditions of global threats]. *Scientific perspectives*. № 2(32). URL: <http://perspectives.pp.ua/index.php/np/article/view/3868/3889> (in Ukrainian)

The history of economic development, starting with the first industrial revolution (as a result of accumulation of scientific knowledge embodied in production processes and means of production) testifies to the key role of the institutional system before the necessary reorganizations in determining the ability of the economic system to obtain the maximum usefulness and profitability from its existing potential. Institutional system, as a set of institutions, together with the organization determine the context in which economic activity is carried out. Institutionalism can be understood as a direction in economic science, focused on the analysis of institutions, which is characterized by a significant diversity of its schools and a large number of concepts (neo-institutional economic theory, economic theory of rights ownership, the theory of transaction and interaction costs, new political economy, economic sociology, etc.). Despite the differences in some methodological approaches, all studies in this direction are characterized by the importance given to empirical analysis of institutional environment, in particular, the influence of institutions on the efficiency of the use of limited resources and ensuring economic growth. Institutions are norms, restrictions, principles of behavior (“rules of the game”), mechanisms of motivation to comply with them, by which people are guided in their actions. The institutional environment is a set of formal and informal “rules of the game” that form prerequisites for interaction of people. The institutional system is a group of interrelated institutions functioning

within the boundaries of socio-economic objects of various levels: from enterprises to the country as a whole and aimed at ensuring the economic growth.

The institutional system can change over time through achieving formal or informal compromises among different interested groups of society. Further institutional changes in Ukraine depend on changes in the format of relations between the government and society.

Scientists distinguish three directions (models) of such relations in connection with economic development: 1) autonomous government (independent in its actions from the preferences of influence groups and voters); 2) consensus of subjects of political decision-making and groups of influence (“consensus of elites”), which implies the provision of political support by groups of influence in exchange for implementation of economic policy beneficial to them; 3) consensus of subjects of political decision-making and voters, which is characterized by the orientation of politicians to requests and preferences of the majority of the electorate. Unfortunately, the third model type is often ignored in practice, and decisions are made in favor of the interests of the state, as the government understands them, and in favor of groups of influence lead to inefficient redistribution of resources and, accordingly, to the emergence of disproportions in distribution of income. All this interferes with the manifestation of market

advantages and at the same time does not provide opportunities to eliminate its shortcomings.

In relation to the agrarian sector institutional prerequisites for its successful development include the actions of the authorities aimed at establishing institutions (norms, rules, restrictions) and determining the order of their observance, aimed at achievement of goals and objectives set by the government in interaction with the agrarian sector entities. The task of long-term institutional support of economic development of the agrarian sector is implementation of reforms in the sector aimed at its technological renovation, observance of the rights and freedoms of agrarian entities, real promotion of the development of market institutions in the sector. This is achieved not directly, but through relevant organizations: state authorities, corporate and other business structures, state enterprises, specialized state institutions in the field of industry. Organizational aspects are significant and they are closely related to the problems of formation of effective organizational structures in the agrarian sector of economy of Ukraine, adequate to today's challenges, problems of interaction between the state institutions and market agents, and also on the institutional aspects of the innovative development of the agrarian complex.

In order to provide sustainable growth of rural areas in the frames of renovation of the Ukrainian agrarian sector after the war it is necessary to shift in the socio-economic development of the agrarian sector in favor of inclusive model, which will give new

impetus to sustainable growth of rural areas. It is necessary to provide transfer of the center of gravity from an extractive to an inclusive growth model and the identification of enclaves of inclusiveness in existing economic institutions.

The key provisions of the concept of inclusive sustainable growth include the conclusion about the existence of significant connection between economic growth rates and the solution of a wide range of social problems, including a fairer distribution of incomes created in society, with attention to the poorest strata of the population. Inclusive growth is aimed at improving living conditions for all layers of the population without discrimination including the aspects of welfare that are not related to the cash income of the population, but are of fundamental importance for alignment of economic opportunities in the field of education, health care, food supply and social integration. Inclusive development of the agrarian sector means its integration into the structural reforms that provide transition to green principles and accent on infrastructure development. Inclusive development makes it possible to manage social, ecological, geopolitical risks.

There is a stable relationship between inclusive growth and the digital transformation of the economy. Digital technologies can serve as a driver of inclusive growth due to the use of ways

unknown to previous technological revolutions²³. Digitalization processes in the agrarian sector push fast simultaneous development of production relations and the productive forces (production relations reflect the level of development of the productive forces which include people and existing technologies) forming the model of social and economic system. In the process of production people establish relationships with nature and with each other while providing production, distribution, exchange and consumption of material goods. So, the higher level of education and skills of productive forces the more advanced the production relations become and more innovative technologies are used to reach the aimed result which can also be seen among obligatory prerequisites for inclusive development.

That is why digitalization of agrarian sector can be used as an engine for its inclusive development raising the level of development of both productive forces and production relations. Implementation of inclusive development model means refusal to increase production at any cost but require new approaches to production. Inclusiveness minimizes consequences of uneven economic development and provides hidden economic reserves growth to achieve sustainable development goals²³.

²³ Alekseieva, K. A., Gumeniuk, Y. P., Gumeniuk, O. O., Huhul, O. Y., Sehed, L. M., & Reznik, N. P. (2020). Challenges of digitalization of economy. *International Journal of Scientific and Technology Research*, 9(3), 7044–7048. URL: <https://www.scopus.com/authid/detail.uri?authorId=57216253105>

Search for drivers of the development of the agrarian sector requires adjustment of the research methodology of inclusive growth (including the concept, criteria, indicators, assessment methods, etc.) in accordance with the tasks of sustainable development of the agrarian sector in modern economic conditions. Only inclusive growth will ensure implementation of such important tasks as food independence, physical and economic availability of food for all strata of the population of Ukraine. In these conditions, it becomes relevant to create institutional prerequisites for inclusive development of the agrarian sector of Ukraine, i.e. to make it oriented at the interests of individuals, small and medium sized agrarian business whereas the large agrarian business, i.e. agrarian holdings exist simultaneously.

In the frames of the extractive model of the agrarian sector extractive institutes do not provide to the small and medium sized agrarian business incentives for development and therefore become barriers to structural modernization of the sector. The large agrarian business can be oriented at implementation of innovation but the small and medium sized agrarian business remains behind the technological progress. The resources are often marked by inefficient allocation and are not transferred from ineffective owners to effective. The polarization of the population by level of life increases. Rural areas remain less developed and push the labor force to move to the urban areas. The social goals are omitted. The sustainability is not provided (Fig 6).

Access of agrarian entities to public benefits	Maintenance of sustainability in relation to the social component	Economic growth/economic development	Institutions	Innovations and technologies implementation
<ul style="list-style-type: none"> • Concentrated by the agrarian holdings. • Lack of access for SMB • Increasing social and regional differentiation 	<ul style="list-style-type: none"> • Sustainability is artificially maintained by the agrarian holdings which act as monopolists. • The social problems are not of attention 	<ul style="list-style-type: none"> • Economic growth can be implemented in the short term period at the expense of using of extra resources. • The economic development is not provided • The level of life of people in the country areas does not tend to improve 	<ul style="list-style-type: none"> • Institutions function to support large business (agrarian holdings) which is often in cooperation with political elite. • SMB lacks protection 	<ul style="list-style-type: none"> • Agrarian holdings possess potential to implement technologies and innovations and often they do • SMB lacks resources for innovations development

Figure 6. Institutional prerequisites for extractive model of agrarian sector

Source: compiled by the authors based on Bobukh, I. (2024). Ukrayina u vymirakh inklyuzyvnosti ta instytutsiynoho rozvytku. [Ukraine in the dimensions of inclusiveness and institutional development.] *Economy of Ukraine*, 65(5) (726), Pp. 38–58. <https://doi.org/10.15407/economyukr.2022.05.038> (in Ukrainian)

In the frames of the inclusive model of the agrarian sector inclusive institutions provide fair distribution of public benefits considering the interests of both large agrarian business and small and medium sized agrarian business. The level of life of the broad masses of the rural population increases in long term period and the labor force remains in the rural areas contributing to their development and aligning the gap between the rural and urban areas development. Not only large agrarian business but also the small and medium sized business becomes innovative and aimed at

technologies implementation. The social goals are achieved in the long-term perspective. The sustainability is provided. (Fig. 7)

Access of agrarian entities to public benefits	Maintenance of sustainability in relation to the social component	Economic growth/economic development	Institutions	Innovations and technologies implementation
<ul style="list-style-type: none"> • Access to public benefits belongs to both large agrarian business and SMB 	<ul style="list-style-type: none"> • Sustainability is inherent in the principles of inclusive development based on the inclusion of all resources. • An inclusive model promotes sustainable development of rural areas • The social problems are of great attention 	<ul style="list-style-type: none"> • Economic growth can be implemented in the short and long term period as the result of qualitative changes. • The economic development is provided • The level of life of people in the country areas tends to improve 	<ul style="list-style-type: none"> • Institutions function to support both large business and SMB 	<ul style="list-style-type: none"> • Innovations and technologies are implemented at all levels by both large agrarian business and SMB

Figure 7. Institutional prerequisites for inclusive model of agrarian sector

Source: compiled by the authors based on Bobukh, I. (2024). Ukrayina u vymirakh inklyuzyvnosti ta instytutsiynoho rozvytku. [Ukraine in the dimensions of inclusiveness and institutional development.] *Economy of Ukraine*, 65(5) (726), Pp. 38–58. <https://doi.org/10.15407/economyukr.2022.05.038> (in Ukrainian)

Before the start of the large-scale war at the territory of Ukraine the development of the agrarian sector of Ukraine was determined by specific way of development of both technological and institutional factors. The agrarian holdings modernized according to the latest technological standards existed simultaneously with farms and small domestic households which lacked potential to implement innovations and technologies. The

Ukrainian agrarian sector was integrated into the world food market and even became the leader in exporting some product groups to the world market but it remained the one with large share of products with low added value in exports. The implemented model of socio-economic development was not aimed at solving the social problems of the rural areas and the differentiation of the living standards of urban and rural populations remained essential. Despite the implementation of government programs for support of small and medium sized agrarian business, problems of equal access of rural residents to social infrastructure facilities were not solved, that was especially typical for the rural hinterland. In general, features of extractive model of development of agrarian sector dominated²⁴.

The research brings us to the conclusion that in current condition it is necessary to create the institutional prerequisites of inclusive development of agrarian sector. In this case it will be possible to provide sustainability in the long-term perspective, i.e. to reach economic, social and environmental goals. The agrarian sector of Ukraine remains one of the key sectors of the economy of Ukraine and crucial for the food security inside and outside the country. Nowadays, in conditions of war in Ukraine, the sector suffers challenges which could hardly be predicted in previous periods of time and the changes on the production relations are

²⁴ Alekseieva, K. (2023) Derzhavna pidtrymka rozvytku ahrarynoho biznesu v umovakh hlobalnykh zahroz [State support for the development of agrarian business in conditions of global threats]. *Scientific perspectives*. № 2(32). URL: <http://perspectives.pp.ua/index.php/np/article/view/3868/3889> (in Ukrainian)

inevitable. It is important to create institutional prerequisites which will stimulate the changes to be made in the direction of inclusive development of the sector in future, i.e. support of small and medium sized agrarian business, solution to social problems, orientation and innovative development via digitalization, etc.

1.4. Theoretical foundations of sustainable development and its importance for inclusive agri-food sector

The concept of sustainable development is an important theoretical and practical foundation of the modern economy, which emerged in response to global challenges related to environmental degradation, depletion of natural resources, and social inequality. Its scientific formulation gained international recognition after the publication of the “Our Common Future” report (1987) by the United Nations World Commission on Environment and Development (Brundtland Commission). According to this report, sustainable development is defined as the process of meeting the needs of the present generation without compromising the ability of future generations to meet their own needs.

The fundamental basis of the concept of sustainable development lies in its three key components: economic, social, and environmental. These components are closely interconnected and can ensure the balanced development of society only if they are implemented simultaneously:

1. The economic component entails stable economic growth based on the efficient use of resources and the creation of added value. In the context of the agri-food sector, the economic component of sustainable development means increasing the productivity of agricultural enterprises, optimizing costs, implementing innovative technologies, and ensuring long-term profitability.

2. The social component of sustainable development focuses on improving living conditions, reducing social inequality, and ensuring access to basic resources and benefits for all population groups. In the agri-food sector, this involves creating new jobs, increasing income levels in rural areas, providing decent working conditions, and ensuring access to social services.

3. The environmental component is aimed at preserving natural resources and ensuring long-term ecological sustainability. In the field of agri-food production, this means the rational use of land, water, and biological resources, reducing pollution and emissions, restoring soils, and preventing their degradation²⁵.

The concept of sustainable development involves integrating economic, social, and environmental goals, which is critically important for the agri-food sector that directly interacts with natural resources and has a significant impact on local communities. In

²⁵ Yermak, S. O. (2017) Deskryptyvni kharakterystyky inklyuzyvnoho zrostannya yak innovatsiynoho vektora sotsial'no-ekonomichnoho rozvytku krayiny. [Descriptive characteristics of inclusive growth as an innovative vector of socio-economic development of the country.] *Problemy ekonomiky*, № 1 (4). Pp. 8–14. (in Ukrainian)

today's world, where global challenges such as climate change, population growth, and resource scarcity are becoming increasingly urgent, agricultural enterprises must reassess their strategies and focus on achieving sustainable development.

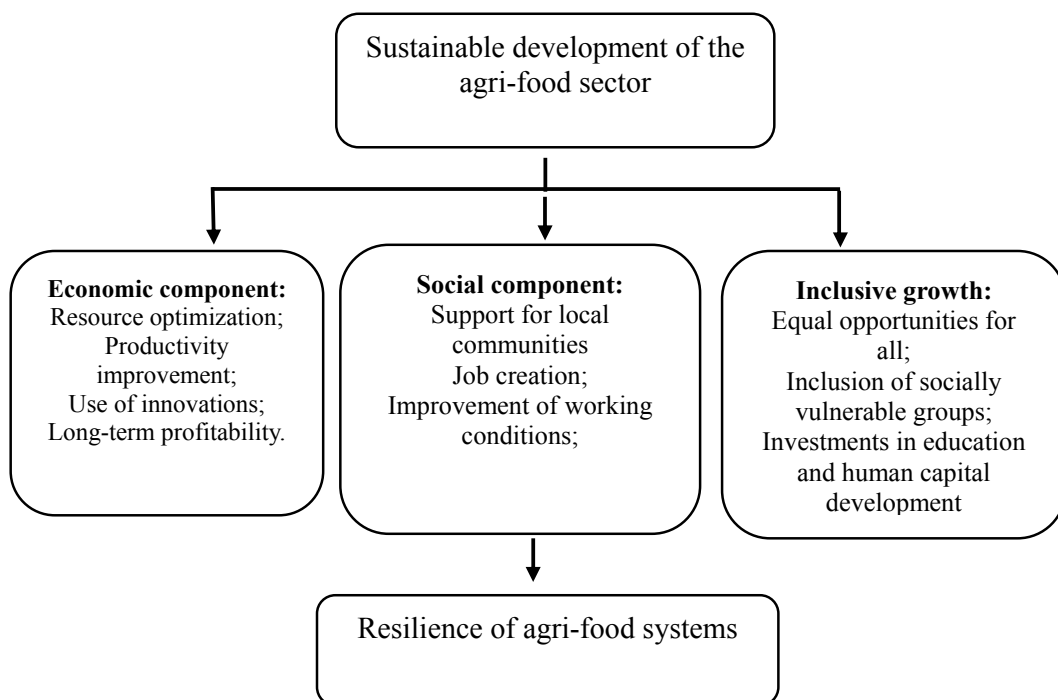


Figure 8. Scheme of strategic approaches to sustainable development

Source: compiled by the authors

The scheme (Fig. 8) of strategic approaches to sustainable development reflects a comprehensive approach that combines economic, environmental, and social components aimed at ensuring the long-term sustainability of the agri-food sector.

The economic component involves resource optimization, the implementation of innovative technologies, and productivity improvement, which contribute to the long-term profitability of enterprises. This is a key aspect for economic stability and growth.

The environmental approach focuses on reducing the negative impact on the environment through the rational use of natural resources and the adoption of environmentally friendly technologies. Such actions contribute to the preservation of ecosystems and the restoration of natural resources, which is critical for sustainable development.

The social component and principles of inclusive growth are aimed at improving living conditions for local communities by creating new jobs, supporting social stability, and ensuring equal access to resources. Investments in education and the development of human capital play an important role, fostering equal opportunities and social mobility.

The interaction of these elements enables the achievement of sustainable agri-food systems, ensuring their effective functioning in the long term.

The significance of sustainable development for the agri-food sector is manifested in its ability to ensure stable production of food products without harming the natural environment and social stability in the regions where it operates. The implementation of sustainable development strategies not only contributes to long-term economic efficiency but also to the preservation of the ecosystems

on which agricultural activities depend. Agricultural enterprises can achieve success only by harmoniously integrating the principles of sustainable development into all aspects of their operations. This means that, to ensure long-term stability and competitiveness in the market, enterprises must consider economic, environmental, and social factors.

From the perspective of economic sustainability, agricultural enterprises that implement sustainable development strategies can optimize production costs through the use of innovative technologies, improve the efficiency of production processes, and reduce dependence on external resources. These approaches allow for cost savings on energy, fertilizers, water resources, and minimize reliance on unstable market conditions.

The economic success of a sustainable agricultural enterprise is based on its ability to balance short-term profitability with long-term investments in productivity improvement. The use of precision farming technologies allows for the optimization of fertilizer and water use, reducing losses and production costs. This approach contributes to increased yields and product quality, which in turn enhances the enterprise's competitiveness in the market.

Additionally, long-term economic benefits also include access to international markets, where requirements for sustainable production are becoming increasingly stringent. The implementation of sustainable practices allows agricultural enterprises to obtain certifications such as Organic or Global GAP, which opens access to

new market segments and enhances the enterprise's reputation among consumers²⁶.

Environmental sustainability is one of the most important aspects of the sustainable development of agri-food enterprises. The main challenges related to the environmental component include soil degradation, depletion of water resources, pollution of the environment by chemical fertilizers and pesticides, and greenhouse gas emissions, which contribute to global warming.

The implementation of sustainable development principles involves reducing negative environmental impacts by using organic farming methods, crop rotation systems, agroforestry, biological plant protection agents, and biodiversity conservation. In particular, agricultural enterprises can introduce practices to restore soil fertility by using green fertilizers, composts, and biological insecticides, which minimize harmful effects on the environment and contribute to the preservation of natural resources.

Another direction is minimizing greenhouse gas emissions by implementing energy-efficient technologies, such as the use of bioenergy, solar energy, and other renewable energy sources. This not only helps enterprises reduce their energy costs but also contributes to fulfilling international environmental obligations to reduce CO₂ emissions.

²⁶ Litvak, O.A., Atayeva, O.A., Kendus, D.I. (2023) Stalyy rozvytok ta mozhlyvosti yoho dosyahnennya v pislyavoyennyi period. [Sustainable development and possibilities of its achievement in the post-war period.] *Naukovyy zhurnal «Prychornomors'ki ekonomichni studiyi»* № 83. Pp. 85-90 (in Ukrainian)

The social component of the sustainable development of agricultural enterprises lies in creating favorable conditions for workers, ensuring their social protection, improving the living standards of rural populations, and developing local communities. Agricultural enterprises are responsible for the social impact of their activities, supporting social infrastructure in the regions where they operate, creating jobs, and improving the skills of their employees.

The social responsibility of agricultural enterprises in the context of sustainable development includes not only ensuring fair working conditions and decent pay but also supporting local communities through investments in infrastructure, educational programs, healthcare services, and cultural initiatives. Enterprises that implement such approaches contribute to strengthening social stability, increasing employment, and improving living conditions.

Given the key role of the agri-food sector in ensuring food security, economic stability, and maintaining ecological balance, the implementation of sustainable development strategies by enterprises in this sector becomes a necessary condition for their long-term success. Agri-food enterprises cannot focus solely on short-term profitability, as such approaches may lead to the degradation of resource bases, decreased productivity, and loss of competitiveness in the market.

We present the table (table 3), where are performed key principles of sustainable development in the agri-food sector.

Table 3. Key principles of sustainable development in the agri-food sector

Principle	Application in the agri-food sector
Rational use of resources	Optimization of land, water, and energy use for long-term productivity.
Reduction of environmental impact	Implementation of ecological farming methods, reduction of pollution, and soil erosion.
Economic efficiency	Utilization of innovative technologies to enhance efficiency and profitability.
Social responsibility	Support for local communities, ensuring fair working conditions, and equal access to resources

Source: compiled by the authors

This table, which reflects the key principles of sustainable development in the agri-food sector, provides a clear picture of the key aspects that should underlie the activities of modern agri-food enterprises. These principles include the rational use of resources, reduction of environmental impact, economic efficiency, and social responsibility. Each of these elements not only contributes to improving the performance of enterprises but also ensures their long-term sustainability.

The first principle, the rational use of resources, focuses on ensuring that enterprises optimize their natural resources, such as land, water, and energy. Optimizing the use of these resources is essential to ensuring long-term productivity and maintaining environmental sustainability. In agriculture, which directly depends

on natural resources, conservation and effective management of these resources are key factors in ensuring stable production. This includes practices for maintaining soil fertility, preventing soil erosion, reducing water consumption through modern irrigation technologies, and implementing energy-efficient solutions.

The second principle, reducing environmental impact, concerns the need to implement environmentally friendly farming methods to reduce pollution. Agriculture is one of the sectors that significantly impacts ecosystems through greenhouse gas emissions, the use of chemical fertilizers and pesticides, and soil degradation. The introduction of organic farming methods, the use of biological plant protection products, and the rational use of water resources can significantly reduce the negative impact of agricultural activities on the environment. This is critical for preserving ecosystems and preventing the depletion of natural resources, which, in turn, ensures the sustainability of production in the long term.

The third principle, economic efficiency, means that agri-food enterprises must ensure a high level of productivity and profitability. The use of innovative technologies to increase production efficiency is a key element of this principle. Precision farming technologies, process automation, and other innovations reduce costs, increase yields, and optimize resource use. This not only helps enterprises remain competitive in the market but also ensures their economic stability.

The fourth principle, social responsibility, is extremely important in the context of sustainable development, as it involves supporting local communities, ensuring fair working conditions, and providing equal access to resources. Agri-food enterprises operate in close interaction with local communities, so their impact on social conditions is significant. Investments in community development, job creation, and infrastructure support are integral components of socially responsible business. This not only strengthens social stability in the regions but also improves the living standards of the population.

Each of these principles is interconnected with the concept of inclusive growth, which complements and expands the ideas of sustainable development by focusing on equal opportunities for all population groups. Inclusive growth aims to involve as many people as possible in economic activity, especially those traditionally excluded from economic processes due to social or economic barriers. This may include low-income populations, women, youth, or people with disabilities.

The principles of sustainable development, particularly the social responsibility of agri-food enterprises, are directly linked to the concept of inclusive growth. The social responsibility of enterprises involves creating conditions for equal access to economic benefits, education, and opportunities for human capital development. In the agri-food sector, which traditionally serves as a major employer in rural areas, enterprises play a crucial role in

fostering social stability and economic equality. Engaging local communities in economic activities not only improves their well-being but also ensures the long-term development of rural regions²⁷.

Agri-food enterprises that adhere to principles of social responsibility invest in local communities, develop infrastructure, and create new jobs. This helps reduce social inequality and has a positive impact on the development of human capital. It is important to note that fair access to resources and opportunities creates a foundation for social mobility and economic development. Enterprises that actively implement social support and educational programs not only enhance the skills of their employees but also create new opportunities for the economic development of the entire local community.

The concept of inclusive growth is based on creating equal opportunities for all social groups. It is a key component of the modern approach to economic development, as it ensures a fair distribution of economic benefits and creates conditions for the active involvement of various population groups in economic processes. Inclusive growth is closely related to sustainable development, as it allows for achieving not only economic efficiency but also social justice, which are necessary conditions for the sustainable long-term development of society.

²⁷ Litvak, O.A., Atayeva, O.A., Kendus, D.I. (2023) Stalyi rozvytok ta mozhyvosti yoho dosyahnennya v pislyavoyennyi period. [Sustainable development and possibilities of its achievement in the post-war period.]. *Naukovyy zhurnal «Prychornomors'ki ekonomichni studiyi»* № 83. Pp. 85-90. (in Ukrainian)

Inclusive growth means not only the growth of the economy but also the fair distribution of the results of that growth among the entire population. It complements sustainable development by ensuring the social component of sustainability, allowing society to thrive through the maximum participation of all social groups in production processes. As Nobel laureate in economics Amartya Sen states, development cannot be genuine if it is not inclusive and does not touch all layers of society. According to him, economic growth must be accompanied by improved access to resources, education, healthcare, and employment for the most vulnerable groups, which is the foundation of the concept of inclusive development.

Inclusive growth is a key component of sustainable development because it helps reduce social inequality and ensures access to economic benefits for all social groups. This is especially relevant for the agri-food sector, where a large portion of the population lives in rural areas and has limited access to resources, education, and jobs. Implementing inclusive growth helps reduce these inequalities and engage broad social groups in economic activities.

Firstly, inclusive growth is defined as a process of economic development that provides opportunities for all social groups to participate in production processes and have equal access to economic resources. This definition is based on concepts of social justice and the equitable distribution of economic benefits. It is important to emphasize that inclusive growth aims not only to

achieve high economic performance but also to create conditions for social mobility and reduce economic and social inequality.

Inclusive growth, according to the World Bank, has two key characteristics: 1) it focuses on creating economic opportunities for all, including the most vulnerable groups, and 2) it entails the fair distribution of the results of economic growth, which helps reduce social inequality. This is crucial for sustainable development because, without inclusivity, it is impossible to achieve stable economic and social development.

Secondly, inclusive growth complements the concept of sustainable development by creating equal opportunities for participation in production processes and access to resources. This not only promotes economic development but also ensures social stability, reduces poverty, and improves living conditions. Inclusive growth focuses on the following key aspects:

1. Ensuring equal opportunities for all social groups. Inclusive growth is aimed at creating equal conditions for all social groups, including vulnerable populations such as women, youth, low-income families, people with disabilities, and ethnic minorities. This approach provides access to economic resources, education, healthcare, and employment for everyone, regardless of social or economic status. As Amartya Sen notes, true development must include expanding opportunities for every individual to realize their potential, and inclusive growth is one of the key mechanisms to achieve this goal.

2. Engaging broad segments of the population in economic activities. One of the key tasks of inclusive growth is to create conditions for the participation of all social groups in economic processes. In the agri-food sector, this means involving local populations in production processes, which contributes to creating new jobs, reducing unemployment, and improving social integration in rural regions. Research from Oxford University shows that active participation of local communities in production processes increases social cohesion and strengthens local economies.

3. Human capital development through investments in education and training. Inclusive growth is impossible without investments in human capital. For the agri-food sector, this means not only creating jobs but also providing opportunities for improving workers' skills. The importance of investments in human capital has been emphasized by many scholars, including Theodore Schultz, Nobel laureate in economics, who argued that the development of rural regions and productivity in agriculture depend on workers' level of knowledge and skills. Education and training are critically important for improving production efficiency, adapting to climate change, and implementing new technologies in agricultural processes.

4. Fair distribution of the results of economic growth. Inclusive growth promotes the fair distribution of the results of economic growth among all population groups. This is particularly important for the agri-food sector, as a large portion of the

population engaged in this sector lives in rural areas, where income levels are significantly lower than in cities. According to research by the International Labour Organization (ILO), fair distribution of economic benefits helps reduce social tensions and stimulates economic activity in remote regions, thereby ensuring sustainable economic growth.

Inclusive growth in the agri-food sector plays a critical role in ensuring the long-term stability and resilience of this sector. The implementation of inclusive approaches contributes to increasing productivity, reducing social inequality, and improving the quality of life in rural areas. Combined with sustainable development strategies, inclusive growth ensures not only the economic efficiency of agricultural enterprises but also the maintenance of environmental and social standards. This approach helps maintain a balance between the economic interests of businesses and social responsibility, which, in turn, strengthens ecosystems and social structures.

The experience of many countries worldwide shows that sustainable development strategies based on the principles of inclusive growth are key to ensuring the long-term sustainability of agri-food systems. Let us consider how leading countries successfully integrate these strategies into their agricultural sectors and what lessons can be useful for Ukraine.

The sustainable development strategies of the agri-food sector in leading countries around the world demonstrate that the

integration of economic, social, and environmental aspects is a key factor in ensuring long-term production sustainability. These countries implement systematic approaches that focus on optimizing resource use, reducing environmental impact, and improving social conditions for agricultural workers. We are going to examine a few strategies that leading countries use to achieve sustainable development in their agricultural sectors.

European Union

The European Union's (EU) sustainable development strategy is one of the most advanced in the world. The EU aims to reduce the negative impact of agriculture on the environment while ensuring a high level of food security. The primary focus is on developing organic farming, reducing the use of pesticides and chemical fertilizers, implementing precision farming technologies, and supporting small farms. Under the “European Green Deal”, the EU plans to reduce the use of chemical agents by 50% by 2030 and expand organic farming to 25% of farmland.

In addition, a key element of the EU's sustainable development strategy is the implementation of agroecology programs that focus on protecting biodiversity, maintaining soil fertility, and rational water use. European farmers receive substantial financial support from the government for adopting environmentally responsible practices through the Common Agricultural Policy (CAP).

United States

In the United States, the sustainable development strategy in the agricultural sector focuses on using innovative technologies such as precision farming, automation, and digital monitoring systems. These technologies help optimize resource use, particularly water, fertilizers, and pesticides, reducing excessive consumption. At the same time, U.S. agricultural policy also emphasizes reducing greenhouse gas emissions, an important aspect of combating climate change.

The Conservation Stewardship Program (CSP) deserves special mention. It funds farmers who implement practices to conserve natural resources, such as reducing soil erosion, preserving water resources, and improving pasture conditions. CSP supports agricultural enterprises in transitioning to sustainable farming methods that reduce their environmental footprint.

Netherlands

The Netherlands is known as one of the leading countries in innovative and sustainable agriculture. The country actively promotes vertical farming technologies, where significant volumes of produce are grown on limited land with minimal water use and no chemical fertilizers. The Netherlands also develops the concept of a circular economy in the agricultural sector, where waste is turned into resources, reducing losses and promoting more efficient use of natural resources.

Additionally, the Netherlands is advancing the “Partnership for Sustainable Agriculture” program, which involves collaboration between the government, farmers, and research institutions to implement innovative solutions aimed at reducing the environmental impact of agricultural activities. For example, the use of biofuels and advanced technologies to preserve soil fertility.

Japan

Japan faces significant challenges due to the limited amount of arable land, so the country focuses on agricultural intensification strategies combined with innovation. The Japanese government actively invests in developing hydroponics and aeroponics technologies, which allow produce to be grown in confined spaces with less water. In addition, policies are being implemented to reduce food waste and introduce agricultural product processing technologies.

Japan is also developing strategies to adapt agriculture to climate change by introducing new crop varieties resistant to adverse weather conditions and water management systems. One important area is the digitalization of agriculture, which promotes more precise resource management and improves production efficiency.

Comparison of International Experience

Sustainable development strategies in leading countries (table 4) demonstrate different approaches, yet they all aim to balance economic, environmental, and social interests. The following tables

present the key directions for the development of the agri-food sector in various countries, which ensure sustainable development.

Table 4. Key elements of sustainable development in the agricultural sectors of leading countries

Country	Key strategies	Environmental approaches	Technological innovations
EU	Organic farming, agroecology	Reduction of pesticide use, cap	Precision agriculture, support for small farms
USA	Precision agriculture, resource conservation programs	Reduction of greenhouse gas emissions	Automation, digital monitoring systems
The Netherlands	Circular economy, vertical farming	Biofuels, efficient resource use	Vertical farms, waste recycling
Japan	Intensification of agriculture	Water resource management	Hydroponics, aeroponics, digitalization

Source: compiled by the authors

Table 4 provides a comparative overview of the key elements of sustainable development in the agricultural sectors of leading countries. It demonstrates different approaches to implementing sustainable development strategies aimed at combining economic efficiency, environmental sustainability, and technological innovation.

1. **European Union (EU)**

The European Union focuses on the development of organic farming and agroecology. These strategies include reducing the use of pesticides and chemical fertilizers within the framework of the Common Agricultural Policy (CAP). The EU actively supports

small farms and implements precision farming technologies for more efficient resource use. The implementation of such practices helps minimize environmental impact and preserve biodiversity.

2. **United States of America (USA)**

The sustainable development strategy of the agricultural sector in the USA focuses on the use of precision farming and the implementation of programs for the conservation of natural resources. Significant attention is paid to reducing greenhouse gas emissions, which is part of the global strategy to combat climate change. Technological innovations such as automation of production processes and digital monitoring systems help optimize resource use and increase the efficiency of agricultural activities.

3. **Netherlands.** The Netherlands is a global leader in developing a circular economy and innovative vertical farming technologies. The primary environmental strategy is the use of biofuels and efficient resource utilization, which helps reduce waste and minimize environmental impact. Vertical farming technologies and waste recycling are innovative approaches that allow the Netherlands to achieve high production levels with minimal space and resource use.

4. **Japan.** Japan emphasizes agricultural intensification in conditions of limited resources. Water resource management strategies and the implementation of hydroponic and aeroponic technologies allow the country to maintain productivity in the agricultural sector despite land shortages. At the same time, the

digitalization of processes improves the efficiency of agricultural enterprise management and optimizes resource use.

Overall, this table shows that each country selects its own strategy based on its natural conditions, economic priorities, and available technological solutions. However, all these countries emphasize the combination of environmental, economic, and technological innovations to achieve sustainable development in the agricultural sector.

Table 5. Comparison of social aspects of sustainable development in the agri-food sector

Country	Support for local communities	Engagement of socially vulnerable groups	Investments in human capital development
EU	Financial support for farmers through cap	Programs for young farmers	Support for vocational training and education
USA	Support for rural communities through csp	Inclusion of small farming operations	Investments in agricultural universities and research
The Netherlands	Collaboration between government and communities	Support for farmers through partnerships	Development of innovations through research centers
Japan	Programs for the development of small farms	Investments in women and youth	Promotion of scientific research in agriculture

Source: compiled by the authors

Table 5 compares the social aspects of sustainable development in the agri-food sector across various countries, showing how each nation integrates social initiatives and support for local

communities into its development strategies. The comparison covers three key areas: support for local communities, involvement of vulnerable social groups, and investments in human capital development.

Leading countries around the world demonstrate that sustainable development strategies in the agri-food sector must account not only for economic and environmental factors but also for social aspects, which are key to achieving long-term sustainability. Table 5 clearly shows that success in implementing sustainable development largely depends on a country's ability to integrate social initiatives focused on supporting local communities, involving vulnerable social groups, and investing in human capital development.

In the **European Union**, financial support mechanisms under the Common Agricultural Policy (CAP) allow significant resources to be directed towards the development of farms, which in turn supports social stability in rural areas. Programs for young farmers ensure the influx of new talent into the agricultural sector, helping to restore human capital. Additionally, investments in professional training and education enhance workers' qualifications, improving the productivity of agri-food enterprises and fostering innovation in the regions. Thus, the EU has demonstrated an effective symbiosis of social and economic aspects in its sustainable development strategies.

The **United States** pays special attention to supporting local communities through programs like the Conservation Stewardship Program (CSP), which enables farmers to adopt environmentally sustainable farming practices. At the same time, the U.S. actively engages small farms in government programs, helping to reduce social inequality and sustain economic activity in rural regions. Investments in agricultural universities and research centers continually develop human capital, create innovative solutions, and enhance the competitiveness of the U.S. agricultural sector on the global stage. U.S. social policy in agriculture demonstrates that investing in human capital and involving farmers in educational programs are important components of a long-term sustainable development strategy.

The **Netherlands** is a prime example of how to successfully integrate innovative technologies with socially-oriented programs. Collaboration between the government and communities helps address social and economic challenges, while investments in farmer development through partnership programs strengthen their economic and social resilience. Simultaneously, the development of research centers and the implementation of innovations improve workers' qualifications and help the country maintain its leadership in sustainable agriculture. This underscores that social support and investments in human capital are cornerstones of sustainable development in the agricultural sector.

Given its limited natural resources, **Japan** focuses on the development of small farms and the inclusion of vulnerable groups, such as women and youth, in the agricultural sector. This helps ensure social equality and the resilience of agricultural enterprises. Additionally, Japan actively promotes agricultural research, supporting high levels of technological innovation in farming. Investments in human capital development improve the productivity of agricultural enterprises and ensure long-term sustainable development.

All the examples provided show that sustainable development is impossible without significant social investment. Supporting local communities, involving vulnerable social groups, and investing in human capital contribute to increased economic efficiency, reduced social inequality, and long-term sustainability of the agri-food sector. Leading countries around the world demonstrate that integrating social initiatives into sustainable development strategies is key to creating sustainable and thriving agricultural systems.

1.5. Economic and environmental benefits of implementing sustainable development in the agri-food sector

Sustainable development in the agri-food sector, as a concept that encompasses three key components – economic, environmental, and social – becomes critically important for ensuring the long-term stability and prosperity of enterprises in this sector. In the modern context of globalization and climate change, the implementation of

sustainable development allows agricultural enterprises not only to respond to contemporary challenges but also to use their resources efficiently to increase productivity and competitiveness.

Scientific research indicates that the agri-food sector, being one of the most resource-intensive sectors globally, faces numerous challenges regarding the rational use of land, water, and energy. Moreover, agriculture significantly impacts the environment through greenhouse gas emissions, soil degradation, and water resource pollution. In this context, sustainable development becomes essential for agricultural enterprises aiming to reduce their environmental footprint, conserve natural resources, and simultaneously improve their economic efficiency.

Implementing sustainable farming practices brings not only environmental benefits, such as reducing pollution and preserving ecosystems, but also economic advantages. Studies conducted by international organizations demonstrate that businesses that integrate sustainable development principles into their operations achieve significant improvements in resource efficiency, optimize production processes, and reduce energy and material costs.

Thus, the implementation of sustainable development contributes to achieving two simultaneous goals: ensuring economic growth and maintaining environmental sustainability. This allows agricultural enterprises not only to reduce their negative environmental impact but also to increase profitability by lowering production costs and optimizing the use of natural resources.

Advantages of Implementing Sustainable Development:

Increased Economic Efficiency and Resource Optimization

The adoption of the sustainable development concept in the agri-food sector is not only a strategically important decision but also a necessary tool for ensuring long-term competitiveness and economic stability for enterprises. Sustainable development involves integrating economic, environmental, and social aspects into production processes, allowing businesses to achieve higher levels of resource efficiency, increase profitability, and minimize environmental impact. The primary advantages of this approach are the growth of economic efficiency and the optimization of resources, both of which are interconnected and are key factors in the long-term success of agri-food businesses.

Economic Efficiency Growth

One of the most significant benefits of implementing sustainable development is the increase in the economic efficiency of agri-food enterprises. Economic efficiency, in the context of sustainable development, is defined as the ability of a company to minimize costs and optimize production processes through the rational use of resources and the introduction of innovations. Scientific studies show that companies that integrate sustainable development principles achieve higher productivity by improving the efficient use of natural resources, reducing energy and material costs, and optimizing management processes.

For example, the implementation of precision farming technologies enables businesses to reduce the costs of fertilizers and crop protection products by more accurately determining the need for these resources. Monitoring and automation systems allow for data collection and analysis on soil conditions, moisture levels, pest presence, and more, enabling farmers to make more informed decisions regarding resource use. As a result, resource costs decrease, and productivity increases, contributing to the overall efficiency of the enterprise.

Additionally, the adoption of renewable energy sources, such as bioenergy or solar panels, reduces energy costs, an important element of a sustainable development strategy. Using energy from renewable sources allows agricultural enterprises to reduce their dependence on external energy markets, which is a significant advantage amid fluctuating oil and gas prices. Research shows that companies investing in renewable energy sources achieve substantial cost reductions while increasing the environmental sustainability of their operations.

Resource Optimization

Another important aspect contributing to economic efficiency growth is the optimization of natural resource use. The agri-food sector is one of the most resource-intensive sectors of the global economy, so the rational use of land, water, and energy resources is key to ensuring its sustainable development. Implementing sustainable development principles allows companies to use

available resources more efficiently, which not only reduces costs but also preserves natural ecosystems for future generations.

One of the most effective practices is organic farming, which minimizes the use of chemical fertilizers and pesticides, reducing the environmental burden and ensuring the long-term fertility of soils. Organic farming also lowers costs for purchasing chemical plant protection products and fertilizers, positively impacting the economic performance of agricultural enterprises. In turn, crop rotation systems help prevent soil depletion and increase yields without increasing chemical input volumes.

Precise irrigation also plays a crucial role in resource optimization, allowing businesses to reduce water costs, particularly in regions with limited water resources. Precision irrigation technologies enable accurate control over the amount of water delivered to fields, minimizing losses through evaporation or inefficient use. This not only lowers water costs but also enhances the efficient use of land resources.

Environmental Benefits and Sustainability

It is important to note that implementing sustainable development provides not only economic but also significant environmental benefits. Reducing the use of chemical fertilizers, lowering greenhouse gas emissions, and minimizing water resource pollution are key environmental outcomes of sustainable farming practices. Moreover, by reducing the negative impact on the environment, businesses gain additional advantages in terms of

market reputation and access to new segments, such as consumers who prefer products produced with environmentally friendly technologies.

Companies that adopt sustainable development principles can also participate in international certification programs such as Global GAP or organic standards, which allow them to enter new markets and reach consumers focused on ecological products. This creates new opportunities for profitability growth and provides competitive advantages in the international market.

We present strategic advantages of implementing sustainable development in Figure 9.

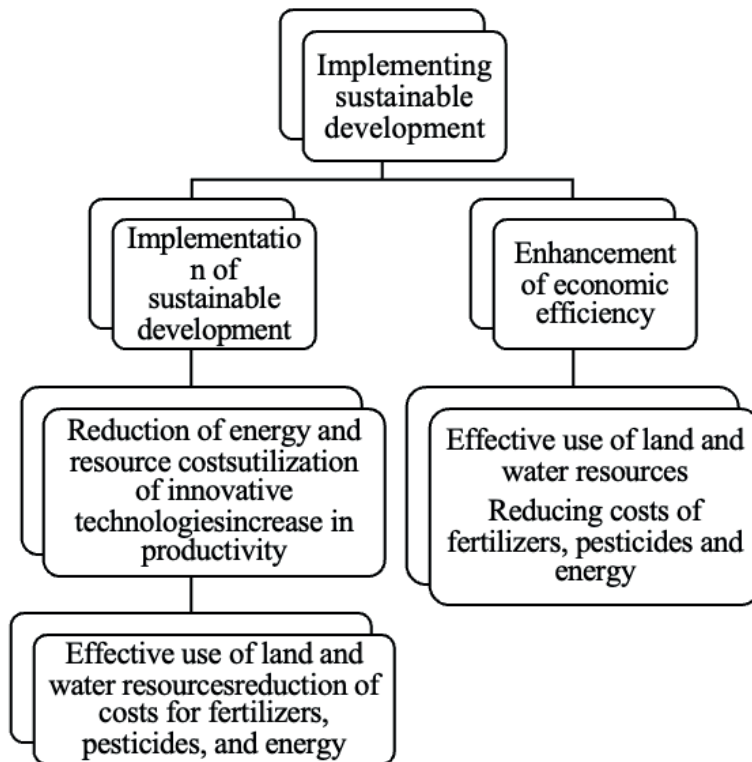


Figure 9. Strategic Advantages of Implementing Sustainable Development

Source: compiled by the authors

The figure 9 reflects the key strategic advantages of implementing sustainable development in the agri-food sector, focusing on two main directions: increasing economic efficiency and optimizing resources, which ultimately lead to reducing the negative environmental impact.

1. Increasing Economic Efficiency:

This component emphasizes the ability of enterprises to minimize costs for essential production resources such as fertilizers, energy, and water by introducing innovative technologies. Specifically, precision farming systems enable resource optimization through comprehensive monitoring of soil conditions, moisture levels, and crop development. This allows for informed decision-making regarding the dosing of fertilizers and irrigation, which in turn enhances productivity, reduces production costs, and improves the competitiveness of agri-enterprises in both domestic and international markets.

2. Resource Optimization:

The implementation of sustainable development involves the rational use of natural resources, including land, water, and energy. The use of environmentally safe technologies and practices, such as organic farming and precision irrigation, helps reduce expenditures on chemicals and water, improving the enterprise's environmental performance. This also lowers the environmental burden on natural resources, supports their conservation, and ensures the stability of agro-industrial systems in the long term.

3. Reducing Negative Environmental Impact:

The final element of the diagram highlights the environmental benefits arising from efficient resource use and the adoption of environmentally friendly technologies. Agri-enterprises that implement sustainable practices can reduce greenhouse gas emissions, soil degradation, and water pollution, contributing to ecosystem restoration and improving the overall environmental situation. This, in turn, ensures the ecological sustainability of production processes and the preservation of resources for future generations.

Thus, the diagram demonstrates the close interconnection between the economic and environmental benefits of implementing sustainable development. Rational resource use drives economic efficiency growth while simultaneously minimizing environmental impact, ensuring the long-term sustainability of agri-enterprises and fostering their sustainable development. In the table 6 we perform economic and environmental benefits of implementing sustainable development.

The table highlights the key strategic advantages of implementing sustainable development in the agri-food sector, emphasizing economic, environmental, and social aspects that ensure long-term sustainability for enterprises. Each of these benefits is scientifically substantiated, grounded in the concepts of sustainable development, economic efficiency, and resource optimization.

Table 6. Economic and Environmental Benefits of Implementing Sustainable Development

Key benefits	Description
Increased economic efficiency	Optimization of production processes through the use of innovative technologies, such as precision farming and automation. This reduces costs for resources, fertilizers, and energy while also increasing the productivity of the enterprise.
Rational use of resources	Reduction of costs for water, fertilizers, and pesticides through the introduction of precision irrigation, organic farming methods, and crop rotation systems. This also helps preserve natural resources and improve soil fertility.
Reduction of environmental impact	Reduction of greenhouse gas emissions, soil and water pollution through the decreased use of harmful chemicals. The implementation of eco-friendly technologies mitigates the negative impact on ecosystem
Resilience to market fluctuations	Using renewable energy sources and reducing dependence on external suppliers helps enterprises become less vulnerable to price changes in energy and resources
Access to new markets	Enterprises that follow sustainable development principles can receive international certifications (e.g., global gap, organic standards), which open access to new markets for eco-friendly products and new consumer segments
Improved social responsibility	Creation of new jobs, support for local communities, and raising social standards. This helps reduce social inequality and engage local residents in the production process

Source: compiled by the authors

Economic efficiency is achieved through the adoption of innovative technologies such as precision agriculture, digital monitoring systems, and process automation. These approaches allow agro-enterprises to optimize their use of natural and production resources, reducing costs for fertilizers, water, and energy while also increasing productivity. Studies show that businesses that adopt precision farming can reduce costs for

fertilizers and pesticides by up to 30%, directly impacting profitability. Therefore, the application of modern technologies enhances the economic return on each invested resource.

The rational use of resources is a key factor in sustainable development, as the agricultural sector remains one of the most resource-intensive sectors globally. Implementing methods for the efficient use of water, land, and energy resources minimizes costs and increases productivity. For example, organic farming practices contribute to soil fertility conservation, while precision irrigation technologies can reduce water use by 20-50%, which is crucial in water-scarce regions. Thus, resource optimization not only improves economic performance but also contributes to the conservation of natural ecosystems.

Reducing the environmental impact is another critical aspect of sustainable development. The use of eco-friendly technologies in agriculture significantly reduces soil and water pollution and greenhouse gas emissions, one of the leading causes of climate change. For example, research indicates that organic farming can reduce CO₂ emissions by up to 40% compared to conventional methods. Additionally, the reduced use of chemical fertilizers and pesticides supports biodiversity conservation and prevents soil degradation²⁸.

²⁸ Salatyuk, N. M. (2013) Ekonomichne zrostannya yak neobkhidna umova perekhodu do staloho rozvytku. [Economic growth as a necessary condition for the transition to sustainable development] *Naukovyy chasopys NPU imeni M. P. Drahomanova. Seriya № 18. Ekonomika i pravo*. Vypusk 21. Pp. 3–11. (in Ukrainian)

Resilience to market fluctuations is strengthened by adopting renewable energy sources and energy efficiency systems, reducing enterprises' dependence on volatile global energy markets. This not only lowers energy costs but also makes businesses less vulnerable to fluctuations in traditional energy prices. For example, the adoption of bioenergy and solar panels allows agricultural enterprises to achieve significant reductions in energy costs, enhancing their financial stability in the long term.

Access to new markets is another benefit of adhering to sustainable development principles. Enterprises can gain access to new markets for eco-friendly products by obtaining international certifications such as Global GAP or organic standards. This allows businesses to supply products to markets where consumers prefer goods produced with high environmental standards. Consequently, companies can command premium prices for their products, boosting profitability and gaining a competitive edge in global markets.

Finally, sustainable development improves corporate social responsibility. This includes creating new jobs, supporting local communities, and raising social standards. Agro-enterprises that take responsibility for implementing social programs can improve the quality of life for their employees and foster a positive public image, contributing to their long-term success.

Consequently, the implementation of sustainable development in the agri-food sector provides comprehensive benefits that ensure

economic efficiency, resource optimization, reduced environmental impact, and enhanced social responsibility for enterprises. These aspects not only improve the financial performance of agri-enterprises but also ensure their long-term sustainability and competitiveness in the global market.

Reducing environmental impact is one of the primary objectives of sustainable development in the agri-food sector. Globally, strategies aimed at minimizing negative effects on the environment are increasingly being implemented, focusing on reducing greenhouse gas emissions, decreasing energy and water consumption, and utilizing renewable energy sources. Modern scientific approaches to sustainable development emphasize the importance of ecological sustainability for ensuring the long-term stability of production systems, especially in the agricultural sector, which significantly impacts ecosystems and the climate

Reducing Greenhouse Gas Emissions

Agriculture is one of the key sources of greenhouse gas (GHG) emissions, such as methane (CH₄) and carbon dioxide (CO₂), which significantly contribute to global climate change. According to the Intergovernmental Panel on Climate Change (IPCC), agriculture is responsible for approximately 10-12% of total GHG emissions. Implementing sustainable practices can significantly mitigate this negative environmental impact.

One of the most effective approaches to reducing emissions is the adoption of organic farming and precision agriculture techniques, which lower the need for chemical fertilizers – a primary source of nitrous oxide (N₂O) emissions. These methods involve the efficient use of natural resources, minimizing nutrient loss, and improving soil quality, thereby reducing greenhouse gas emissions and enhancing the ecological resilience of agricultural systems.

Furthermore, the integration of energy-efficient technologies in production processes, such as the use of bioenergy or solar energy, can substantially decrease reliance on fossil fuels and reduce CO₂ emissions. For instance, studies indicate that the use of biogas systems in agriculture can lower GHG emissions by 30-50%, depending on the scale and type of production.

Reducing Energy Costs

In the agri-food sector, a significant portion of energy expenses is dedicated to maintaining the functioning of production systems, such as irrigation, greenhouse heating, and product processing. Implementing sustainable practices can drastically reduce energy consumption by transitioning to renewable energy sources, such as solar panels, wind turbines, or bioenergy systems. This not only lessens environmental impact but also helps enterprises become more resilient to fluctuations in traditional energy markets.

The use of renewable energy sources in agriculture also allows businesses to cut operational costs. For instance, the installation of solar panels to power irrigation systems and agricultural product processing can reduce electricity expenses by up to 50%, depending on the scale of production. Energy efficiency technologies also include the modernization of agricultural machinery and equipment, which helps decrease fuel consumption and reduce CO₂ emissions. For example, tractors with higher energy efficiency ratings consume less fuel, which not only lowers costs but also reduces the environmental footprint of the agricultural enterprise.

Reducing Water Costs

Water is one of the most vital resources in agriculture, and its availability is limited in many regions worldwide. Sustainable practices, such as precision irrigation, significantly reduce water resource expenses while improving water use efficiency in production processes. Precision irrigation technologies deliver the necessary amount of water directly to the plant root system, minimizing losses through evaporation and preventing inefficient water use.

In agricultural regions with limited water resources, the use of drip irrigation can reduce water consumption by up to 40%, which is essential for preserving aquatic ecosystems and maintaining agricultural stability in the face of climate change. Additionally,

reducing water costs also lowers the energy needed for pumping and delivering water to fields.

Implementing water resource management systems allows enterprises to monitor water usage and prevent wasteful consumption, helping to conserve water resources and maintain stable production processes even in regions with limited water supply. Reducing environmental impact through sustainable practices in the agri-food sector is crucial for long-term ecological resilience. Decreasing greenhouse gas emissions, cutting energy and water costs not only helps conserve natural resources but also provides economic benefits for enterprises by lowering operational costs and enhancing competitiveness.

To understand the actual impact of implementing sustainable development in the agri-food sector, let's examine case studies of specific enterprises that have incorporated sustainability into their strategies. These examples showcase changes in economic and environmental indicators before and after the integration of sustainable development principles.

The first example is Case Study of “Green Agro” Enterprise (Ukraine)

Before Sustainable Development Implementation: “Green Agro” used traditional farming methods focused on intensive use of chemical fertilizers and pesticides. Key challenges included high dependency on energy resources, rapid soil depletion due to monoculture practices, and a lack of long-term strategies for rational

water use. The enterprise faced frequent price fluctuations for fertilizers and energy, leading to profit instability.

After Sustainable Development Implementation: The company transitioned to organic farming and introduced crop rotation to maintain soil fertility. Chemical fertilizer use was reduced by 70%, and pesticides were replaced with biological plant protection methods. The implementation of precision agriculture reduced water and energy consumption by 20%. Solar panels were installed, making the enterprise partially energy-independent and reducing reliance on external energy sources. By shifting to organic production, “Green Agro” obtained certification and gained access to new export markets.

Outcome:

- **Economic Benefits:** Profitability increased by 25% due to reduced resource costs and entry into new markets.
- **Environmental Benefits:** Chemical usage was reduced by 70%, soil fertility was preserved, and CO₂ emissions were decreased by 30%.

The second example is Case Study of “EcoFarms” (Netherlands)

Before Sustainable Development Implementation: “Eco-Farms” operated as a mid-sized farm using intensive production methods aimed at maximizing yields through chemical fertilizers and pesticides. Key issues included high fertilizer costs, ongoing energy expenses, and significant soil and water pollution.

After Sustainable Development Implementation: The enterprise adopted precision agriculture and bioenergy systems, using agricultural waste for electricity production. A rainwater collection system reduced groundwater usage by 40%. Crop rotation was implemented to maintain soil fertility. The farm also started using organic fertilizers and biopesticides, which helped reduce pollution in local ecosystems.

Outcome:

- **Economic Benefits:** Fertilizer and water costs were reduced by 30%, crop yields increased by 15%, and profitability grew steadily.
- **Environmental Benefits:** Soil and water pollution decreased, biodiversity was preserved, and CO₂ emissions dropped by 25%.

The third is Case Study of “AgroTech” (USA)

Before Sustainable Development Implementation: “AgroTech” used standard crop cultivation methods with a high degree of mechanization but lacked a comprehensive sustainable development strategy. The enterprise faced high costs for energy and chemical fertilizers, along with soil erosion issues, which reduced long-term productivity.

After Sustainable Development Implementation: The company introduced digital field monitoring and management systems, focusing on precision agriculture. This allowed them to reduce

fertilizer usage by 20%, water consumption by 25%, and energy costs by implementing solar panels. To combat soil erosion, they adopted crop rotation and established shelterbelts along fields. Additionally, the enterprise invested in scientific research to improve its agrotechnologies, enhancing resource efficiency.

Outcome:

- **Economic Benefits:** Profitability increased by 18%, and energy costs decreased by 30%.
- **Environmental Benefits:** Soil erosion was reduced by 50%, and CO₂ emissions were cut by 40%.

The case study results demonstrate that implementing sustainable development principles in the agri-food sector yields both economic and environmental benefits. Enterprises that have adopted sustainable production methods have achieved significant reductions in resource costs, increased productivity, and minimized environmental impact. This approach not only enhances their competitiveness in the market but also ensures long-term stability and ecological resilience.

1.6. Institutional support for inclusive rural development

In the Presidential Decree “On the Sustainable Development Goals of Ukraine for the period up to 2030” of 2019 No. 722, the declared goals are based on an inclusive approach (well-being for

all, education for all, decent work for all, etc., and this is in line with the UN Sustainable Development Goals). As for agricultural goals, they envisage achieving food security and promoting sustainable agricultural development. Rural development is not discussed separately. Although in the UN Sustainable Development Goals, Goal 10 declares the reduction of inequality within the country (and we are talking about disparities between living conditions in urban and rural areas).

Rural development is considered inclusive, the result of which is the guarantee and creation of conditions for rural residents to use land and other local natural resources in economic activities, adequate distribution of the results of economic growth in agriculture and other sectors of the rural economy; participation in public and community life to unite communities and uphold human rights. Inclusive rural development results in poverty reduction and overcoming the economic, social, and political exclusion of people living in rural areas.²⁹ The researchers claim that despite declaring intentions to protect the interests of rural residents and agricultural producers, extractive development of agriculture and the rural regions prevailed. An essential factor in the transition to inclusive rural development should be Ukraine's implementation of measures to achieve the global Sustainable Development Goals.

²⁹ Inclusive Rural Development in Ukraine: Monograph. Dr. Econ. Doctor of Economics. Doctor of Economics, Professor, Corresponding Member of the National Academy of Sciences of Ukraine O.M. Borodina; National Academy of Sciences of Ukraine, State Institution "Institute of Econ. and forecasting National Academy of Sciences of Ukraine". Electron. data. K., 2020. 257 p. URL : <http://ief.org.ua/docs/mg/330.pdf> (in Ukrainian)

In order to implement rural development³⁰ Within the framework of the general policy of socio-economic development in European countries, the developed concept and procedure for adapting the policy to the needs of rural communities – *rural proofing policy* (launched by the United Kingdom, early 2000s) is being implemented. The main essence of this concept is village-centrism, positioning and securing the rural way of life on a national scale, which is a practical manifestation of an inclusive approach. Inclusion of rural development is achieved through meeting the needs of rural residents, protecting their rural business within the framework of state policies in various fields, taking into account the specifics of the socio-economic conditions of the village, the remoteness of services from consumers, the dispersion of the population and its social isolation³¹ in all state policies. The government is obliged to formulate and evaluate development policies from a village-centric perspective to ensure that their implementation does not exacerbate inequality and disproportions in the positions of the rural population and rural areas.

The institutional component of inclusive rural development refers to the rules and mechanisms that regulate the actions of the agents involved in this development. At the same time, institutions,

³⁰ Mantino, Francesco. Rural Development in Europe: Policies, Institutions and Actors on the Ground from the 1970s to the Present Day. A joint publication of the Food and Agriculture Organization of the United Nations and Business Media of the Sole 24 Ore, 2010.

³¹ Rural proofing: Practical guidance to assess impacts of policies on rural areas, March 2017. URL: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/600450/rural-proofing-guidance.pdf

on the one hand, as rules of conduct are set from the outside; in particular, these are the principles of national policy, the functions of government bodies, etc., enshrined in legislative and regulatory acts. On the other hand, these informal institutions are formed from within (the level of consciousness, culture, and self-organisation of citizens) and are aimed at intensifying local socio-economic development.

If we assess the situation in Ukraine before the war concerning the rural sector (respectively – rural residents, rural communities, and rural areas) according to the critical criterion of inclusion in state policy and the sphere of activity of authorities (executive, local self-government), the conclusions are sometimes disappointing. There was a separation of agricultural policy from the problems of rural development; such a policy harms the countryside and is detrimental to agriculture. Therefore, it needs to be reviewed and adjusted³². The rural sector "fell out" of the field of view of the authorities; there was a period when the departmental ministry was liquidated. This is an exceptional phenomenon because few countries worldwide do not have a central authority for agriculture (Box 1).

³² Borodina, O.M., Prokopa, I.V. (2018) *Maybutnye sil's'koho sektoru Ukrayiny – vid ekstraktyvnoho vykorystannya do inklyuzyvnoho rozvytku.* [The future of the rural sector of Ukraine is from extractive use to inclusive development.] *Ekonomika Ukrayiny*, № 11-12. Pp. 104-121. (in Ukrainian)

Renewal of the functions of the relevant ministries on agrarian and rural development

The new functions of departmental ministries in relation to agriculture in different countries are to pursue a public interest policy; it is not only about the economic and financial development of agricultural enterprises and agribusiness but also about the quality of food for consumers and the development of rural areas. In accordance with the new tasks of agricultural and rural development, the functions of the relevant ministries have been updated, and their names have been clarified accordingly:

- French Agriculture is also responsible for rural affairs;
- Portugal's Agriculture, Forestry and Rural Development;
- Germany's food and agriculture sector is being reformed with an increased emphasis on rural development;
- Agriculture and Agricultural Development of Israel;
- Environment, Food and Agriculture UK;
- Estonian Rural Affairs;
- agriculture and rural development in Poland;
- Sweden's Agricultural Agency coordinates not only agricultural policy but also rural development;
- Agriculture in the United States is recognised as a leader in the field of rural development, with activities aimed at creating jobs in rural areas, developing businesses, providing the necessary communications and housing, and preserving natural resources. The Department of Rural Development was established in 1935 and has a network of offices across the country as service centres.

Until recently, the Ministry of Economic Affairs, Agriculture and Innovation coordinated agricultural and agricultural policy issues in the Netherlands. After the reorganisation, the Ministry of Agriculture, Nature, and Food Quality was separated. For comparison, this country is 1.5 times larger than only one Kherson region of Ukraine, and in general, the area of agricultural land in the Netherlands is 23 times smaller compared to Ukraine.

Positioning rural development as a component of regional policy, the State Strategy for Regional Development for 2021-2027 (from 2020) provides for tasks in the direction of “Rural Development” with a number of relevant measures, including the development of farming, cooperation, ensuring the availability of markets for small and medium-sized agricultural producers, infrastructure for storing products; introduction of new technologies and equipment for processing agricultural raw materials. Therefore, Ukraine's Ministry for Communities, Territories and Infrastructure Development implements this task. Although from experience, the Ministry of Regional Policy mainly supported infrastructure projects in rural areas, it is evident that the infrastructure in the village can be good, and people leave the village because there is no work. Among the priorities of regional development until 2027, the strategy declares the priority of territorial inclusion – improving the quality and accessibility of services provided by state authorities and local self-government, *regardless of the place of residence, for the population.*

Thus, it is evident that rural development issues related to peasants and the rural population have not been brought to the proper level before the war and now, in the conditions of war. There is no clear division of powers between the central executive bodies; gaps exist in the integrated management of rural development.

The inadequate level of advocacy for the rights of peasants and rural residents as a professional group and territorial

community, which does not correspond to inclusiveness, led to the adoption of the UN Declaration on the Rights of Peasants and Other People Working in Rural Areas (endorsed by the UN Human Rights Council; resolution of 2018).³³ It is noted that along with the recognised vulnerable social groups, it is essential to identify and implement the collective rights of peasants and rural populations as specific social groups with special interests and societal positions. Ukraine supported (by voting) this UN Declaration, and further steps are needed to implement its provisions on protecting the rights of peasants and rural settlements in the context of their comprehensive inclusion in development processes.

On the one hand, the rights of peasants are an element of inclusiveness, and on the other hand, it is a tool that limits the rule of power structures and acts as a guarantor against abuse of power. As for human rights, there are several procedural rights (ways of action available to a person and institutions that allow them to achieve the realisation of human rights), so there is a need for mechanisms to protect the collective rights of peasants and rural population, namely, the right to development, peace, a healthy environment, and communication. The UN Vienna Declaration on the Right to Development of 1990 recognises that development contributes to the realisation of all human rights and that the human being is a fundamental subject of development.

³³United Nations Declaration on the Rights of Peasants and Other Rural Workers. URL https://digitallibrary.un.org/record/1650694/files/A_HRC_RES_39_12-RU.pdf

Proposals for institutional support for inclusive rural development relate to the following³⁴.

Firstly, at the national level, it is expedient to recognise the critical task of the state as the formation of equal living conditions in cities and villages. Significant differences exist in the levels and quality of living in these subsystems of society. Effective rural development programs at the national level, fair economic relations, and public solidarity are needed to support the rural segment. Rural dwellers should actively participate in social development and benefit from its fruits.

An example of a progressive movement towards the inclusion of the rural sector in social processes is Germany, and above all, its national policy in the context of inclusiveness – “equivalence of living conditions” as the basis of the “general strategy” (Box 2).

Box 2

"Equivalence of living conditions" in cities and villages – strategic vector of development in Germany

The goals the government has pursued since 2018 include creating equal living conditions in capable communities in urban and rural areas, in the East and in the West (living conditions should not differ much in cities and villages). The Basic Law will present the goal as the foundation for social cohesion. Legislative competence for this purpose is defined at the level of the Federation, the Commission "Equivalent Living Conditions" of the Federal Government, the federal states and municipal associations

³⁴ Popova, O.L. (2020) Instytutsiyni aspekty inklyuzyvnoho sil's'koho rozvytku. Inklyuzyvnyy sil's'kyy rozvytok v Ukraini [Institutional aspects of inclusive rural development. Inclusive rural development in Ukraine] : monohrafiya / za red. d-ra ekon. nauk, prof., chl.-kor. NAN Ukrainy O.M. Borodinoi ; NAS Ukrainy, DU «In-t ekon. ta prohnozuv. NAN Ukrainy». Elektron. resurs. K., 257 p.; tabl., rys. URL : <http://ief.org.ua/docs/mg/330.pdf> (in Ukrainian)

have been established; consultations were held in specialised working groups; The German Foundation for Volunteering and Social Activities was founded. Thus, a new support system for the rural segment is being formed to overcome the growing inequality between cities and rural areas.

To achieve this goal, attention is being paid to rural development, although this development has been an integral component of support to this day. Developing a Special Framework Plan "Rural Development" is envisaged, cross-tasks related to different departments. This is happening in the development of the direction of agricultural policy "to preserve the vitality of rural areas" (vitality means vitality, vitality, vitality). With all the diversity of initial conditions in rural areas, it is about to lay the foundations for their prosperity and ensure a decent standard of living for rural residents³⁵.

Secondly, strengthening the cohesion of communities within ATC will contribute to their integration and inclusion. In amalgamated communities, which are now multi-communities, without a proper cohesion policy, there is a danger that they may remain a cluster of isolated internal communities with a pronounced dichotomy "centre-periphery" and few common interests.

The divergence nature of development in ATC has been statistically confirmed (using the means of econometric analysis of the socio-economic status of 36 ATC; 2018-2019)³⁶. At the same time, convergence (rapprochement) of communities would be more desirable, and experts hope to introduce e-democracy and develop

³⁵ Agriculture at the center of society. Determination of the directions of agrarian policy and some data on the current state of agriculture. Berlin, BMEL, 2015; Germany's Rural Development Policy: Presentation. Slide 9-12.

³⁶Effective model solution for ATC. Economist. 30.01.2020. URL : <http://ua-ekonomist.com/18874-efektivne-modelne-rshennya-dlya-otg.html>

convergence. The integration process is a prerequisite for forming an integral and inclusive ATC. At the same time, we are talking about integration in amalgamated communities as a two-way process and not about integrating rural communities into an urban amalgamated community, as they often say now, assigning the task of integration only to rural communities.

It is expedient to strengthen the cohesion of communities in all spheres of public life (not only social and environmental, which took place in several ATC), especially in the economic sphere (individual practices have been initiated). More than half of Ukrainians are ready to clean and improve the territory at their place of residence ³⁷, and many citizens are unaware of public activities in other areas (in particular, they do not agree to ensure law and order at their residences). Therefore, there is a need for educational work on the forms of cohesion of rural residents in unusual areas, including the economic one. Undoubtedly, the cohesion of communities in the economic sphere largely depends on the balanced activities of local self-government bodies. First of all, it is important to involve residents in the development of ATC development strategies; departments of economic growth, income and investment, which are allocated in the structure of the executive committees of ATC, should ensure the inclusive development of local projects for the development of the local economy, etc.

³⁷Local initiatives and public involvement in the implementation of local self-government. Study. Pic. for local self-government officials Karyi O.I., Panas Y.V. / K.: LLC "Enterprise "V.N.A.", 2015. P. 7.

Thirdly, it is expedient to introduce the tools of participatory democracy. On the one hand, it is about the formation of rural residents as conscious, socially active citizens with a clear civic position. On the other hand, local self-government bodies create conditions so that they can fully use the provided channels and legitimate tools to direct their claims so that their voices have been heard in developing and implementing measures (affecting their lives and shaping their common future). And this is one of the characteristics of inclusive local self-government. Twelve principles of reasonable/good governance at the regional level are proposed in the European strategic documents and align with the context of inclusion³⁸.

The criteria for measuring inclusion concerning peasants and rural population can be as follows (from low to higher level):

1. *Visibility*: development needs and problems are recognised at the national and local levels, in particular, the creation of equal living conditions in the village and in the city;

2. *Consideration*: they are taken into account by the authorities in the development of policies and mechanisms for their implementation, including the approach of village-centrism (European approach of rural proofing);

3. *Interaction*: interaction at the levels of state and local authorities is ensured in the implementation of the relevant policy;

³⁸ European Strategy for Innovation and Good Governance at the Local Level. URL : http://www.slg-coe.org.ua/wp-content/uploads/2015/05/Strategy_for_Innovation.pdf

4. *Rights: individual and collective*: to act and demand access to key resources for life (land, water, forests, etc.) and services (housing, education, transport, health care, etc.), the realisation of the right to work and development.

Box 3

Opinion of the ATC head as a preface on inclusion in the field of Rural Development

First, harmony and like-mindedness are necessary for the community to be capable.

I recently visited Germany, where I heard the following story: A man who lived on a remote farm and made craft schnapps there demanded that the community install a fibre-optic Internet cable to his home. “I pay taxes; please do what I need to work and live comfortably.” The community laid this cable, spending a lot of money on it, because it does not consider this man's farm unpromising³⁹.

The following levels distinguish citizens' involvement in local self-government: low information provision to high partnership and public administration (Fig. 10).

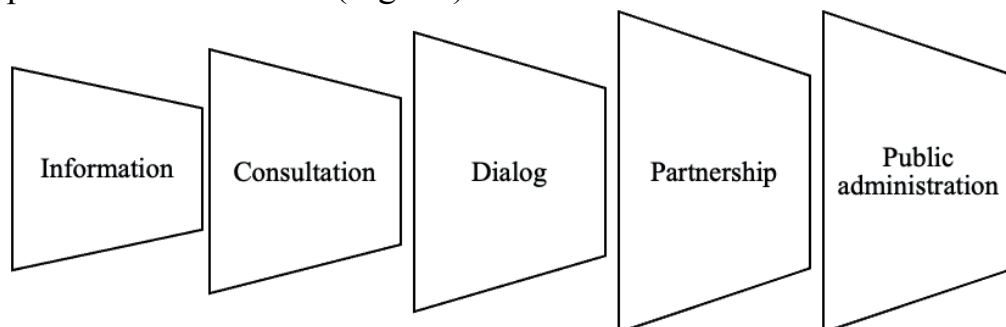


Figure 10. Levels of public involvement in local affairs by self-government bodies

Source: compiled by the authors

³⁹ How a small community overcomes the demographic crisis. Reportage. 23.12.2019. URL <https://decentralization.gov.ua/news/12016>.

However, although legally defined forms of citizen engagement (local referendum, general meeting of citizens, regional initiatives, public hearings, self-organisation bodies, head of the community, etc.) are used in practice, their effects sometimes could be higher due to their formal nature. The development of e-democracy based on information technologies (the most common today is electronic petitions and participatory budgets) expands public participation in self-government and provides more opportunities for citizens to self-organize both to solve urgent problems of the rural community and to implement local assets jointly.

At the same time, it should be noted that experimentally and as a result of the analysis of the practice of local self-government in Ukraine, it was established that the smaller the community, the easier it is to move to a higher level of involvement of its members in public affairs. In large cities, it was possible to achieve the 3rd level of cooperation – dialogue with citizens, while in small and medium-sized settlements, they sometimes reached the 4th level of collaboration – and this is already a partnership with the community)⁴⁰.

Thus, institutionalisation's strategic task in the context of inclusive rural development is to create an appropriate environment where rural residents can participate actively in social processes, integrate, and self-organize to develop their communities. This

⁴⁰ Local initiatives and public involvement in the implementation of local self-government. Study. Pic. for local self-government officials Karyi O.I., Panas Y.V. / K.: LLC "Enterprise "V.N.A.", 2015. P. 16.

depends on the formation of a national policy on inclusive rural development and the relevant policies and instruments at the local level by self-government bodies. Commons, the living environment is the subject of the collective creativity of residents in partnership with local self-government bodies and entrepreneurs.

***CHAPTER 2. TRANSFORMATIONS, RISKS AND FACTORS
AFFECTING INCLUSIVE DEVELOPMENT OF AGRI-FOOD
SECTOR IN UKRAINE DURING THE CONDITIONS OF
MARTIAL LAW***

2.1. Peculiarities of the development of the economy and food security of Ukraine under martial law

Supporting the economy and food security is vital for our state in wartime conditions. February 24, 2022 marked the beginning of a new phase in Ukraine's history. The economic losses and prospects of Ukraine as a result of Russian aggression cannot yet be accurately assessed. This is because the war is ongoing and its consequences are not yet final. However, it is already clear that the scale of damage is enormous. This is manifested both in human losses for our country and in economic losses, which are embodied in the outflow of labor, low purchasing power of the population, low productive capacity of business, etc. In the agricultural sector, this is manifested in the fact that a large share of land is under occupation or was previously under occupation and is currently unsuitable for growing agricultural products. For us, this gives us the basis for understanding that the recovery of Ukraine's economy after the war will be a complex and lengthy process. To make it successful, it is necessary to develop a clear strategy and set priorities. In addition,

ensuring Ukraine's food security becomes one of the most important tasks. The war in Ukraine has shown that our country is one of the world's major grain producers. The blockade of export routes for Ukrainian agricultural products has led to a global food crisis. To prevent this crisis, Ukraine must resume grain exports. In addition, it is necessary to strengthen the domestic economy as a whole. To do this, it is necessary to stimulate the development of industry, agriculture, tourism and other sectors of the economy.

The basis of the post-war reconstruction strategy should be a change in the structure of the economy in line with national interests, improvement of the quality of life of Ukrainians, including security guarantees and Ukraine's status as a leading player in the global market, which should provide mechanisms for the institutional capacity of the state to win on the economic front. We cannot win a military war and lose an economic war, and such facts have already happened in human history. To do this, it is also necessary to change the systemic approaches to assessing economic phenomena and results, since the system used in the industrial economy, mainly through GDP, does not take into account the quality of life of the population, socio-political problems, environmental impact, production efficiency, the consumer price index reflects the change in the value of the “consumer basket,” and given the individualization of consumption, it can be completely

different for different groups of consumers, which raises many questions about the average inflation rate ⁴¹.

During this war, various national and international scholars already turned their attention to issues of economic development and food security. We can present in the form of table (table 7).

Table 7. Views of scientists on the issue of economic development and food security

Scientists	Object of investigation
Kovalova O., Vytvytska O., Rybchynskiy R., Kupchenko A., Tkachenko S.	Within the framework of their researches develop scientific-methodical provisions and practical recommendations for improving food security monitoring indicators in order to make prompt management decision-making ⁴² .
Lagodiienko V., Franchuk V., Dziurakh Yu., Melnyk S., Shuprudko N., Gabela V.	Identified the overall level of food safety in Ukraine and suggested the main areas for its improvement ⁴³ .
Béné C., Bakker D., Chavarro M. J., Even B., Melo J., Sonneveld A.	The first global assessment of the impact of COVID-19 on the global food system and its players. They provided and presented the abovementioned results in their research. The study

⁴¹ Shynkaruk L., Dielini M., Vlasenko T., Svyrydenko D. & Lagodiienko V. (2023) Determinants of Ukrainian economic and food security development under the conditions of martial law. *Financial and Credit Activity Problems of Theory and Practice*, 4(51), 311–319. <https://doi.org/10.55643/fcaptop.4.51.2023.4120>

⁴² Kovalova, O., Vytvytska, O., Rybchynskiy, R., Kupchenko, A., & Tkachenko, S. (2023). FOOD SECURITY MONITORING UNDER MARTIAL LAW CONDITIONS. *Financial and Credit Activity Problems of Theory and Practice*, 2(49), 274–286. <https://doi.org/10.55643/fcaptop.2.49.2023.4004> (in Ukrainian)

⁴³ Lagodiienko, V., Franchuk, V., Dziurakh, Yu., Melnyk, S., Shuprudko, N., & Hobela, V. (2022). FOOD SECURITY OF UKRAINE. : ESTIMATION OF FACTORS'IMPACT, PESTWAR TREMDS AND WAYS TO SUPPLY. *Financial and Credit Activity Problems of Theory and Practice*, 5(46), 427–437. <https://doi.org/10.55643/fcaptop.5.46.2022.3891> (in Ukrainian)

	focused on food security and nutrition in low- and middle-income countries that were affected by the pandemic ⁴⁴ . This investigation is important to analyse as it defined the food security situation in different countries after the global pandemic and the fact that the war in Ukraine could exacerbate the situation due to the lack of possibilities to supply agricultural food products.
Nabuuma D., Reimers C., Hoang K. T., Stomph T. J., Swaans K., Raneri J. E.	Investigated how seed supply affect food security, household resilience, nutritional quality, etc ⁴⁵ .
Kurman T.V.	Studied the issues of legal support and functioning of the agri-food sector under martial law in Ukraine ⁴⁶ . Concluded that the problem of creating a comprehensive mechanism for legal support of Ukrainian food security is of an extremely relevance.
Blahopoluchna A.	Investigated the topic of establishing grain corridors to ensure food security in the context of the war in Ukraine ⁴⁷ .

⁴⁴ Béné, C., Bakker, D., Chavarro, M. J., Even, B., Melo, J., & Sonneveld, A. (2021). Global assessment of the impacts of COVID-19 on food security. *Global Food Security*, 31, 100575. DOI: <https://doi.org/10.1016/j.gfs.2021.100575>

⁴⁵ Nabuuma, D., Reimers, C., Hoang, K. T., Stomph, T.J., Swaans, K., Raneri, J. E. (2022). Impact of seed system interventions on food and nutrition security in low- and middle-income countries: A scoping review. *Global Food Security*, 33, 100638. DOI: <https://doi.org/10.1016/j.gfs.2022.100638>

⁴⁶ Kurman T.V. (2022) Ahrobiznes ta prodovol'cha bezpeka: zahrozy ta problemy pravovoho zabezpechennya v umovakh voyennoho stanu [Agribusiness and Food Security: Legal Enforcement Threats and Challenges in Martial Law]. *Analitychno-porivnyal'ne pravoznavstvo*. №3. C. 122-126. DOI : <https://doi.org/10.24144/2788-6018.2022.03.22> (in Ukrainian)

⁴⁷ Blahopoluchna, A. (2022). EKONOMICHTNA DOSTUPNIST' PRODOVOL'STVA V UMOVAKH VIYNY [ECONOMIC AVAILABILITY OF FOOD IN THE CONDITIONS OF WAR]. *Ekonomichni horyzonty*, (3(21), 13–20. DOI : [https://doi.org/10.31499/2616-5236.3\(21\).2022.263549](https://doi.org/10.31499/2616-5236.3(21).2022.263549) (in Ukrainian)

Ben Hassen T., El Bilali H.	Studied the impact of the war in Ukraine on international food security, as many world countries, especially from the following regions as Middle East and North Africa, depend on imports of agri-food products, from Ukraine as well ⁴⁸ .
Maddison Project Database	Analytical data is provided, including historical data.
EBRD	Already assessing the scale of the impact and the level of investment needed to restore Ukrainian economy.
Stockholm international peace research institute	Presents statistical information on arms spending and analyses global arms spending.

Source: compiled by the authors on the base of Shynkaruk L., Dielini M., Vlasenko T., Svyrydenko D. & Lagodiienko V. (2023) Determinants of Ukrainian economic and food security development under the conditions of martial law. (<https://doi.org/10.55643/fcaptop.4.51.2023.4120>)

Other analytical agencies (Ukrainians and foreign once) and agri-food portals also analyse the impact of the war in Ukraine on global food security, drivers that affect economic revenues to Ukraine, EU measures to resolve food supply issues in different countries, FAO's actions to ensure world food security, etc.

The study of these literary sources made it possible to systematize the assets of scientists and analysts and to draw conclusions regarding the definition of determinants that affect the economic development and food security of Ukraine under martial

⁴⁸ Ben Hassen T, El Bilali H. (2022) Impacts of the Russia-Ukraine War on Global Food Security: Towards More Sustainable and Resilient Food Systems? *Foods*. 11(15):2301. DOI : <https://doi.org/10.3390/foods11152301>

law. In addition, it is worth noting that the main focus of the attention of scientists is the study of the issues of ensuring food security in the world, taking into account the war in Ukraine, and not the study of economic issues, the structure of our country's economy, the identification of “narrow” points that have negative consequences on the dynamics of economic indicators in the current situation.

The purpose of our research is to determine the peculiarities of the development of the economy and food security of Ukraine in the conditions of martial law.

As it was already noted in previous works of the authors⁴¹, according to government estimates, the national economy fell by about 30% in 2022, with some sectors of the economy suffering much more, and in the absence of the same export opportunities provided to the Ukrainian agriculture by the grain deal brokered by the UN and Turkey, metallurgical exports fell by 62%. Grain, sunflower oil, and other agricultural products have become Ukraine's main exports and generate a significant portion of foreign exchange earnings from commodity exports. In recent years, the structure of Ukraine's exports has been dominated by agriculture, metallurgy, and services (including gas transit revenues). The structure of Ukraine's economy (2021) shows that among the sectors, the largest share of the Ukrainian economy is wholesale and retail trade (13.8%), agriculture/forestry/fisheries (10.6%), processing industry (10.3%), and 6.7% is mining and quarrying,

which confirms the need to move to a high value-added economy. The one-third drop in Ukraine's GDP cannot be explained solely by military factors, as the aforementioned structural features and the raw material nature of the economy are an important factor in the vulnerability of any economic system.

During the Second World War, in 1941-1945, such a drop in GDP was not detected (see Table 1), neither in Germany (1941 +6.3%, 1942 +1.3%, 1944 +2.5%, 1945 -28.9%), nor in the USSR (1941 -13.9%, 1942 -23.7%, 1944 +18.7%, 1945 -5.2%). Although today's military aggression of the Russian Federation and the conditions of the war are radically different, the need to reform governance at the state level is undeniable and inevitable, as the above-mentioned 30% decline in GDP in Ukraine calls into question whether it is caused solely by military factors, since structural imbalances in the economy and the raw material nature of the economy are an important factor in the vulnerability of any economic system.

According to the EBRD, “only 29% of post-conflict economies reach pre-war levels of GDP per capita within five years. For Ukraine to recover within five years, the economy would have to grow by 14% per year throughout this period. This will raise

average GDP to \$225 billion from about \$150 billion in 2022 at constant prices”⁴⁹.

Table 8. GDP dynamics, 1941-1945, % year to year⁵⁰

Countries	1941	1942	1944	1945
Germany	6,3	1,3	2,5	-28,9
USSR	-13,9	-23,7	18,7	-5,2
Italy	-1,2	-1,2	-18,8	-21,7
France	-20,9	-10,4	-15,5	8,4
United Kingdom	9,1	2,5	-3,9	-4,4
USA	18,2	20,0	8,4	-4,0

Source: compiled by the authors based on Maddison Project Database.

URL : <https://www.rug.nl/ggdc/historicaldevelopment/maddison/?lang=en>

According to the Stockholm International Peace Research Institute, global arms spending grew by 3.7% in 2022 and reached a record \$2.24 trillion. In Europe, growth was 3.6%, which has not happened since the end of the Cold War. Researchers attribute this to the war in Ukraine. Today, arms spending accounts for 2.2% of global GDP, and this figure is expected to grow amid promises of new arms purchases, inflation, Russia's continuing war, and tense relations between the United States and China. Expenditures on armaments by different countries, including Ukraine and Russia, in 1990-2022 are shown in Fig. Figure 11 illustrates the defense

⁴⁹ YEBRR otsinyv potreby shvydkoho vidnovlennya Ukrainy v 250 mil'yardiv dolariv investytsiy. Ekonomichna pravda. 16 travnya 2023 r. URL : <https://www.epravda.com.ua/news/2023/05/16/700171/> (in Ukrainian)

⁵⁰ Maddison Project Database. URL : <https://www.rug.nl/ggdc/historicaldevelopment/maddison/?lang=en>

expenditures of different countries of the world, including Ukraine during 1990-2022.

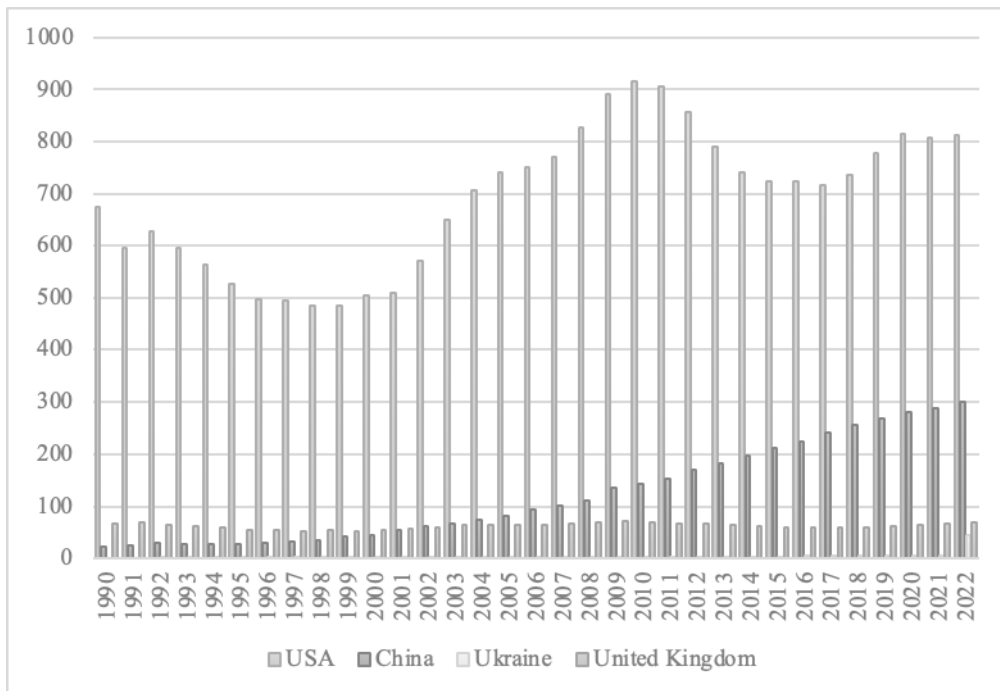


Figure 11. Expenditures on armaments of different countries of the world, 1990-2022, constant prices, \$bn

Source: compiled by the authors based on SIPRI military expenditure database. URL : <https://sipri.org/databases/milex>

The figure 11 indicates that the highest military expenditures during the presented period were in the United States with a notable rise in 2010. While other listed countries did not perform dramatic fluctuation in their expenditures. But China's result is remarkable because it has consistently increased its military budget since 2005. By the year of starting full-scale invasion of russia in Ukraine, China rose military budget by 3.6 times compared to 2005. This highlights a

significant shift in the country's economic focus. In Ukraine, this type of expenditure was insignificant earlier, until the onset of the full-scale invasion in 2022, it surged by 7.5 times compared to 2021. However, in order to sustain spending on armaments and ensure security, Ukraine generally needs adequate funding, which is not enough now, taking into consideration the above mentioned.

Furthermore, one of the primary demands of the population, businesses, investors, that they expect as a must-have guarantee of the state, undoubtedly will be awaiting of security. It is constantly growing alongside with the increasing of the human life value. This encompasses various forms of protection against different threats like wars, fires, tornadoes, terrorism, cyberattacks, and hunger. The military hostilities in Ukraine have severely disrupted operation of global and Ukrainian food systems. That is the fact that Ukraine has been playing a crucial role in fulfilling food security all over the world for many years. It is due to Ukrainian agricultural production and exports, that made it possible to provide enough food to sustain approximately 400 million people in 2021. Consistently ranking among the top five exporters of grains and pulses worldwide, Ukraine's significance became particularly clear during the COVID-19 pandemic when global supply chains were strained. Despite all above-mentioned Ukraine coped to meet all its obligations and made significant contribution to the food security of partners from the Middle East, Europe, South-East Asia, and the North Africa.

In 2021, Ukraine joined the UN Committee on World Food Security, which reports to the UN General Assembly through the UN Economic and Social Council and the UN Food and Agriculture Organization (FAO) conference ⁵¹. This is logical and decent, as Ukraine is a key player in ensuring global food security and a leading exporter of various agricultural crops.

If we look back to the times of World War II, the topic of food security was a hot issue, as was demonstrated by the *Hunger Plan* (ger. Der Hungerplan, also der Backe-Plan), the name of the plan of the political and military leadership of the Third Reich, which aimed to obtain additional food for the German occupation forces and the German population. The plan anticipated that around thirty million residents of the occupied Soviet territories would perish from starvation as a result of its execution. Historian Christian Gerlach noted that this plan was considered the official policy of the authorities and was consistently implemented after the attack on the Soviet Union⁴¹.

The war of the Russian Federation has once again proved the importance and value of providing food to the population, and one of the important decisions of the United Nations (02.03.2022) was an emergency appeal in support of Ukraine (FLASH APPEAL UKRAINE) and expressed concern about the sharp deterioration of

⁵¹ Ukrayina uviyshla do Komitetu prodovol'choyi bezpeky OON. AgroPolit.com. URL : <https://agropolit.com/news/19610-ukrayina-uviyshla-do-komitetu-prodovolchoyi-bezpeki-oon> (in Ukrainian)

the situation with the integrity of the food system in Ukraine in the context of the military aggression against Ukraine due to the abandonment of farmers and other small agricultural producers in the war-affected territories. An important fact that the international community should pay its special attention to is that while Ukraine was forced to reduce wheat exports in 2022 to 13 million tons, compared to 20 million tons in 2021, Russia increased its exports during this period from 33 million tons to 38 million tons (USDA), which raises the issue of expanding sanctions against the export activities of the aggressor country⁴¹.

NASA Harvest uses satellite imagery to model wheat harvests, and according to the results of the modeling for Ukraine, Russia harvested \$1 billion worth of wheat in occupied Ukraine in 2022 (NASA Says). It should be mentioned that is not only a decrease in Ukraine's participation in global food security, but also a decline in the prospects for the development of the agricultural sector, a decrease in foreign exchange earnings, and a decrease in the standard of living and food security of Ukraine. In addition, a quarter of Ukrainian wheat is grown on land seized by Russia, and almost 6 million tons of wheat and about 88% of winter crops sown in the occupied territories were harvested from the territories not controlled by Ukraine, and the unharvested areas were mainly along the front line⁵². The above information raises the question of the

⁵² Aine Quinn, Agnieszka de Sousa. Russia reaped \$1 billion of wheat in occupied Ukraine, Nasa says. 3 December 2022. Bloomberg. URL :

likelihood of russian exports of grain taken from the occupied territories to countries such as Libya, Iran and other countries. Although it is difficult to evaluate the volume of grain, as shippers may conceal the origin of the cargo, it should become an evidence base in lawsuits regarding the crimes of the russian federation in Ukraine.

The ban on exports of Ukrainian agricultural products to some EU countries has become a serious problem for Ukrainian farmers, as the main export route is through the EU. The European Commission imposed temporary restrictions on imports of Ukrainian wheat, corn, rapeseed and sunflower seeds to several Eastern European countries, namely to Bulgaria, Hungary, Poland, Romania and Slovakia. Imports of these products are banned until June 5, 2023. The transit of goods through these countries to other EU countries or outside the EU may continue. At the same time, the European Commission is ready to reintroduce these measures after June 5, as long as the exceptional situation persists. “These measures are necessary in view of the exceptional circumstances of serious logistics bottlenecks faced by five EU member states,” Brussels said. At the same time, Bulgaria, Hungary, Poland and Slovakia have pledged to lift their unilateral bans on wheat, corn, rapeseed and sunflower seeds, as well as other products coming from Ukraine, the European Commission said.

Polish agricultural market players say that despite the declaration of agricultural products as transit, significant volumes of grain still “settle” in the country, and the range of products is constantly expanding. But this story is not so easy as it could seem. Despite the complaints and strikes, there is a rather simple pragmatic interest that caused this issue. Ukrainian grain is sold at a discount, although Polish processors deny this and assure that they are not create any problems to Ukrainians⁵³.

What is the grain market like today and what are the forecasts for the future - these issues were discussed by global experts at the international forum EURO GRAIN HUB, held on 26-28 April in Bucharest. UkrAgroConsult and AgriPortal (Romania) organized this event. Mykola Gorbachev, President of the Ukrainian Grain Association, said: “When we ask about price trends - whether upward or downward - the answer lies in Ukraine. If Ukraine exports 14 million tonnes of grain, there will be one result, and if it exports only 5 million tonnes, the situation will change dramatically. Of course, Europe can import from Brazil or Argentina, but the cost of delivery is significantly different.”⁵⁴.

The NBU's macroeconomic forecast for Ukraine shows that export restrictions will temporarily lower food inflation in 2023 by

⁵³ Shalenny eksport. Doroha zerna cherez Pol'shchu. 13 bereznya 2023. Latifundist.com. Holovnyy sayt pro ahrobiznes. URL : <https://latifundist.com/spetsproekt/1006-shalenij-eksport-doroga-zerna-cherez-polshchu> (in Ukrainian)

⁵⁴ Forum Euro Grain HUB : tsiny na zerno v Yevropi zalezhat' vid Ukrayiny. 8 travnya 2023. Latifundist.com. Holovnyy sayt pro ahrobiznes. URL : <https://latifundist.com/reportazhy/158-forum-euro-grain-hub-tsini-na-zerno-v-yevropi-zalezhat-vid-ukrayini> (in Ukrainian)

increasing domestic supply, but this will complicate farmers' operations and may force them to reduce crops, which will negatively affect economic activity and increase pressure on the exchange rate. Moreover, Turkey, Ukraine, Russia, and the UN failed to reach an agreement on new grain-exporting ships during negotiations on May 5, 2023.

We perform the peculiarities of the agricultural industry of Ukraine in Figure 12.

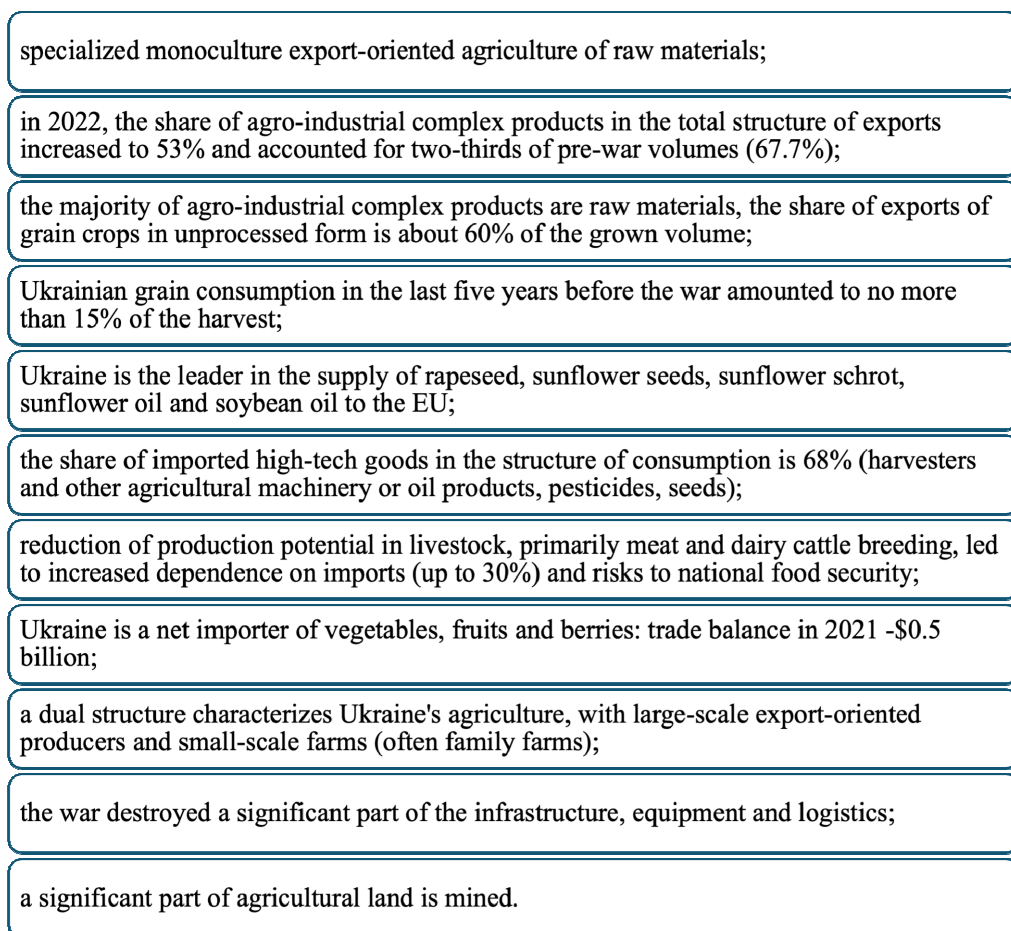


Figure 12. Features of the agricultural industry of Ukraine

Source: compiled by the authors

Against the backdrop of problems with grain exports, it's crucial to highlight that Ukraine has traditionally produced significantly more grain than it consumes. Grain consumption in Ukraine over the past five years before the war was no more than 15% of the harvest, and during the war, along with a shrinking population and low purchasing power, domestic consumption fell even further, leading to a narrowing of the domestic food market.

In contrast to the contraction of the domestic market, the demand for the main types of Ukrainian agricultural exports on the global market remained and even increased. This enabled major producers and traders to concentrate primarily on international markets, regardless of their volatility. A significant factor in this policy of large agribusiness was the fact that their activities were not regulated by the state in any way, and it is unacceptable to continue this practice.

Five Eastern European countries (Bulgaria, Hungary, Poland, Romania, and Slovakia) significantly increased their imports of Ukrainian agricultural products in 2022. They imported 4 million tons of corn and 1.3 million tons of wheat from Ukraine in 2022, compared to only 23,000 tons and 3,000 tons, respectively, in 2021. In percentage terms, these increases amount to 17 thousand percent and 40 thousand percent. Imports of sunflower and rapeseed increased by 3800% and 900% compared to last year. Imports of sunflower oil increased by 600%. The total value of imports of these

five commodities amounted \$4.3 billion in 2022, compared to only \$260 million in 2021, an increase was noted of more than 1500%⁴¹.

Eastern Europe accumulated most of the products that has to be shipped to Africa and the Middle East. This led to a glut of corn, wheat, and sunflower seeds, and as a result, caused decline in local prices.



Figure 13. Selected agricultural products exported to neighboring countries, 2019-2022, million USD.

Source: Charting Ukraine's soaring exports to the EU. The Economist. 27th April 2023. URL: <https://www.economist.com/graphic-detail/2023/04/27/charting-ukraines-soaring-exports-to-the-eu>

The war destroyed traditional and established agri-food supply chains, which has once again confirmed the vulnerability of both the domestic model of agri-food specialisation and the modern global agri-food system as well. All crises create conditions for the transformation existing economic models, and Ukraine's agricultural

sector is at the forefront of these changes due to the need to urgently transform the export specialisation model. The current situation with food exports to Europe suggests that changes will be driven by global factors, while the role of national factors remains unclear. In 2019, the State Statistics Service of Ukraine developed methodological guidelines for the preparation of balance sheets of major agricultural products of crop and livestock production. These guidelines reflect the movement of products from production to final consumption, enabling a general overview of Ukraine's food and agricultural landscape. They also provide calculations of the consumption of basic foodstuffs by the population and the average daily consumption of basic micro- and macroelements in foodstuffs by one person. This methodological guidelines take into account the requirements and recommendations of the Food and Agriculture Organisation of the United Nations for the development of food balances. The information derived from these balances should become the basis for economic calculations of the formation of a modern and full-fledged food security system in Ukraine in the post-war economy and participation in the global food security system.

As a result of provided investigation and literature study, we can make the following discussion points: scholars research food security issues in terms of providing the world with food in the context of the war in Ukraine. Since Ukraine is a significant supplier of grain and other agricultural crops to the world market, russian aggression could lead to food shortages in many countries and even

food crisis and famine in different regions. But the issue of the structure of the economy and the state of Ukraine's food supply reflects that, in addition to global security issues, our country must face the issue of its own security and economic independence from other countries. For example, for a certain period of time, there was a ban on the export of agricultural products to certain EU countries, which shows that, on the one hand, there is a real food threat in the world because of the war in Ukraine. However, on the other hand, not all EU countries are interested in importing Ukrainian agricultural products, which negatively affects the development of ukrainian economy.

That is, it is debatable whether Ukraine should first and foremost ensure its own economic growth and food security, covering its own needs. This research identified certain problems in the structure of the national economy, but scientists tend to focus only on global food security. It is highly needed reorientation of the economic course of our country to create a balanced economic structure, equalization of imbalances, including in the agricultural sector, production of high value-added products, and consideration of the latest EU environmental trends in agricultural production (Green Deal). That changes will allow us to form a stable and sustainable economy that is less dependent on external determinants.

The transformation of the agricultural sector in the context of Ukraine's wartime economy and its rapprochement with the EU is inevitable and should take into consideration the opportunities and

risks of ensuring food security in the context of climate change and biodiversity loss, reducing the environmental and climate footprint and increasing the resilience of the EU food system, as declared by the European Green Deal of 2019. This new vision will require a change in philosophy and approach to cultivation and processing in rural areas. In the context of national food security, it is of great importance to ensure that people have physical and economic access to sufficient, safe and nutritious food at all times, regardless of whether this food is locally produced or imported; produced using traditional or innovative technologies; or whether its production is sustainable (socio-economic and environmental), etc.

The creation of national food security should take into account the concept of Food Sovereignty, which emphasises the importance of local food production, taking into consideration the cultural traditions of the community as well as the ideas of humanitarian justice, multiculturalism, and gender equality. Food Sovereignty declares the achievement of the goal of providing the population with locally produced food, while using certain methods, primarily agroecological ones.

Guaranteeing national food security, grounded in the reproduction and conservation of natural resources of agricultural production, should become the basis for a gradual transition from a highly specialized mono-product structure of agri-food production and exports to a structure that takes into consideration national economic interests and security factors in a broad context.

The restoration of Ukraine's agricultural sector in post-war period and its contribution in ensuring global and national food security should be carried out in accordance with the concept of ecological resource-saving agriculture, which meets the goals of conservation and reproduction of natural resources.

The war demonstrated the falsity of the current and provided policy of developing Ukraine's agricultural sector and stimulating productivity growth through intensification and scalability through large-scale production, unwillingness to direct the development of the agricultural sector towards deeper processing and development of farms, and to adapt Ukrainian legislation to the EU norms.

The wrong policy for the development of the agro-industrial complex has resulted in challenges that have arisen not only because of Russia's blockade of ports, but also because of export restrictions on agricultural raw materials that were imposed by our partners, as well as reduction of opportunities for agricultural development in the context of war.

The issue of Ukrainian agricultural exports to Europe has demonstrated that farmers will have to study to work within the EU in a way that will not only benefit them, but also ensure the stability of Ukraine's economy and the quality of life of Ukrainians⁵⁵.

⁵⁵ Shynkaruk L., Dielini M., Vlasenko T., Svyrydenko D. & Lagodiienko V. (2023) Determinants of Ukrainian economic and food security development under the conditions of martial law. *Financial and Credit Activity Problems of Theory and Practice*, 4(51), 311–319. <https://doi.org/10.55643/fcaptop.4.51.2023.4120>

2.2. The role of FAO in ensuring food security of Ukraine during the war

Continuing the authors' research on the consequences of military actions for Ukraine, it is necessary to clarify the role of the Food and Agricultural Organization of the United Nations (FAO) in ensuring the balanced development of agriculture and food security in Ukraine. FAO's activities are aimed at the whole world, but taking into account the fact that the UN and Turkey have taken appropriate steps to ensure Ukraine's fulfillment of grain delivery contracts. Thus, the so-called "Grain Corridor" was introduced, which was practically implemented during July 2022 - July 2023. and allowed to export a certain number of contracts and sell grain. The main goal of the UN intervention in this process was to ensure food security in the world, because the war showed that a lot depends on Ukraine in this. This is also explained by the fact that in 2021, Ukraine entered the top three world exporters of wheat, corn, rapeseed, sunflower seeds and sunflower oil. Many countries that are heavily dependent on imported food and fertilizers, including those belonging to the least developed and low-income and food-deficit groups, rely on Ukrainian food supplies to meet their consumption needs. Many of these countries have already faced the negative consequences of high international food prices before the war, as well as the consequences of the COVID-19 pandemic⁵⁶.

⁵⁶ FAO Impact of the Ukraine-Russia Conflict on Global Food Security and Related Matters under the Mandate of the Food and Agriculture Organization of the United Nations (FAO). URL : <https://www.fao.org/3/nj164en/nj164en.pdf>

But for us, the issue of ensuring food security is important not only because of the world, but specifically within Ukraine. Of course, the sale of agricultural products, in which we are world leaders, is also vital for the functioning of the country's economy, but at the level of our state, it is also necessary to support socio-economic processes.

The war in Ukraine has already caused significant human casualties and damage in many settlements, spread to a large number of rural areas and caused massive population displacement. The population in active combat zones faces acute shortages of food, water and energy. As insecurity persists and local and national supply chains are disrupted, people are likely to experience even more hunger or malnutrition⁵⁷.

In general, FAO identifies the following problems that directly affect agriculture in Ukraine in the context of a full-scale invasion. We can present them in Fig. 14.

These problems were identified by FAO as of June 2022, which may, of course, add to the disruption of harvesting summer and autumn crops. Nowadays we can add 2023 and 2024 years to these problems.

From the identified problems, we can see that there are problems in several directions and they have socio-economic

⁵⁷ FAO Impact of the Ukraine-Russia Conflict on Global Food Security and Related Matters under the Mandate of the Food and Agriculture Organization of the United Nations (FAO). URL : <https://www.fao.org/3/nj164en/nj164en.pdf>

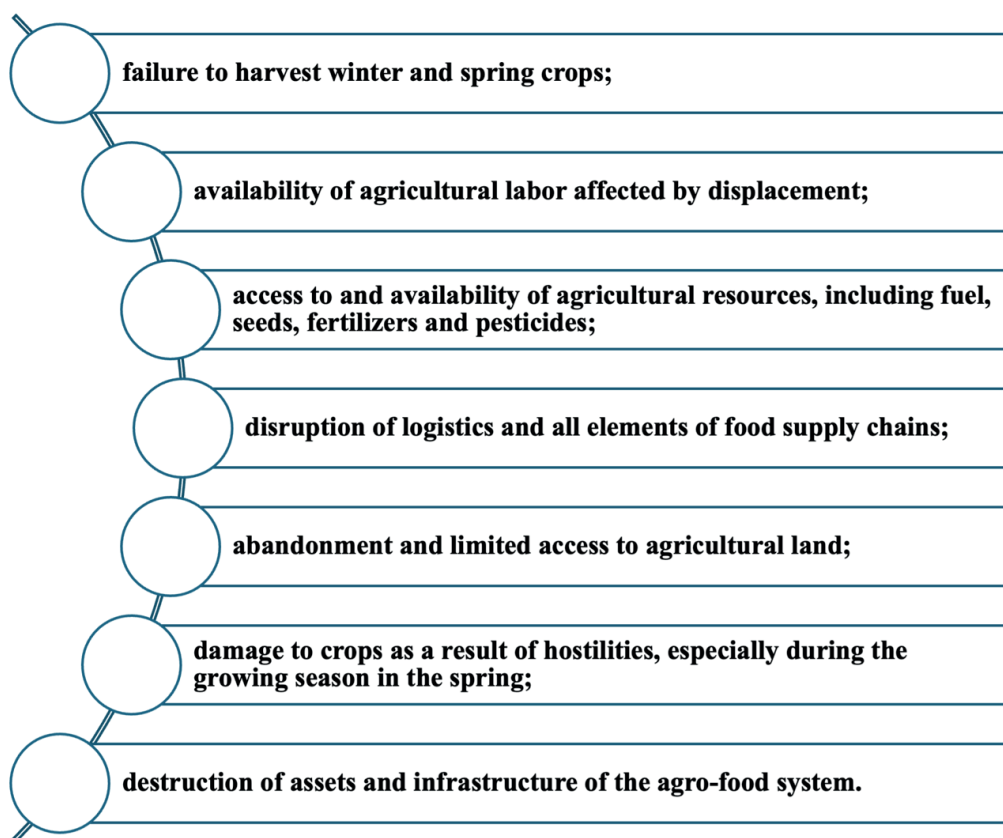


Figure 14. Problems of agriculture in Ukraine identified by
FAO

Source: compiled by the authors based on FAO Impact of the Ukraine-Russia Conflict on Global Food Security and Related Matters under the Mandate of the Food and Agriculture Organization of the United Nations (FAO). URL : <https://www.fao.org/3/nj164en/nj164en.pdf>.

consequences: from the point of view of the development of the agro-industrial complex, disruptions in sowing and harvesting directly affect the possibility of obtaining cash income for entrepreneurs and obtaining food products for the country's residents; limitation in the possibilities of attracting labor also has

both an economic and a social basis. Thus, the labor force is less involved in the labor market, receives wages, which, accordingly, lowers the level and quality of life of the population. In general, it is worth noting that the functioning of the agro-industrial complex is important for ensuring the inclusiveness of the Ukrainian economy, as it provides, on the one hand, cash inflows to entrepreneurs, and, accordingly, to the state, and makes it possible to saturate the market with agricultural products, that is, the level of food insecurity decreases, and, on the other hand, provide an opportunity to balance the labor market and the quality of life of the population.

So, FAO does certain steps in helping to solve the problems of the agro-food sector of Ukraine. FAO is strengthening its presence in Ukraine by signing an agreement with the Government of Ukraine and the Food and Agriculture Organization of the United Nations on the establishment of the FAO Project Office and the provision of technical and humanitarian assistance to Ukraine dated November 4, 2022. This assistance will be directed to the most vulnerable communities of Ukraine. The results of the study of the scale of the impact of the war on the rural population indicate a difficult situation for it. This justifies FAO's special attention to this population. The largest decline in incomes is recorded in areas along the contact line, although this is also a trend across the country. It is also worth highlighting such a problem as the reduction of land suitable for growing agricultural products. This is due to the

occupation of part of the territory of Ukraine and the impossibility of cultivation in the front-line territories⁵⁸.

As part of the assistance to Ukraine, FAO has developed a number of documents, namely: FAO humanitarian response, Rapid response plan, Strategy for supporting grain storage.

According to FAO data, as of the beginning of June 2022, the area sown for spring crops for harvest decreased by 20% compared to the previous year⁵⁹.

The number of internally displaced persons (IDPs) by the end of 2022, according to FAO, decreased to 6.2 million people from 6.9 million. The main problem for IDPs is the availability of finances⁶⁰.

As part of FAO's support to Ukraine, there is a Rapid Response Plan and a Strategy for Grain Storage Support. Within their scope, it is planned to allocate 180.4 million USD to provide assistance to almost 1 million people, meet grain storage needs, and strengthen the Government's capacity for food testing and certification.

As of July 2022, it was expected that 20-30% of winter crop areas would not be harvested due to military operations. This means

⁵⁸ Dielini M.M. (2022) Rol' FAO u zabezpechenni prodovol'choyi bezpeky Ukrayiny v suchasnykh umovakh [The role of FAO in ensuring food security of Ukraine in modern conditions]. Materialy VI mizhnarodnoyi naukovo-praktychnoyi konferentsiyi «Inklyuzyvnyy rozvytok natsional'noyi ekonomiky: hlobal'ni tendentsiyi, mozhlyvosti Ukrayiny ta rol' ahroprodovol'choho sektoru» (17-18 lystopada 2022 r.). Kyiv, NUBiP Ukrayiny. 258 p. Pp.55-56. (in Ukrainian)

⁵⁹ FAO. 2022. *Ukraine: Humanitarian response update – 21 July 2022*. Rome. URL : <https://doi.org/10.4060/cc0978en>

⁶⁰ FAO. 2022. *Ukraine: Humanitarian response update – 18 October 2022*. Rome. URL : <https://doi.org/10.4060/cc2505en>

that the harvest that will not be collected will not be able to be sold and bring income to its owners.

FAO measures are aimed at helping Ukrainian farmers affected by the war. FAO provides seeds as well as multipurpose cash assistance that can be used to purchase materials and equipment.

In addition, FAO, together with the Ministry of Agrarian Policy of Ukraine, planned to hand over 30,000 polyethylene sleeves for grain storage, machines for loading and unloading grain, as well as modular grain storage facilities to agricultural producers. In fact, in 2022. More than 26,000 bags of grain were distributed. This assistance will help farmers to save crops and ensure the country's food security.

At the beginning of 2023, at the event of the Global Forum on Food and Agriculture in Berlin, three main directions were indicated in which FAO will operate in Ukraine in 2023 (Fig. 15).

FAO also plans to provide assistance to the National Academy of Agrarian Sciences of Ukraine in preserving the unique national collection of genetic plants, which is of global importance.

In addition to the above, FAO plans to provide other types of assistance to victims of military operations. In particular, FAO will provide vouchers for the purchase of tools and construction materials, as well as animal feed. This assistance will help farmers restore their farms and ensure food security for the population.

In general, as noted by the FAO, they provide assistance in 3 directions (Fig. 16).

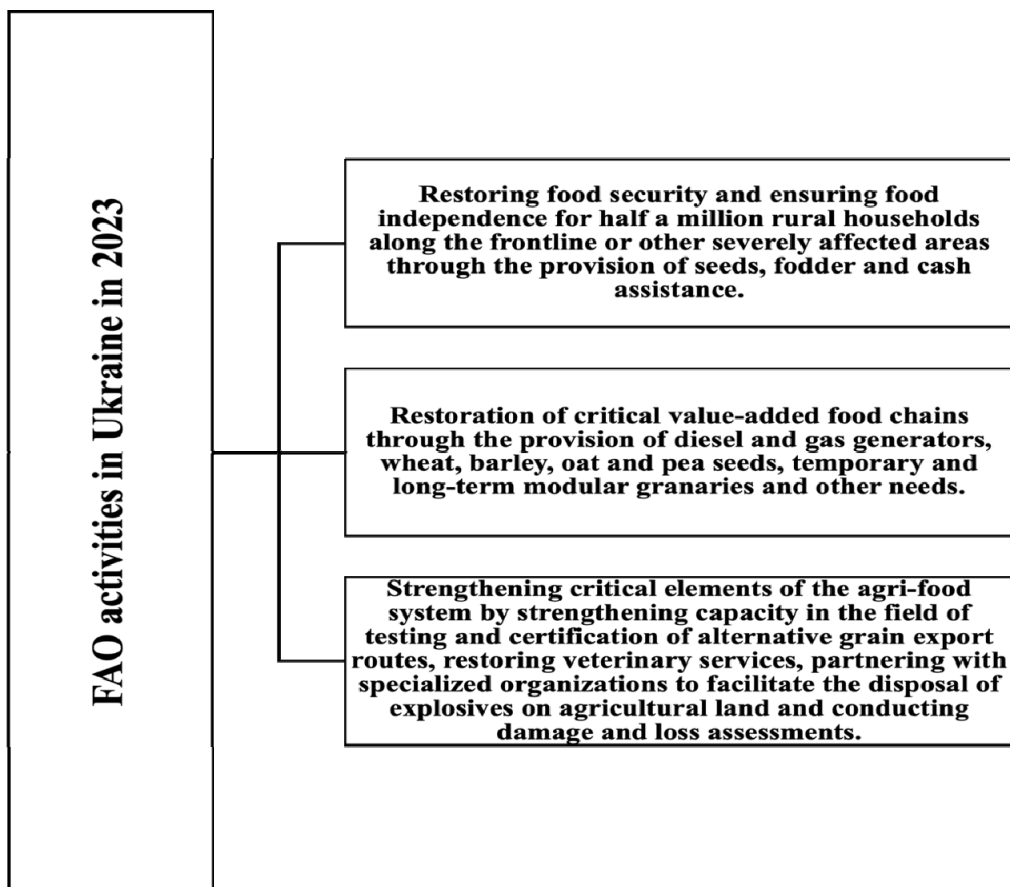


Figure 15. FAO activities in Ukraine in 2023.

Source: compiled by the authors based on FAO nazvala try osnovni napryamky diyal'nosti v Ukrayini dlya vprovadzhennya initsiatyv u 2023 r. URL : <https://ukraine.un.org/uk/216506-фао-назвала-три-основні-напрямки-діяльності-в-україні-для-впровадження-ініціатив-у-2023-році> (in Ukrainian)

An example of FAO assistance in the form of seeds is the program that was carried out in Ukraine until July 2023. FAO, with the financial support of Japan and Norway, implemented a program aimed at supporting small farmers during autumn sowing in 2023. To participate in this program the target audience had to submit an application through the relevant State Agrarian Register by July 20, 2023.

The implementation of this program is planned for those regions that have suffered the most as a result of military actions on the territory of Ukraine. Accordingly, these regions are Dnipropetrovsk, Donetsk, Zaporizhzhya, Mykolaiv, Odesa, Sumy, Kharkiv, Kherson and Chernihiv regions. Under this program, each selected farmer will receive 2 tons of winter crop seeds, which can be used to sow 10 hectares of land. One of two crops is chosen: wheat or barley.

Assistance to rural households

- vegetable seeds and seed potatoes
- winter wheat seeds
- monetary assistance

Assistance to small and medium-sized agricultural producers

- sleeves for grain storage and auxiliary equipment
- winter wheat seeds

Government support

- purchase of equipment for the laboratory in Izmail
- purchase of PCR equipment for 6 laboratories of the State Production and Consumer Service
- relocation of the bank of genetic resources

Figure 16. FAO assistance in Ukraine

Source: compiled by the authors based on Hrantova pidtrymka dlya mikro- ta malykh vyrobnykiv ahrarnoyi produktsiyi. URL : <https://minagro.gov.ua/storage/app/sites/1/state%20support/antonyuk-h-1002-1.pdf> (in Ukrainian)

The conditions of this program are that only individual entrepreneur or individual persons who carry out their activities in these 9 regions and own or lease agricultural land from 5 to 100 hectares can participate⁶¹.

This program provides an important foundation for our individual agricultural market participants and provides opportunities to address grain shortages in war-torn areas. Active hostilities or constant enemy shelling slow down the development of the agro-food sector in these regions, which will have significant negative consequences both for ensuring one's own grain needs and for the balanced functioning of the economy by sector. That is why these programs from the FAO are gaining special relevance at this time.

These and other actions on the part of FAO reflect that they are really implementing measures to improve the situation in terms of ensuring food security in Ukraine. Their actions become an important basis for the rural population in terms of growing agricultural crops. Many problems arose with the conduct of military operations in our country, but we can single out the following in relation to agriculture:

- occupation of settlements. This led to the fact that agricultural products were not delivered to the Ukrainian market or could not even be collected by farmers because they were forced to leave their

⁶¹ Nasinnya zernovykh dlya osinn'oyi posivnoyi kampaniyi. URL : <https://minagro.gov.ua/pidtrimka/grantova-pidtrimka-fao-ta-yes/nasinnya-zernovih-dlya-osinnoyi-posivnoyi-kampaniyi> (in Ukrainian)

lands. Certain territories were de-occupied, but in this case the crops were first destroyed or stolen. That is, people could not provide, to a large extent, even their own needs, not to mention the need to sell products to provide themselves with money;

- internally displaced persons. This segment of the population has been important in our society since 2014, when Crimea and parts of Donetsk and Luhansk regions were occupied. With the beginning of a full-scale invasion, their number increased significantly. As of September 1, 2023, 4,965,000 IDPs were registered in Ukraine. Their real number is estimated at almost 7 million people. Migration processes in the country or even migration abroad have negative socio-economic consequences: for the first time after moving, they are removed from the labor market, more vulnerable in economic terms, as they are forced to spend their savings, which may expire and not be replenished;

- finding villages and towns on the verge of conflict. This problem arises due to the fact that in the territories that are close to the contact line, the cultivation of agricultural crops is almost impossible due to hostilities or due to the mining of the territories (this problem is also inherent in the de-occupied territories). This cannot but affect the production capacity of farmers or the provision of the population with the necessary products;

- hindering the sale of products. This is one of the biggest problems for the world community, as Ukraine cannot supply other countries with grain and other agricultural crops.

The consequences of these problems can be determined in two planes: consequences for the whole world and consequences for Ukraine (both the state as a whole and its population directly).

This creates a problem for the state in meeting its food needs. The consequences for Ukraine are considered more large-scale and important for us.

Thus, we see that FAO's actions in Ukraine are appropriate, taking into consideration the needs and threats that have arisen before our citizens. It deserves special attention that many real measures are aimed at helping the rural population, which is more vulnerable under the conditions prevailing in the country. Assistance in this case creates the basis for independent solutions to the needs of providing oneself with food products.

Also, FAO presented at the beginning of 2023 the project “Comprehensive, competitive and economically rational creation of value chains in agriculture, fisheries and forestry”, which will operate until January 31, 2025. This project includes a grant support program, an emergency response program, and as well as the direction of preservation and transfer of the bank of genetic plants. The donor of this project is the European Union, and the budget is 14.3 million euros, where 4.3 million euros are planned for grants.

This grant program is aimed at supporting agricultural producers in Lviv, Zakarpattia, Ivano-Frankivsk and certain districts of Chernivtsi regions.

We visualized in Fig. 17 sectors of support by region, size of grants and investment criteria.

Support sectors	Lviv region: berries, vegetables, aquaculture
	Transcarpathian region: Hutsul sheep bryndza, Hutsul cow bryndza, Transcarpathian honey and Transcarpathian wine
	Ivano-Frankivsk and certain districts of Chernivtsi region: Hutsul sheep bryndza, Hutsul cow bryndza
Amount of grants	USD 10,000 for personal farms and individuals
	USD 25,000 for small and micro producers of agricultural products of various organizational and legal forms, cooperatives and associations of producers of agricultural products
Investment criteria	Funding is provided only for future, additional investments (not past or partially completed investments).
	The requested financial support does not exceed the established maximum amounts of support.
	The term of implementation of the proposed investment does not exceed one year from the date of signing the grant agreement and a maximum of 3 months before the closing of the project.

Figure 17. Basic conditions of the FAO grant program for agricultural producers of Ukraine

Source: compiled by the authors based on Hrantova pidtrymka dlya mikro- ta malykh vyrobnykiv ahrarnoyi produktsiyi. URL : <https://minagro.gov.ua/storage/app/sites/1/state%20support/antonyuk-h-1002-1.pdf> (in Ukrainian)

As you can see, grant support varies by region and sector, this can be explained in certain climatic, historical, and other factors. Importantly, this program aims to stimulate the creation of added value, which is necessary for economic growth.

The priorities of this grant program concern the following topics:

1. Gender equality and justice/support for female-headed households

2. Promotion of participation of youth (35 years old) and other vulnerable groups in agriculture

3. Promoting the implementation of climate-oriented methods of agriculture

4. Promotion of the development of geographical indications/production of organic products

From these directions, it becomes clear that FAO's policy is inclusive from the point of view of including vulnerable sections of the population in agricultural activities, which is reflected in the first and second priorities of this grant program. This is important for the balanced functioning of the country's economy and its rapid recovery in war and post-war times.

We can state that FAO plays an important role in the agro-industrial complex of Ukraine in the modern conditions of martial law, and this has positive consequences for the recovery of our economy and ensuring food security in the country.

2.3. The place and role of enterprises of the agro-industrial sector in the country's economy

It is necessary to make a comprehensive statistical analysis of the development of various aspects of this sector for a full-fledged investigation of the inclusive development of ukrainian agro-industrial sector, identification of its opportunities and risks. It is important to study what exactly is produced by agriculture by its types, as well as by types of farms. It is appropriate to analyze the development of agriculture by region in order to see which regions are locomotive producers of different kinds of products. This becomes especially relevant in the war, when a large number of enterprises or small farmers, farming enterprises were forced to leave their homes and move to another part of Ukraine. Studying the possibilities of growing certain crops creates the foundations for establishing a new production or developing an existing one in the conditions of war. The study of the index of agricultural products, the volume of sold products, as well as the dynamics of average prices for this type of products will make this analysis more complete. In order to supplement research on inclusiveness, it is also

necessary to study statistics on the number of employees at agricultural enterprises. This will provide an opportunity to draw conclusions about the importance of the development of this sector for the social component of the country's economy.

Table 9 shows the value of agricultural products by species in % of the total during 2010-2022. The given data make it possible to see which agricultural products are the most or least represented in the total.

Table 9. Agricultural production by types (as a %of the total)

	2010	2015	2019	2020	2021	2022
Agricultural production	100,0	100,0	100,0	100,0	100,0	100,0
crop production	70,5	75,9	79,1	77,3	81,4	78,2
grain and leguminous crops	27,1	32,4	35,2	33,9	38,5	32,3
technical cultures	21,0	25,0	28,6	26,5	28,0	30,0
potatoes, vegetable and melon food crops	14,5	13,0	11,4	12,9	11,3	13,0
fruit and berry crops, grapes	2,7	2,5	2,1	2,2	2,0	2,4
fodder crops	2,4	1,7	1,3	1,3	1,1	1,3
other plant products	2,8	1,3	0,5	0,5	0,5	-0,8
livestock production	29,5	24,1	20,9	22,7	18,6	21,8
farm animals (breeding)	13,8	11,8	10,9	12,0	10,1	11,9
milk	10,7	7,9	6,3	6,7	5,4	6,5
eggs	4,2	3,3	2,8	3,1	2,3	2,6
wool	0,0	0,0	0,0	0,0	0,0	0,0
other livestock products	0,8	1,1	0,9	0,9	0,8	0,8

Source: Statystychnyy zbirnyk «Sil's'ke hospodarstvo Ukrainy». 2022.

URL : https://ukrstat.gov.ua/druk/publicat/kat_u/2023/zb/09/S_gos_22.pdf (in Ukrainian)

From this table, we can see that the data are given by two groups: crop production and livestock production. The greatest weight in the total amount of agricultural products is produced by crop production during the analyzed period. It can be seen that the share of crop production changed in 2010-2022, with the highest indicator in 2021 – 81.4%. This significantly exceeds the result of 2010, when it was equal to 70.5%. In 2022, the share of crop production in the total decreased slightly and was equal to 78.2%.

In general, the dynamics of livestock products also developed unevenly: fluctuations occurred during the entire analyzed period both in the direction of increase and decrease. It is worth noting that currently the indicator of livestock production in the total agricultural output is lower than the indicator of 2010. The decrease is 7.7% from 2022 to 2010.

The analysis by the crops themselves shows that the most important part in crop production is grain and leguminous crops (27.1% in 2010 and 32.2% in 2022). But in 2021, the rate of this culture was the highest for the analyzed period - 38.5%. This category of culture plays the most significant role for Ukrainian agriculture, we can say even that vital role.

The second place in terms of share is occupied by technical crops, the indicators of which also fluctuate during the analyzed period, but the results are significant for the entire domestic agriculture.

Fodder crops (2.4% in 2010, 1.3% in 2022) and other crop products (2.8% in 2010, - 0.8% in 2022) make up the smallest share in crop production. It is worth noting that these two categories of crops experienced a significant decrease during 2010-2022, in contrast to “fruit and berry crops, grapes”, the indicators of which fluctuated during the period, but the changes were insignificant. Thus, in 2010, the share of this category was equal to 2.7%, in 2021 – 2.0% (the lowest indicator for the entire analyzed period), in 2022 – 2.4%. That is, fluctuations did not affect the overall weight of this category.

State Statistics Service of Ukraine includes the following categories to the group “livestock products”: farm animals (breeding), milk, eggs, wool, other livestock products. The largest share is occupied by the category “farm animals (breeding)” (13.8% in 2010, 10.1% in 2021 (the lowest value of the indicator), 11.9% in 2022). Milk occupies an important share in the agricultural production of Ukraine. Thus, in 2010, it was equal to 10.7% with a further decrease (quite significant) to 5.4% in 2021 and to 6.5% in 2022. The smallest share is wool, an indicator that, according to the methodology of the State statistics service, equal to 0.0%, although there are certain figures in monetary terms.

One of the smallest shares in livestock products and all agricultural products, respectively, is occupied by the category “other livestock products”. The indicator of which fluctuated slightly during the period 2010-2022.

The indicator of the “eggs” category is noteworthy, which as of 2010 was equal to 4.2%, but subsequently experienced a significant decrease for this category to 2.3% in 2021 (the lowest indicator) and 2.6% in 2022.

For a more well-grounded analysis, we present Table 10, which provides data on this indicator, but in monetary terms.

Providing this table allows us to draw conclusions about changes in the volume of agricultural products in monetary terms, which is more accurate for our research from the point of view of changes in production. Thus, the general indicator of agriculture reflects quite significant changes during the analyzed period. Growth was observed in the period until 2020, where this indicator decreased to UAH 612,121.5 million from UAH 680,982.4 million in 2019. This decrease can be explained by the crisis conditions in society, namely the COVID-19 pandemic, which spread in Ukraine in 2020. In the next year, 2021, the indicator of agriculture increased significantly to UAH 712,566.3 million, which is evidence of a rise to a level above the pre-pandemic level, but the result of 2022 is one of the lowest during the period under analysis and is equal to UAH 534,380.3 million. This shows that the full-scale war had a significant impact on all sectors of the country's economy and agriculture in particular.

Table 10. Agricultural production by types, UAH million

	2010	2015	2019	2020	2021	2022
Agricultural production	467474,7	596832,8	680982,4	612121,5	712566,3	534380,3
crop production	329646,3	453016,9	538705,6	473377,0	580267,7	417907,6
grain and leguminous crops	126803,3	193390,3	239728,2	207778,6	274271,9	172463,5
technical cultures	98164,6	149263,1	194847,6	162374,8	199836,0	160400,4
potatoes, vegetable and melon food crops	67679,7	77346,2	77753,1	78861,4	80747,7	69413,6
fruit and berry crops, grapes	12757,9	14799,3	14564,1	13410,0	14366,9	13011,5
fodder crops	11048,0	10103,6	8618,2	8128,9	8064,4	7045,0
other plant products	13192,8	8114,4	3194,4	2823,3	2980,8	-4426,4
livestock production	137828,4	143815,9	142276,8	138744,5	132298,6	116472,7
farm animals (breeding)	64717,5	70153,8	74165,4	73409,7	71663,4	63767,1
milk	50104,2	47320,7	42978,0	41199,6	38766,3	34543,9
eggs	19797,5	19498,0	19362,7	18770,2	16337,0	13841,3
wool	103,0	55,0	42,6	38,8	36,7	30,4
other livestock products	3106,2	6788,4	5728,1	5326,2	5495,2	4290,0

Source: Statystychnyy zbirnyk «Sil's'ke hospodarstvo Ukrayiny». 2022.

URL : https://ukrstat.gov.ua/druk/publicat/kat_u/2023/zb/09/S_gos_22.pdf (in Ukrainian)

Analysis of the table by crop production and livestock production shows the same trends, although the decrease in livestock production was smaller than in crop production. Although, it is worth noting that after the COVID-19 pandemic and the growth of the indicator of all agriculture and crop production, the return of the indicator of livestock production to pre-pandemic figures did not occur. This can also be seen in all categories of this subgroup except for the category “other livestock products”.

The analysis by production categories makes it possible to see that, for example, grain and leguminous crops, although they are the most important in the agricultural economy of Ukraine in terms of income, but also experienced a decrease in 2020 and a significant decrease in 2022, which finds a logical explanation in the already mentioned reasons.

All categories of crop production changed their indicators identically to the subgroup itself: a decrease in 2020 with a further increase in 2021 and a significant decrease in 2022. But there are certain exceptions for the category “potatoes, vegetable crops and food melons”, which in 2020, contrary to the general trend, increased by UAH 1,108.3 million. Although in 2022, the cultivation of these products experienced a decrease. Forage crops, which did not recover their pre-pandemic indicators and were lower in 2021 than in 2020, are worthy of attention.

The results of livestock products reflect an increase in the indicator of 2015 year compared to 2010, but with a further decrease starting from 2019. Which may indicate the reorientation of agricultural enterprises to crop production. This trend is inherent in all livestock products (except for the above-mentioned case in 2021). Almost all categories of this subgroup have results in 2022 lower than the indicators of 2010, which is a significant indicator of the decrease in the total volume of livestock products in the agriculture of Ukraine. The wool indicator in this table has certain values, which also decrease during the period 2010-2022 (the result

decreased by more than 3 times, which is the largest decrease among livestock categories).

Next step will be analyze of agricultural products by categories of farms where they were produced (Table 11).

Table 11. Agricultural production by categories of farms, UAH million

	2010	2015	2019	2020	2021	2022
All agricultural holdings						
Agricultural production	467474,7	596832,8	680982,4	612121,5	712566,3	534380,3
including						
crop production	329646,3	453016,9	538705,6	473377,0	580267,7	417907,6
livestock production	137828,4	143815,9	142276,8	138744,5	132298,6	116472,7
Enterprises						
Agricultural production	256806,0	367738,8	449806,3	395717,7	484101,0	348361,3
including						
crop production	200914,6	299369,3	376789,7	323198,2	413004,6	283061,5
livestock production	55891,4	68369,5	73016,6	72519,5	71096,4	65299,8
Households						
Agricultural production	210668,7	229094,0	231176,1	216403,8	228465,3	186019,0
including						
crop production	128731,7	153647,6	161915,9	150178,8	167263,1	134846,1
livestock production	81937,0	75446,4	69260,2	66225,0	61202,2	51172,9

Source: Statystychnyy zbirnyk «Sil's'ke hospodarstvo Ukrainy». 2022.
 URL : https://ukrstat.gov.ua/druk/publicat/kat_u/2023/zb/09/S_gos_22.pdf (in Ukrainian)

This table shows the volume of production of agricultural products by categories of farms, estimated in millions of UAH. In

addition to the general indicator, this table shows the division of products produced by enterprises, which include legal entities that carry out activities in the field of agriculture. They also include farms. The State Statistics Service of Ukraine refers to households that carry out agricultural activities for the purpose of providing themselves with food products, as well as for the purpose of production and further sales. This type of business also includes individual entrepreneurs who carry out their activities in the relevant industries.

This table shows that in the monetary equivalent of products produced by enterprises (65%), they mostly produce crops (81%) than livestock.

Households produce a smaller share of agricultural production (35%), among which plant products are also more important in production (72.5%). That makes it possible to draw conclusions about the important role of enterprises in the agricultural Ukrainian economy, but also the significant importance of households (1/3 of the production of the entire agricultural economy), since they, at least, provide themselves with the necessary food products.

In the table 12 we present crop production by region to make following analyze.

The table 12 shows the production of crops by enterprises in 2022. Among the given data, we can see that grain and leguminous crops are grown the most in Poltava, Chernihiv, and Sumy regions.

Table 12. Production of agricultural crops by types of agricultural holdings and regions in 2022 (thousand tons)

	Enterprises					
	grain and leguminous crops	factory sugar beet	sun-flower	potatoes	vegetables	fruits and berries
Ukraine regions	42315,2	9508,0	9988,8	433,5	444,5	352,6
Vinnitsya	2930,0	2164,5	717,6	3,5	6,9	95,9
Volyn	911,0	282,2	85,9	7,0	14,9	7,9
Dnipropetrovsk	2286,5	–	916,5	41,8	75,6	26,3
Donetsk	419,4	–	186,5	κ	κ	1,0
Zhytomyr	1629,5	148,1	354,4	43,3	4,6	3,0
Zakarpattia	79,6	–	7,2	0,4	κ	15,0
Zaporizhyya	376,4	–	150,7	κ	0,5	0,1
Ivano-Frankivsk	544,0	κ	113,6	2,7	5,2	4,2
Kyiv	2633,0	196,8	463,1	31,3	25,2	19,4
Kirovohrad	2948,1	502,0	968,8	0,2	3,9	1,2
Luhansk	8,2	–	0,7	–	–	–
Lviv	1426,4	1109,2	108,8	115,9	35,6	25,6
Mykolayiv	1532,6	–	455,8	0,4	21,2	2,4
Odesa	2155,5	–	481,3	3,1	106,2	5,8
Poltava	4105,8	1019,5	1127,4	9,1	3,2	5,2
Rivne	948,2	973,6	123,2	3,3	11,0	0,3
Sumy	3198,2	–	857,7	10,4	2,1	1,0
Ternopil	2047,9	1188,1	335,3	21,2	17,3	42,8
Kharkiv	1872,5	–	628,0	1,8	7,4	1,8
Kherson	145,4	–	16,1	κ	κ	κ
Khmelnitskiy	3044,3	1259,7	574,9	6,8	14,5	23,2
Cherkasy	3078,3	455,3	609,5	25,3	78,4	9,6
Chernivtsi	237,3	κ	37,9	1,4	1,0	59,6
Chernihiv	3757,1	99,1	667,9	100,3	3,3	1,3

Source: Statystychnyy zbirnyk «Sil's'ke hospodarstvo Ukrayiny». 2022. URL : https://ukrstat.gov.ua/druk/publicat/kat_u/2023/zb/09/S_gos_22.pdf (in Ukrainian)

The indicators of Khmelnytskyi and Cherkasy oblasts are slightly less than those of Sumy. Vinnitsya, Kirovohrad and Kyiv oblasts can also be mentioned among the oblasts important for this category. In 2022, the least amount of grain and legumes was grown

in the Luhansk, Zakarpattia, Kherson and Chernivtsi regions. The indicators of the Luhansk region in 2022 are either too small or not given at all, which can be explained by the occupation of this region.

Data on sugar beet are not given for all regions, but among the data in the table 8 we can see that most of it is produced in the Vinnytsia, Khmelnytskyi and Ternopil regions. The least beets were produced in Chernihiv, Zhytomyr and Volyn regions.

Sunflower was grown the most in Poltava, Kirovohrad and Dnipropetrovsk regions. Luhansk, Zakarpattia, Kherson and Chernivtsi regions are the least represented in sunflower production. The indicators of Luhansk and Kherson region can be justified by military actions and occupation of territories.

Potato production is marked by lower production indicators in natural terms, where Lviv and Chernihiv regions should be noted among the largest producers. Zhytomyr and Dnipropetrovsk regions have significantly lower indicators than the two previous leaders, but higher than other regions. According to the data given, the least amount of potatoes is produced in the Kirovohrad, Zakarpattia, and Mykolayiv regions.

Vegetable crops are mostly grown in Odesa region, Cherkasy and Dnipropetrovsk regions. The results of other areas are much lower than these 3 areas. The least amount of vegetable crops were produced in the Zaporizhyya, Sumy and Chernivtsi regions. Such indicators of the first two regions can be explained by the

occupation of part of the territories and military actions, which make agricultural work impossible.

Fruit and berry crops were mostly grown in Vinnytsia, Chernivtsi and Ternopil regions. And the least in Zaporizhyya, Rivne and Sumy regions.

It is worth noting that not all oblasts have data for 2022, if you analyze carefully, then mostly of them are oblasts on the territory of which active hostilities were or are still being conducted, or these are oblasts that were under occupation or continue to be occupied. Among them, in particular, we can identify the Donetsk, Luhansk, and Kherson regions.

To analyze the production of these crops by households, you can use Annex A.

In general, it can be noted that crop production differs by region, which can be explained by various reasons: such as climatic location, soil characteristics, the presence of forests, the conduct of military operations and the occupation of territories, etc.

In the future, we will provide figures showing the share by the number of enterprises or the harvest depending on the size of the harvested area in 2021 and 2022 for various types of crops.

According to the figures 18-19, we can see that the largest number of enterprises producing grain and legumes in 2021 with an area of up to 100.00 hectares, namely 57%, and the smallest - 2% in enterprises from 2000.01 to 3000.00 hectares and more than 3000.00 ha. A comparison of these two figures shows that the

production of these crops is the largest precisely in enterprises that have an area of more than 3000.00 hectares. And the enterprises with the smallest area produce the smallest gross collection of this crop - up to 4%. Also, a small part is produced by enterprises with an area of 100.01-200.00 hectares (4%). Producers with 1000.01-2000.00 hectares of land also make a large contribution to the gross harvest of cereals and legumes, although their share in the number of enterprises is not large, namely 6%.

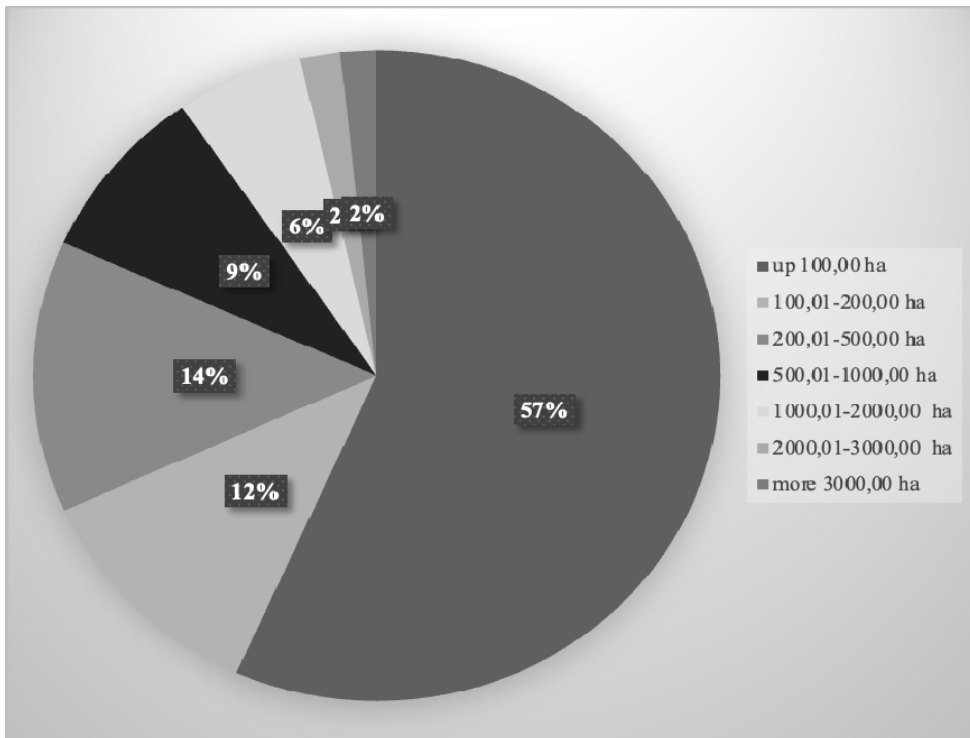


Figure 18. Grouping of enterprises by the size of the area by the number of enterprises producing grain and leguminous crops in 2021.

Source: compiled by the authors based on the materials of the State Statistics Service of Ukraine. URL : <https://ukrstat.gov.ua>

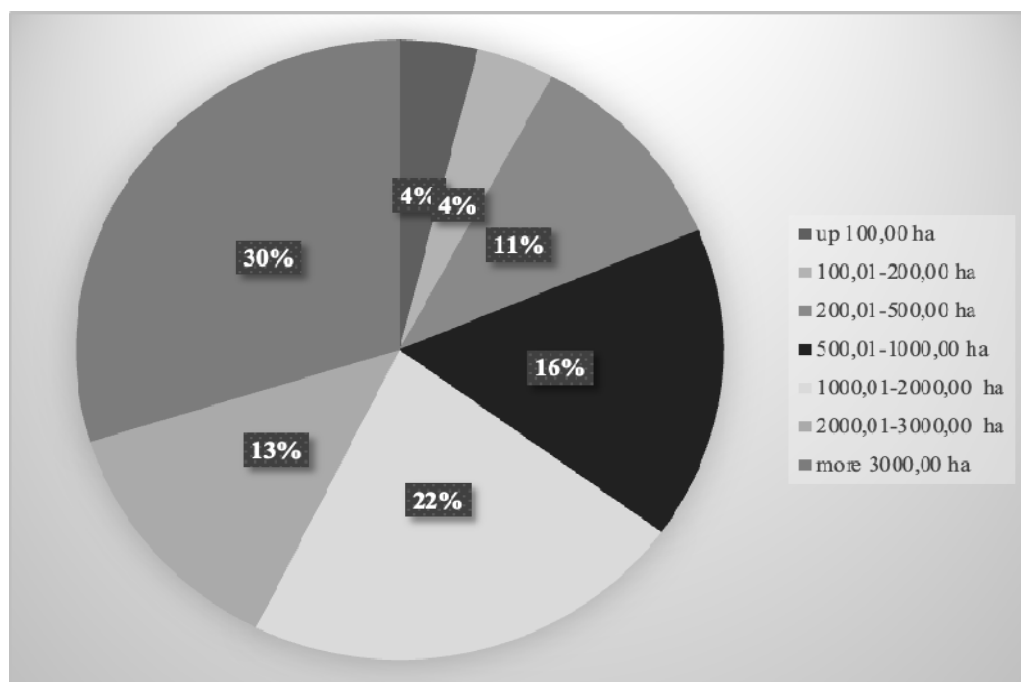


Figure 19. Grouping of enterprises according to the size of the area according to the gross collection of producers of grain and leguminous crops in 2021.

Source: compiled by the authors based on the materials of the State Statistics Service of Ukraine. URL : <https://ukrstat.gov.ua>

In fig. 20 – 21 we will analyze these same indicators in 2022 to see the dynamics.

Figures 20-21 show that there have been small changes in the number of enterprises and the volume of production of this crop. Thus, the share of enterprises with an area of 100.01-200.00 hectares has increased.

In general, the shares have changed slightly, which does not affect the general situation of this production.

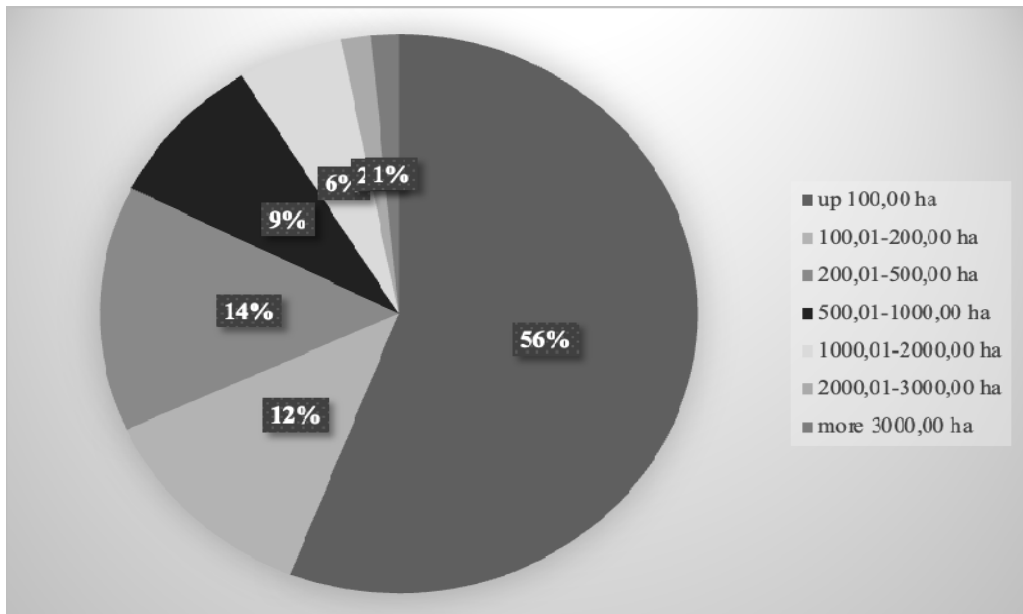


Figure 20. Grouping of enterprises by the size of the area by the number of enterprises producing grain and leguminous crops in 2022.

Source: compiled by the authors based on the materials of the State Statistics Service of Ukraine. URL : <https://ukrstat.gov.ua>

According to the value of the gross harvest of this crop, we can see that the changes that have taken place are also insignificant. Thus, the share of enterprises with an area of 500.01 - 1000.00 ha increased to 17%; enterprises with an area of 200.01-500.00 hectares up to 12%. And the shares of enterprises with an area of 2,000.01-3,000.00 hectares and more than 3,000.00 hectares decreased (to 12% and 28%, respectively).

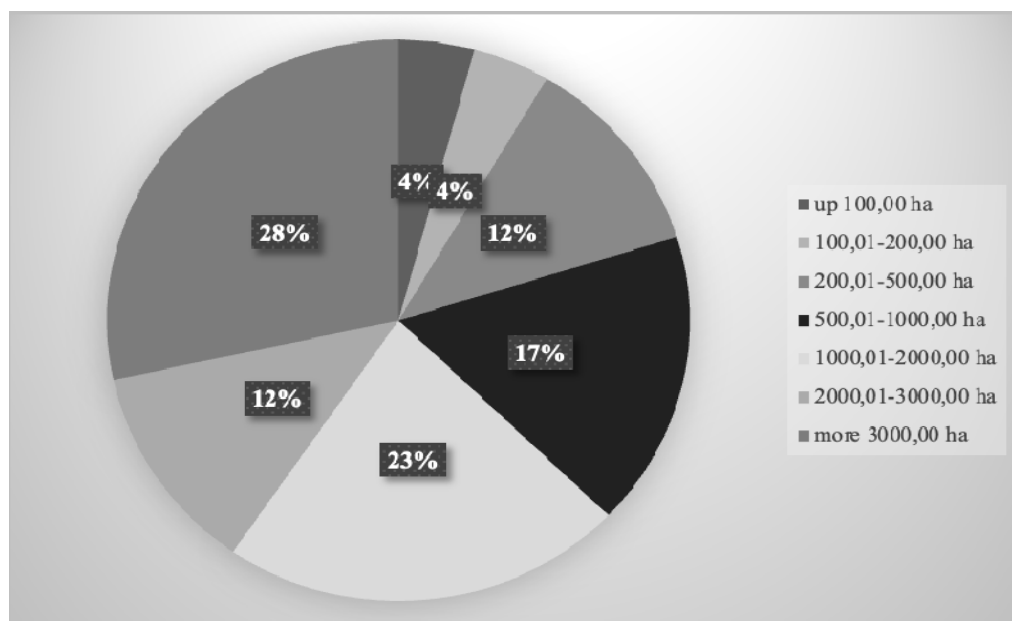


Figure 21. Grouping of enterprises by the size of the area by the gross collection of producers of grain and leguminous crops in 2022.

Source: compiled by the authors based on the materials of the State Statistics Service of Ukraine. URL : <https://ukrstat.gov.ua>

We can assume that this decrease is due to the fact that parts of Chernihiv and Sumy regions (which are among the leaders in the production of this crop) were occupied and large areas of not all enterprises could be involved in production.

Next, we will analyze the grouping of the same indicators for wheat (Fig. 22-23).

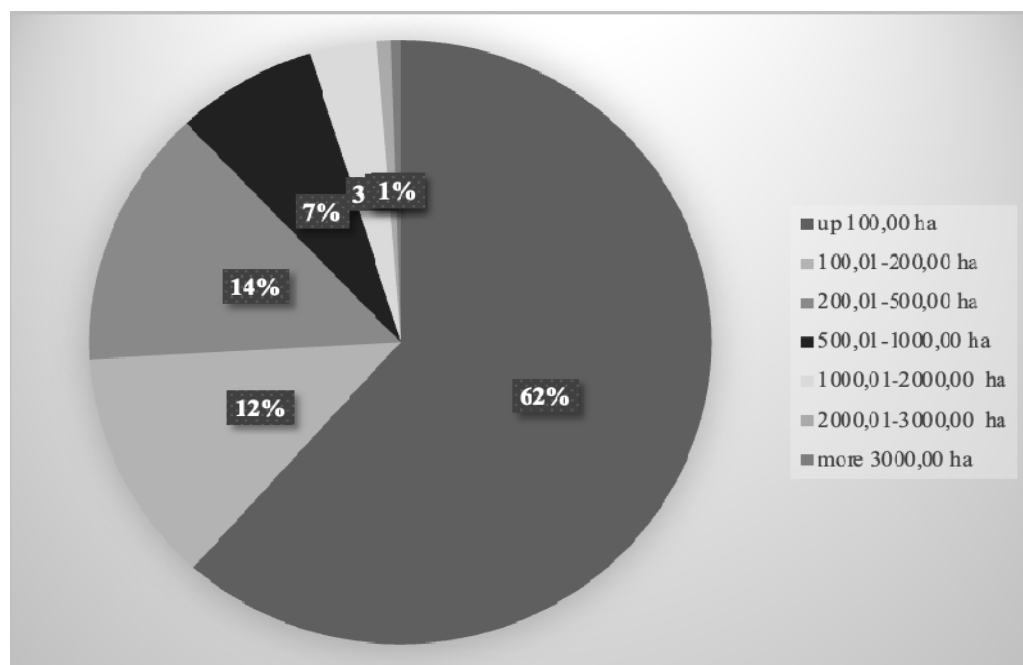


Figure 22. Grouping of enterprises by area size by the number of enterprises producing wheat in 2021.

Source: compiled by the authors based on the materials of the State Statistics Service of Ukraine. URL : <https://ukrstat.gov.ua>

Among wheat producers in 2021, the largest share is enterprises with an area of up to 100.00 hectares, which produce up to 8% of the entire harvest of this crop. Enterprises with an area of 100.01-200.00 ha (12%) and 200.01-500.00 ha (14%) make up much smaller shares. And the smallest shares (up to 1%) are made by enterprises with the largest area.

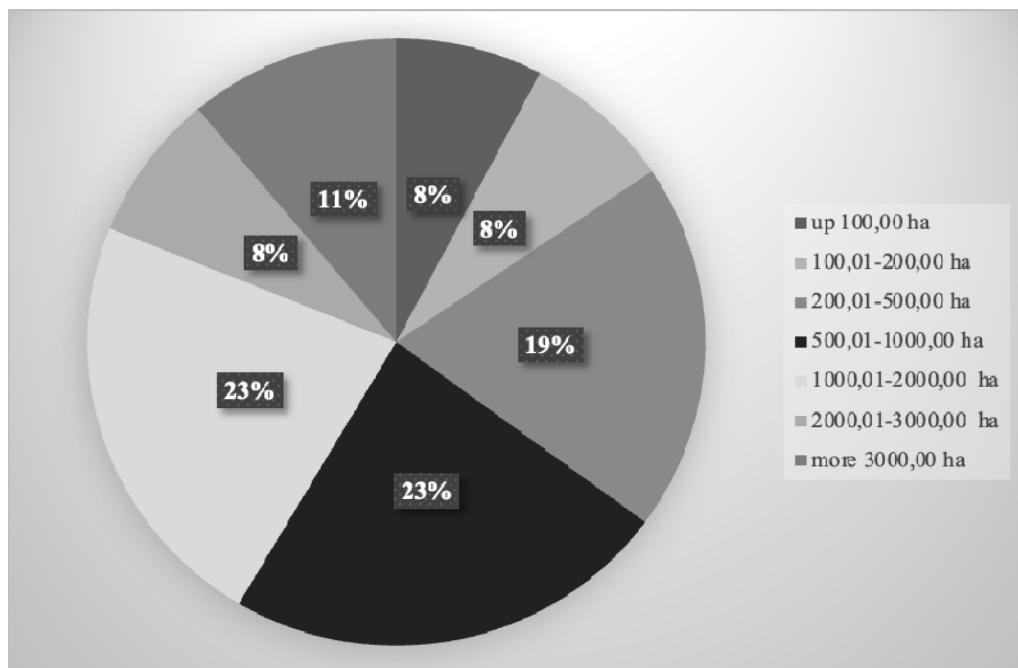


Figure 23. Grouping of enterprises by the size of the area by the gross collection of wheat producers in 2021.

Source: compiled by the authors based on the materials of the State Statistics Service of Ukraine. URL : <https://ukrstat.gov.ua>

From fig. 23 we can see that the most products (wheat) are produced by enterprises of 500.01-1000.00 ha (23%), 1000.01-2000.00 ha (23%) and 200.01-500.00 ha (19%). It is notable that the share of enterprises with 500.01-1000.00 ha is equal to 7%, and the share of enterprises with 1000.01-2000.00 ha is half as much, and they produce approximately the same amount of the harvest of this crop. And enterprises with the smallest share by the number of enterprises (more than 3000.00 hectares) produce a larger share of wheat than those with the largest share - up to 100.00 hectares.

Figures 24-25 show these indicators in 2022.

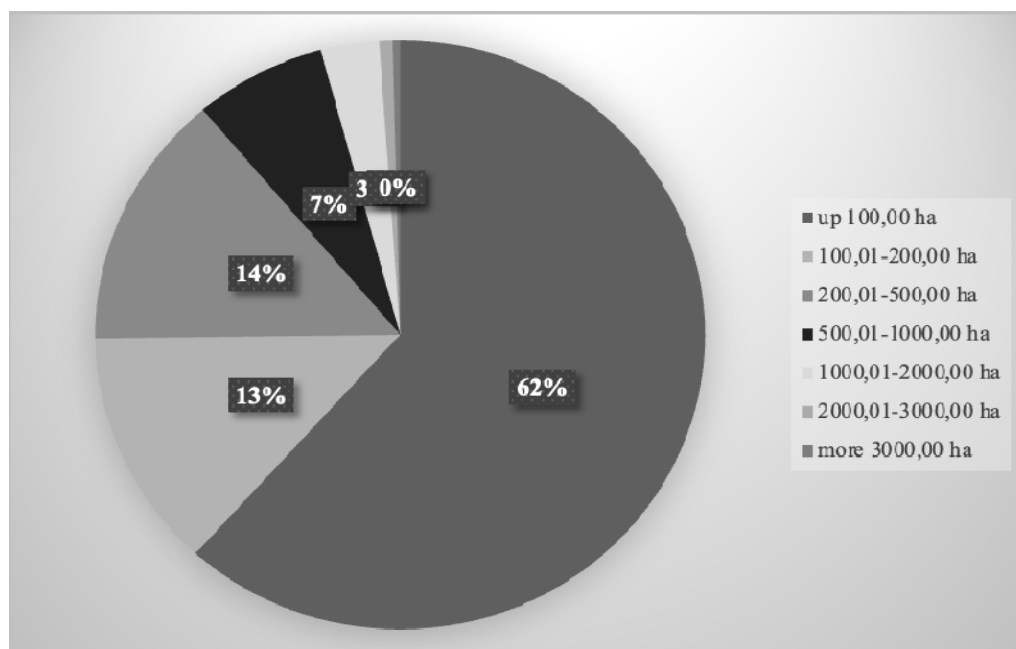


Figure 24. Grouping of enterprises by the size of the area by the number of enterprises producing wheat in 2022.

Source: compiled by the authors based on the materials of the State Statistics Service of Ukraine. URL : <https://ukrstat.gov.ua>

As we can see from fig. 25, the largest number of enterprises is the same as in 2021. In general, in 2022, the share of enterprises almost did not change compared to the previous year. It is interesting to analyze the number of enterprises by volume (the data are given in Annex A), from which we can see that the number of enterprises of the enterprises themselves has significantly decreased precisely in terms of quantity. So, in 2021, there were 14,789 enterprises with an area of up to 100.00 hectares, and in 2022, it was equal to 11,482. Although the share of harvesting in the total number increased slightly. And the share of the largest enterprises in

terms of area decreased by 1%. The number of enterprises with the largest (more than 3,000.00 hectares) decreased to 82 from 123 (in 2021).

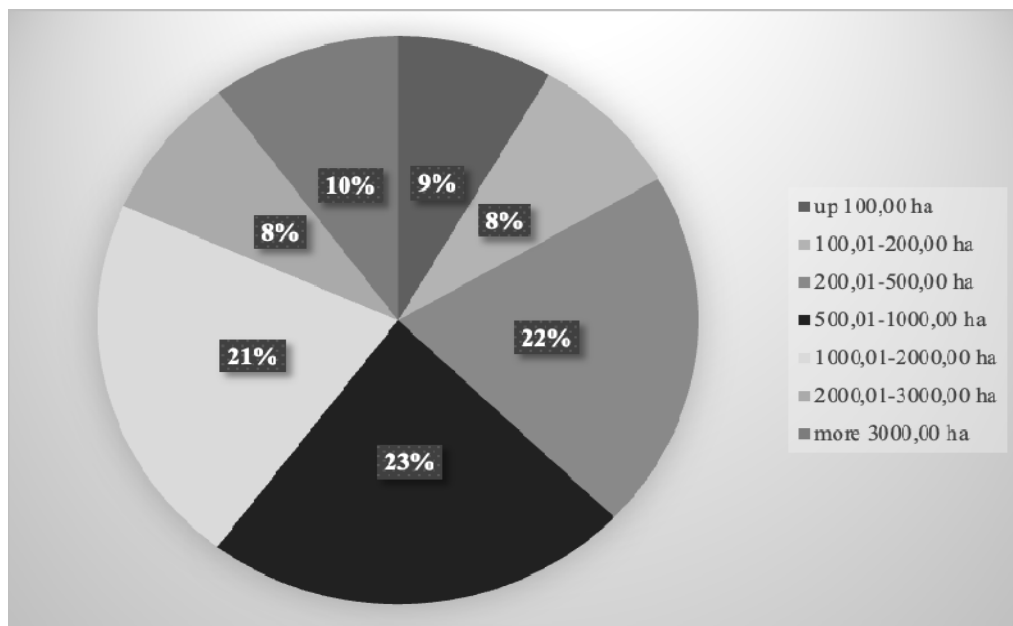


Figure 25. Grouping of enterprises by the size of the area by the gross collection of wheat producers in 2022.

Source: compiled by the authors based on the materials of the State Statistics Service of Ukraine. URL : <https://ukrstat.gov.ua>

In 2022, the share in the gross harvest of wheat did not undergo significant changes, but it is worth noting that the share of production of enterprises with an area of 200.01-500.00 hectares increased to 21%, and enterprises with an area of 1000.01-2000.00 hectares decreased to 21%. The volume of production itself experienced a significant decrease in all groups of enterprises, among which the largest decrease in production was experienced by enterprises with an area of 500.01-1000.00 hectares from 6000.8

thousand tons to 3763.4 thousand tons; 1000.01-2000.00 ha from 5806.4 thousand tons to 3459.2 thousand tons; 200.01-500.00 ha from 5044.5 thousand tons to 3325.2 thousand tons. Enterprises with a different area also collected less wheat, but the difference is not so significant in terms of volume.

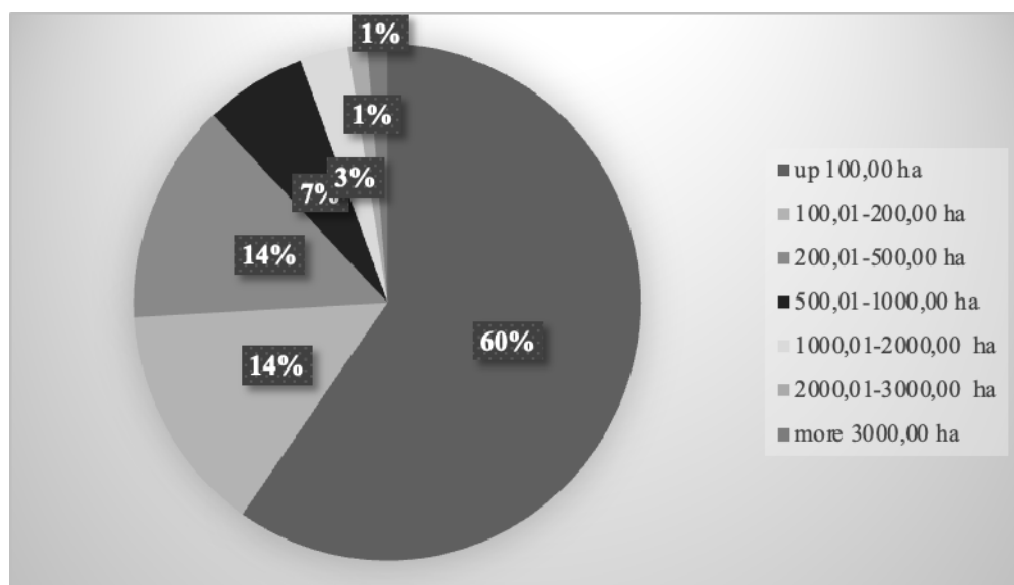


Figure 26. Grouping of enterprises by area size by the number of enterprises producing corn in 2021.

Source: compiled by the authors based on the materials of the State Statistics Service of Ukraine. URL : <https://ukrstat.gov.ua>

According to the indicator of the crop, the largest share is made up of enterprises up to 100.00 hectares, although they produce the smallest share of products - 6% (Fig. 26). All other groups of enterprises, divided by area, make up a much smaller share. The smallest share of enterprises consists of enterprises with an area of 2000.01-3000.00 hectares and more than 3000.00 hectares, 1% each.

Although the share of production of enterprises with an area of more than 3000.00 hectares is the largest - 29% (Fig. 27).

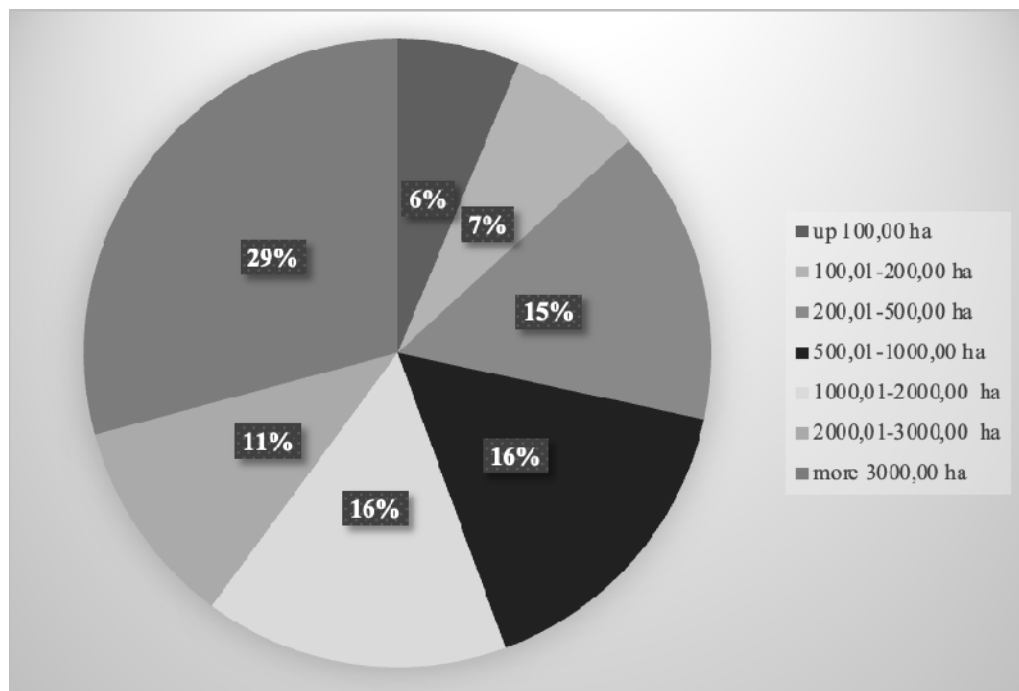


Figure 27. Grouping of enterprises by the size of the area by the gross collection of corn producers in 2021.

Source: compiled by the authors based on the materials of the State Statistics Service of Ukraine. URL : <https://ukrstat.gov.ua>

Enterprises with an area of 200.01 ha-500.00 ha, 500.01-1000.00 ha and 1000.01-2000.00 ha create approximately the same share of the harvest (from 15% to 16%). But the production of each individual group of enterprises is almost half as much as enterprises larger than 3000.00 ha. Enterprises up to 100.00 hectares and 100.01-200.00 hectares produce the least (6% and 7%, respectively).

Thus, we can see that enterprises with the largest area play the biggest role in the production of corn. We compare the results of 2021 with 2022. To achieve this goal, we will create figures 28-29.

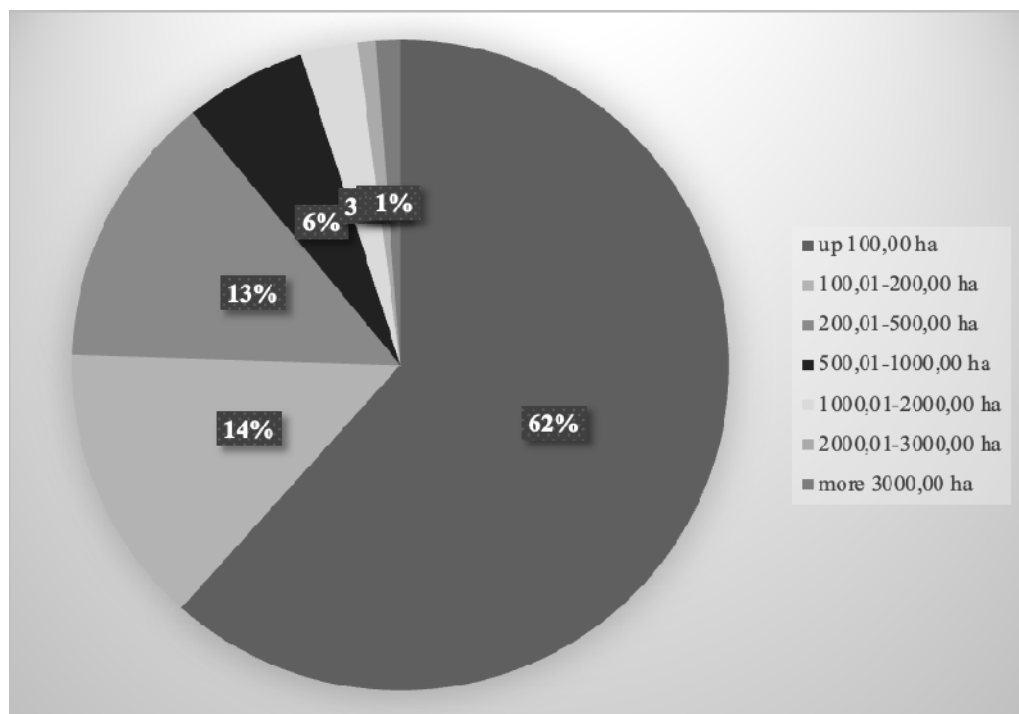


Figure 28. Grouping of enterprises by area size by the number of enterprises producing corn in 2022.

Source: compiled by the authors based on the materials of the State Statistics Service of Ukraine. URL : <https://ukrstat.gov.ua>

Indicators of the number of corn-producing enterprises in 2022, as a share of the total number of enterprises, did not change significantly (within 1-2%). But if we compare precisely by the number in units, we will see that the decrease is quite significant: from 9,357 in 2021 to 7,856 in 2022 in enterprises with an area of up to 100.00 hectares; enterprises with other areas also saw a decrease in the number of enterprises in units, which is

understandable in the conditions of war in Ukraine. The total number of corn-producing enterprises decreased by almost 3,000 enterprises, or rather by 2,907.

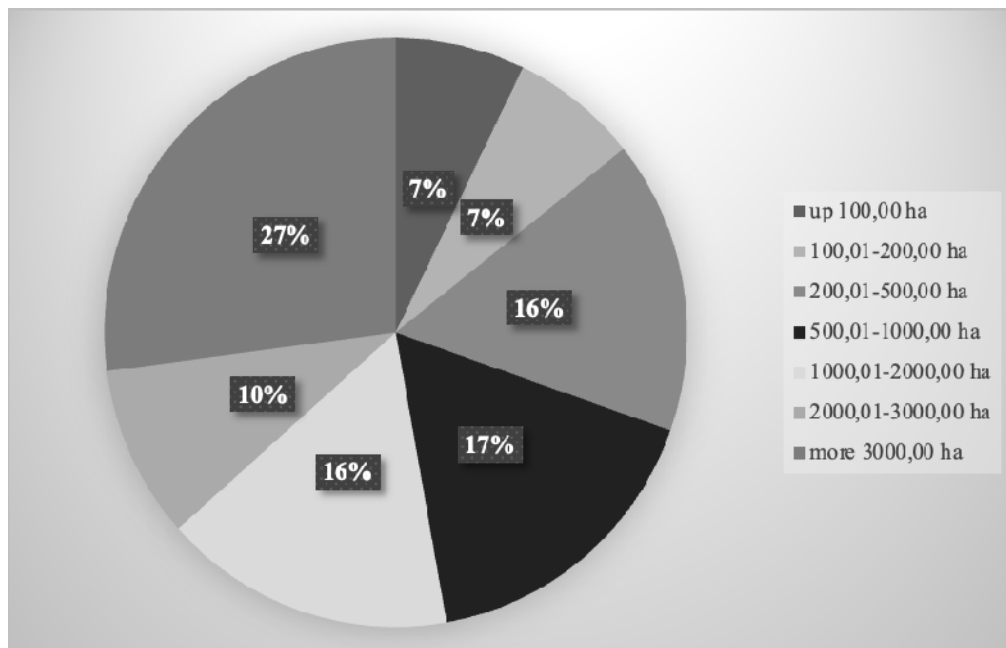


Figure 29. Grouping of enterprises by the size of the area by the gross collection of corn producers in 2022.

Source: compiled by the authors based on the materials of the State Statistics Service of Ukraine. URL : <https://ukrstat.gov.ua>

The gross collection in 2022 was characterized by a decrease in the share of large enterprises in the overall total, which in percentage terms equals a decrease of 2%, and in terms of collection amounts to 4,719.2 thousand tons. Other shares changed slightly or remained unchanged. Although in natural terms, all enterprises produced a smaller amount of products. Against the backdrop of a decrease in the production of enterprises with the largest area, the

share of the smallest increased by 1%. It is also worth noting the decrease in the share of enterprises with an area of 2,000.01-3,000.00 hectares by 1% with a decrease in production volume by 1,815,700 tons.

Next, we will analyze the production of barley, the data for which are shown on fig. 30-33.

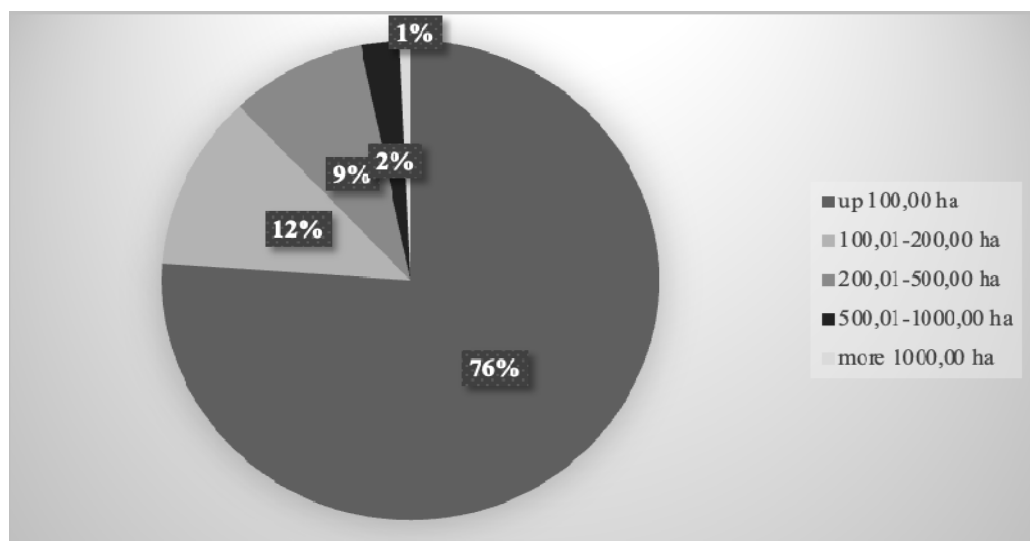


Figure 30. Grouping of enterprises by the size of the area by the number of enterprises producing barley in 2021.

Source: compiled by the authors based on the materials of the State Statistics Service of Ukraine. URL : <https://ukrstat.gov.ua>

According to fig. 30 the largest share of enterprises that produce barley falls on enterprises with an area of up to 100.00 hectares in 2021 - 76%. Their share is the largest in the production of plant products of all those studied earlier. Enterprises with an area of 100.01-200.00 hectares and 200.01-500.00 hectares comprise a much smaller share (12% and 9%, respectively). The smallest share

is made up of enterprises with an area of 500.01-1000.00 ha (2%) and more than 1000.00 ha - 1%. If we compare it with the gross collection shown in the next figure, we can see that the share of the smallest enterprises in it is the second largest - 21%. Which is also the largest share for enterprises with such an area compared to previous plant products.

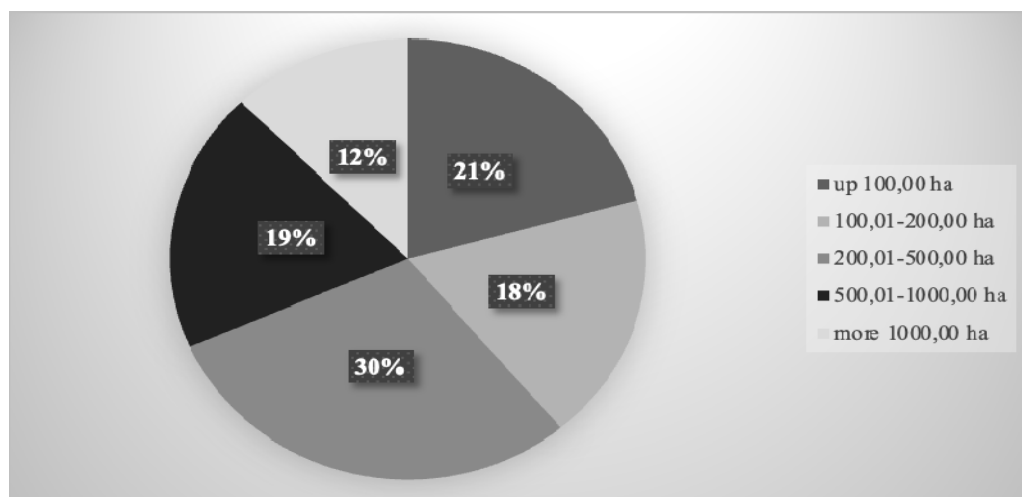


Figure 31. Grouping of enterprises by the size of the area by the gross collection of barley producers in 2021.

Source: compiled by the authors based on the materials of the State Statistics Service of Ukraine. URL : <https://ukrstat.gov.ua>

Figure 31 makes it possible to visualize the studied indicator and to see that the largest role (30%) in the production of barley in 2021 belongs to enterprises with an area of 200.01-500.00 hectares. Enterprises with an area of more than 1000.00 ha (12%) have the lowest rate of participation in the gross harvest of barley. In general, it is worth noting that the fractions do not differ greatly in

comparison with other cultures that have already been analyzed. On fig. 32-33 we will analyze the results by this culture in 2022.

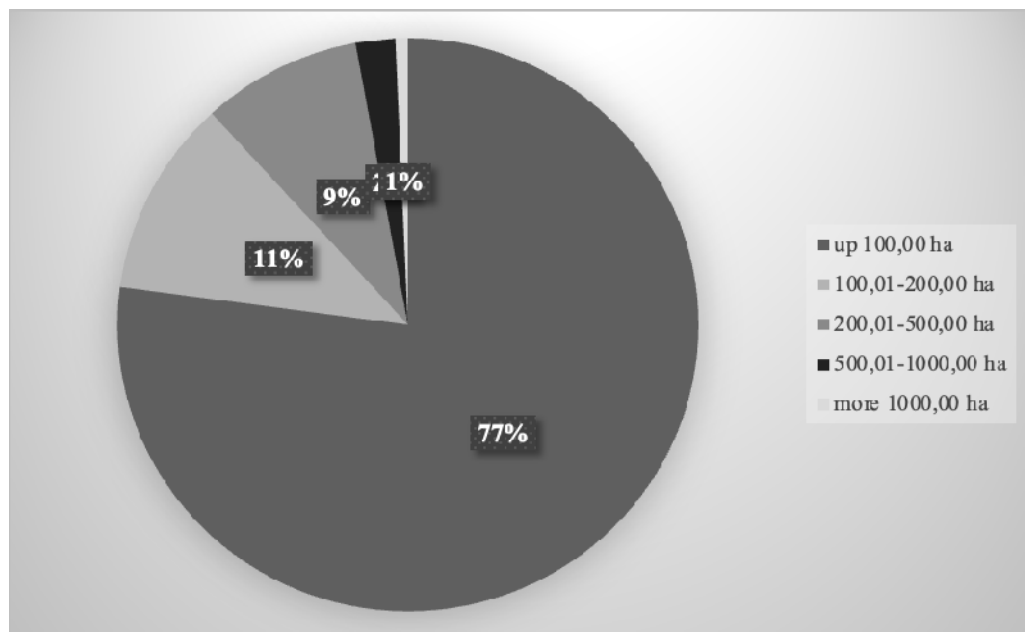


Figure 32. Grouping of enterprises by the size of the area by the number of enterprises producing barley in 2022.

Source: compiled by the authors based on the materials of the State Statistics Service of Ukraine. URL : <https://ukrstat.gov.ua>

In 2022, the share of enterprises did not undergo major changes, but remained almost the same compared to 2021. But the number of enterprises decreased quite significantly in the units themselves - by 4,817. The number of enterprises with the smallest area (up to 100.00 hectares) decreased by 3,579 enterprises. And the share of enterprises in the volume of gross collection has also changed, although the differences are not high: the share of enterprises with the smallest area has increased - up to 22%, and the share of enterprises with the largest (more than 1000.00 ha) - 14%.

The main decrease occurred in enterprises with an area of 500.01-1000.00 hectares - up to 16%, which without rounding is almost 3% below the 2021 indicator.

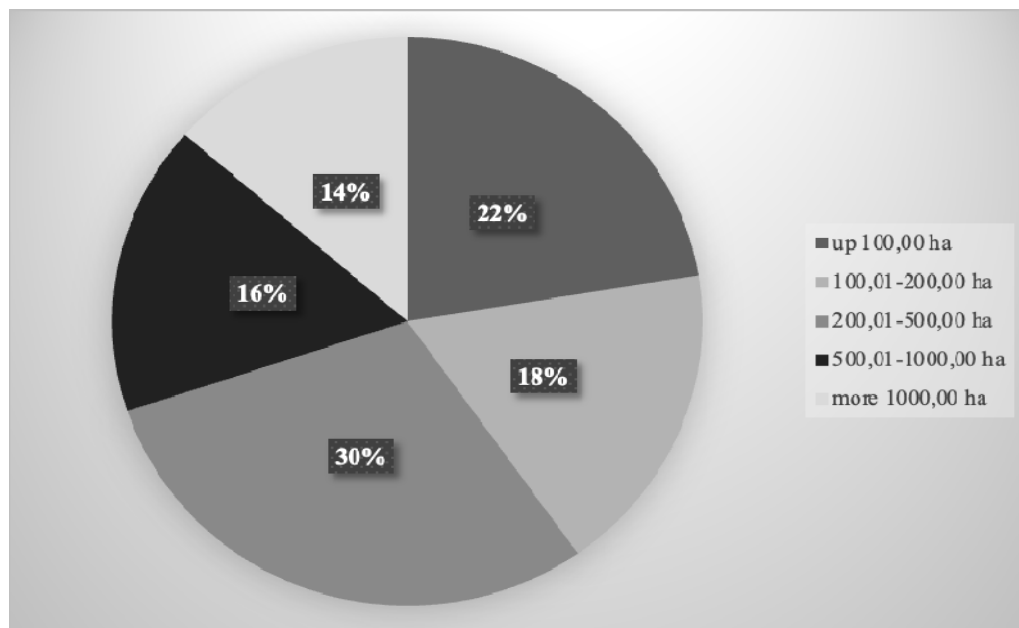


Figure 33. Grouping of enterprises by the size of the area by the gross collection of barley producers in 2022.

Source: compiled by the authors based on the materials of the State Statistics Service of Ukraine. URL : <https://ukrstat.gov.ua>

If we compare by production volume (see Annex A), the decrease is quite significant - almost 1.89 times for the entire production volume. Indicators for all enterprises decreased by almost the same number of times (with some exceptions), except for the indicator of enterprises with an area of 500.01-1000.00 hectares - more than 2 times, which caused a decrease in the share of these enterprises in the total volume of production. In general, we can conclude that the decrease in barley production in 2022 took place

in a significant amount, but each group of enterprises by area plays an important role in the cultivation of this crop.

Next turn to the analysis of soybean production in 2021-2022. (Fig. 34-37).

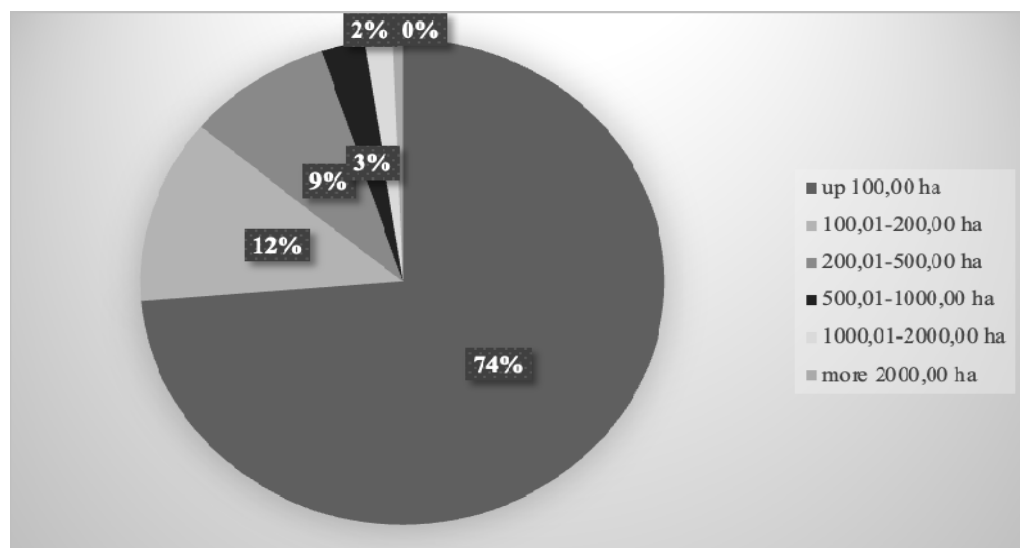


Figure 34. Grouping of enterprises by the size of the area by the number of enterprises producing soya in 2021.

Source: compiled by the authors based on the materials of the State Statistics Service of Ukraine. URL : <https://ukrstat.gov.ua>

From the fig. 34, we can see that among soybean producers, enterprises with an area of up to 100.00 hectares (74%) are most represented, which is also a fairly large indicator. Enterprises with the largest area - more than 2000.00 ha - 0.6% make up the lowest share (see Annex A). Other enterprises make up shares much smaller than the leader in terms of number, but larger enterprises with an area of more than 2,000.00 hectares. In total, shares of enterprises with an area of up to 500.00 hectares represent 95% of the total

volume of enterprises. This is worth paying attention to taking into account the Figure 35.

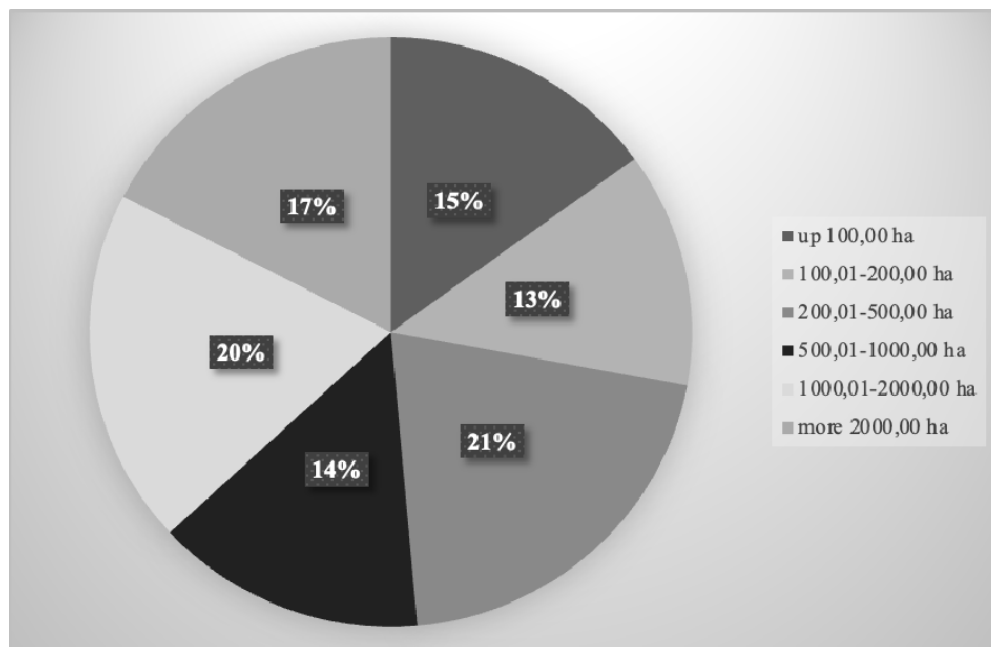


Figure 35. Grouping of enterprises by the size of the area by the gross collection of soybean producers in 2021.

Source: compiled by the authors based on the materials of the State Statistics Service of Ukraine. URL : <https://ukrstat.gov.ua>

The data in this figure show that the contribution of all enterprises to the production of soya in Ukraine in 2021 did not have large differences: from a minimum of 13% in enterprises of 100.01-200.00 ha to 21% in enterprises of 200.01-500.00 ha. Enterprises with the largest share by quantity (up to 100.00 ha) produce 15% of soya, while the largest by area (more than 2000.00 ha) and the smallest by share by quantity produce soya more than the previous group of enterprises (17%). Which indicates the importance of each group of enterprises in the gross collection of this crop.

As the following step we compare the indicators of 2021 with the indicators of 2022.

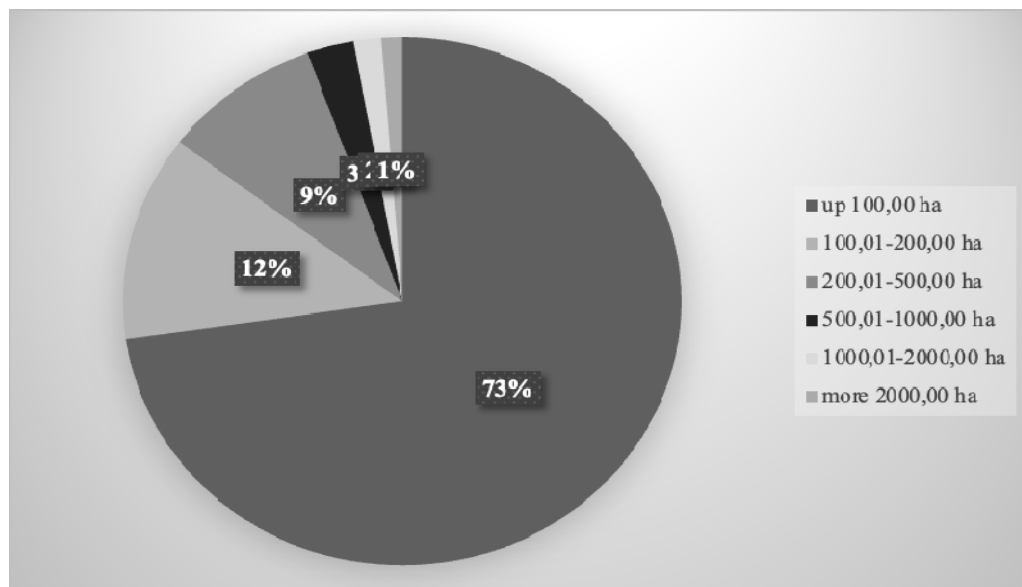


Figure 36. Grouping of enterprises by the size of the area by the number of enterprises producing soya in 2022.

Source: compiled by the authors based on the materials of the State Statistics Service of Ukraine. URL : <https://ukrstat.gov.ua>

According to the fig. 36 major changes did not occur except for a 1% decrease in the share of enterprises with the smallest area and an increase in the share of enterprises with the largest area. If we analyze the number of enterprises, it is worth noting the fact that there has been no quantitative decrease of enterprises, but, on the contrary, there has been an increase (see Annex A). For all groups of enterprises by area, there was an increase in the number except for the group of 1000.01-2000.00 ha - the number of enterprises decreased by 6 units. The largest increase in the number is observed

precisely in enterprises with an area of more than 2,000.00 hectares - 1.85 times (54 in 2021 and 100 in 2022). This justifies the minor changes in the shares.

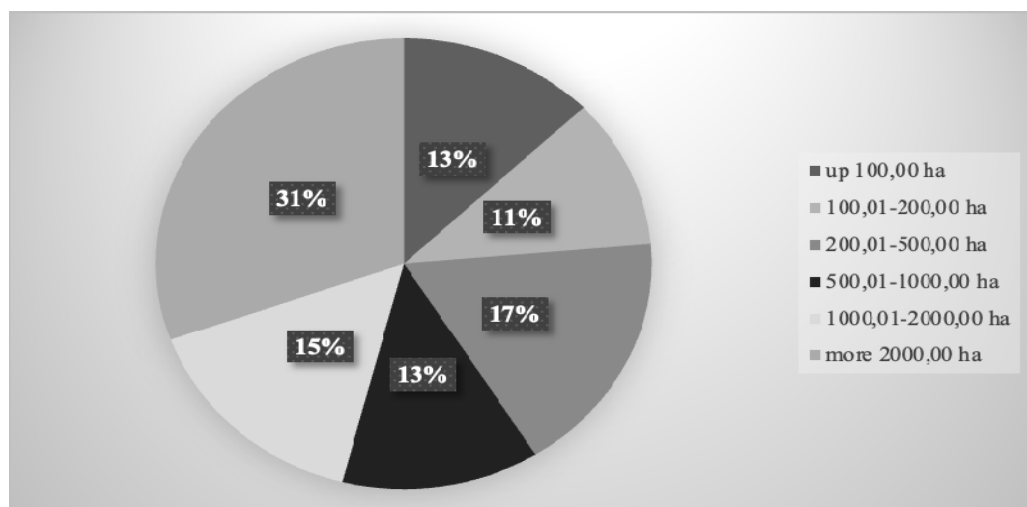


Figure 37. Grouping of enterprises by the size of the area by the gross collection of soybean producers in 2022.

Source: compiled by the authors based on the materials of the State Statistics Service of Ukraine. URL : <https://ukrstat.gov.ua>

The analysis of the change in the share of the contribution of each group of enterprises to the collection of products reflects the following: despite the increase in the number of enterprises, soybean production remained almost at the same level - a decrease of 1.2 thousand tons was recorded, i.e., there was a decrease in productivity for the group of enterprises with the smallest area and other enterprises as well. All other enterprises also showed a decrease in soybean production and, accordingly, a decrease in the share in the gross harvest in Ukraine, except for enterprises with an area of more than 2000.00 hectares. The growth in the production of the latter in

natural size amounted to 409.5 thousand tons. It was the production of this group of enterprises that almost kept last year's result.

To develop our analysis, we will consider the culture “winter rape and spring rape”. The results of the production of this crop in 2021-2022 shown in fig. 38-41.

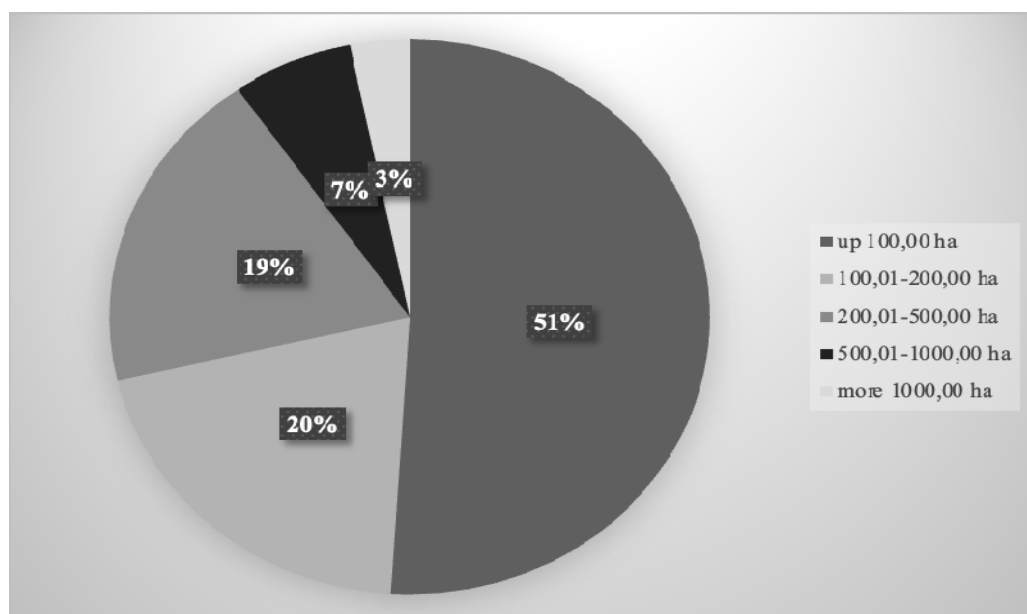


Figure 38. Grouping of enterprises by area size by the number of enterprises producing winter rapeseed and spring rapeseed in 2021.

Source: compiled by the authors based on the materials of the State Statistics Service of Ukraine. URL : <https://ukrstat.gov.ua>

According to the data of 2021, the largest share of enterprises belongs to enterprises with an area of up to 100.00 hectares - 51%. But the share of enterprises with an area of 100.01-200.00 ha (20%) and 200.01-500.00 ha (19%) is quite significant. Enterprises with an area of 500.01-1000.00 hectares (almost 7%) and enterprises with an

area of more than 1000.00 hectares (3%) make up a smaller share. The share of enterprises with the largest area in this culture is greater than in the previously analyzed ones.

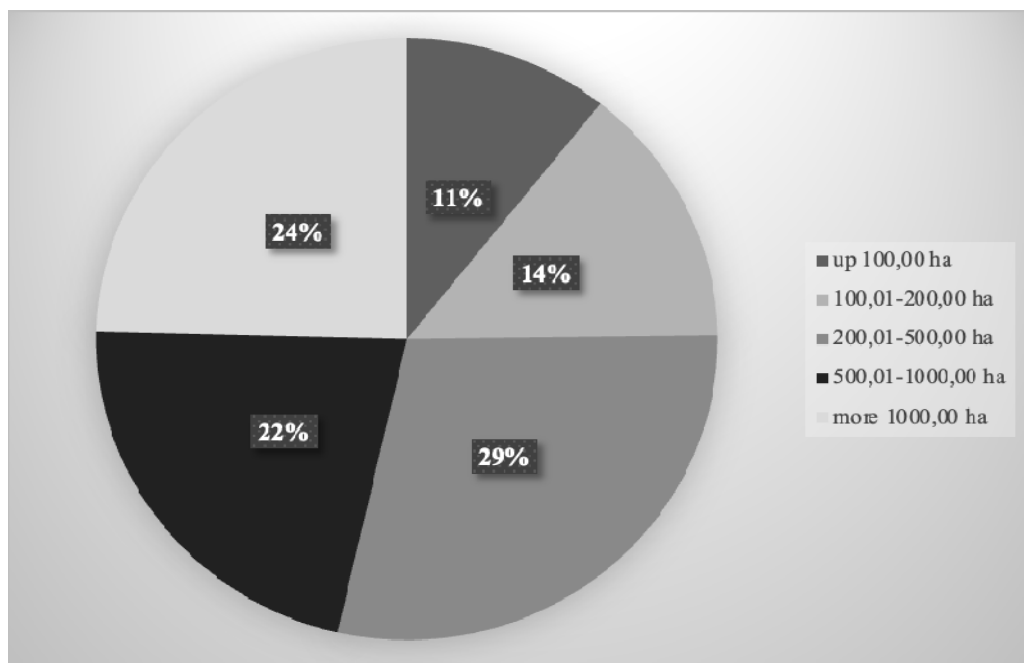


Figure 39. Grouping of enterprises by size of area by gross harvest of producers of winter rapeseed and spring rapeseed in 2021.

Source: compiled by the authors based on the materials of the State Statistics Service of Ukraine. URL : <https://ukrstat.gov.ua>

Figure 39 allows us to see not too big differences in the contribution of each group of enterprises to the gross collection. But it is worth noting that enterprises, which by number make up a total share of 90%, produce a little more than 50% of rapeseed, while enterprises whose total share is up to 10% grow almost half of the harvest of this crop in Ukraine.

Companies with an area of 200.01-500.00 hectares produce the most rapeseed - 29%.

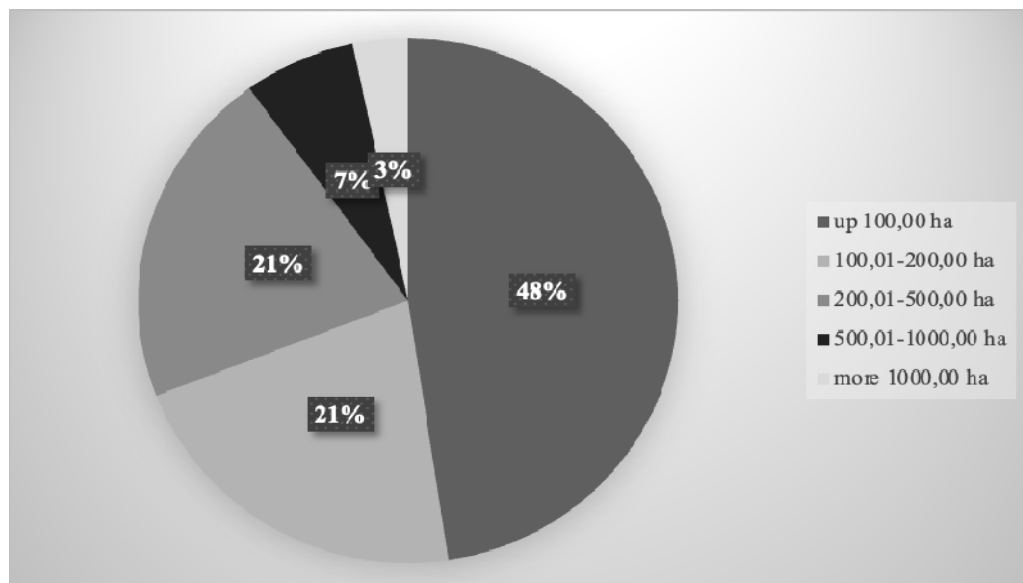


Figure 40. Grouping of enterprises by the size of the area by the number of enterprises producing winter rape and spring rape in 2022.

Source: compiled by the authors based on the materials of the State Statistics Service of Ukraine. URL : <https://ukrstat.gov.ua>

The analysis of data for 2022 showed that the share of enterprises with the smallest area - up to 100.00 hectares - decreased by 3% to 48%. The shares of enterprises with an area of 100.01-200.00 ha and 200.01-500.00 ha increased slightly. But it is the number of enterprises, identical to soya, that has increased, which does not correspond to the previous trend. Thus, the number of enterprises was 5,178 in 2022, which is 438 more than the figure for 2021. The increase in the number of enterprises occurred in all groups by area. The largest increase is observed in the group of

enterprises with an area of 200.01-500.00 hectares - by 184 enterprises.

In the next fig. given data on the share of enterprises in gross collection in 2022.

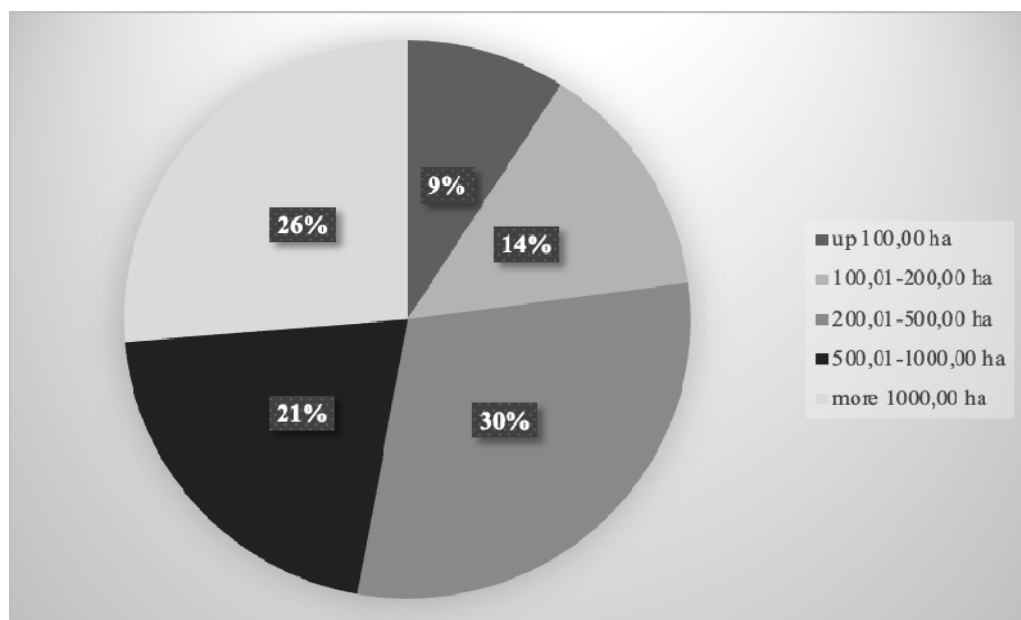


Figure 41. Grouping of enterprises by area size by gross harvest of winter rapeseed and spring rapeseed producers in 2022.

Source: compiled by the authors based on the materials of the State Statistics Service of Ukraine. URL : <https://ukrstat.gov.ua>

The production of winter and spring rape increased in 2022 by 393.8 thousand tons, which differs from the general trend in crop production (except soya). The analysis by groups of enterprises revealed that the production of rapeseed increased in all groups, except for the group with the smallest area, which was reflected in the share of the contribution of this group of enterprises to the gross harvest - a decrease of more than 1%. Correlates with the growth of

the number of enterprises and the growth of production and share: enterprises with an area of 200.01-500.00 ha have the highest result in terms of share in the gross collection - 30%.

Thus, soya and rape are the only crops that did not decrease in the number of enterprises in 2022.

The next crop we will analyze will be sunflower production in 2021-2022. Figures 42-45 show the results of statistical data processing.

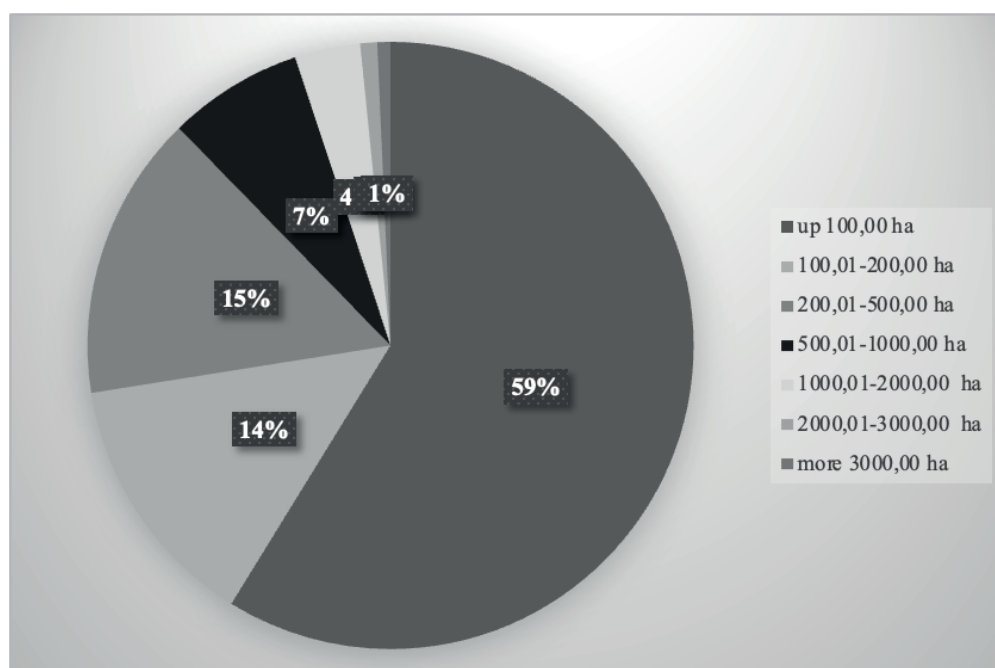


Figure 42. Grouping of enterprises by area size by the number of sunflower-producing enterprises in 2021.

Source: compiled by the authors based on the materials of the State Statistics Service of Ukraine. URL : <https://ukrstat.gov.ua>

In the production of this crop in 2021, enterprises with the smallest area are most represented (59%). The shares of enterprises

with an area of 100.01-200.00 ha (14%) and 200.01-500.00 ha (15%) are a little smaller.

Enterprises with an area of 2,000.01-3,000.00 hectares and more than 3,000.00 hectares (1% each) are least represented. Enterprises with an area of 1000.01-2000.00 hectares also play a small role in terms of number - almost 4%

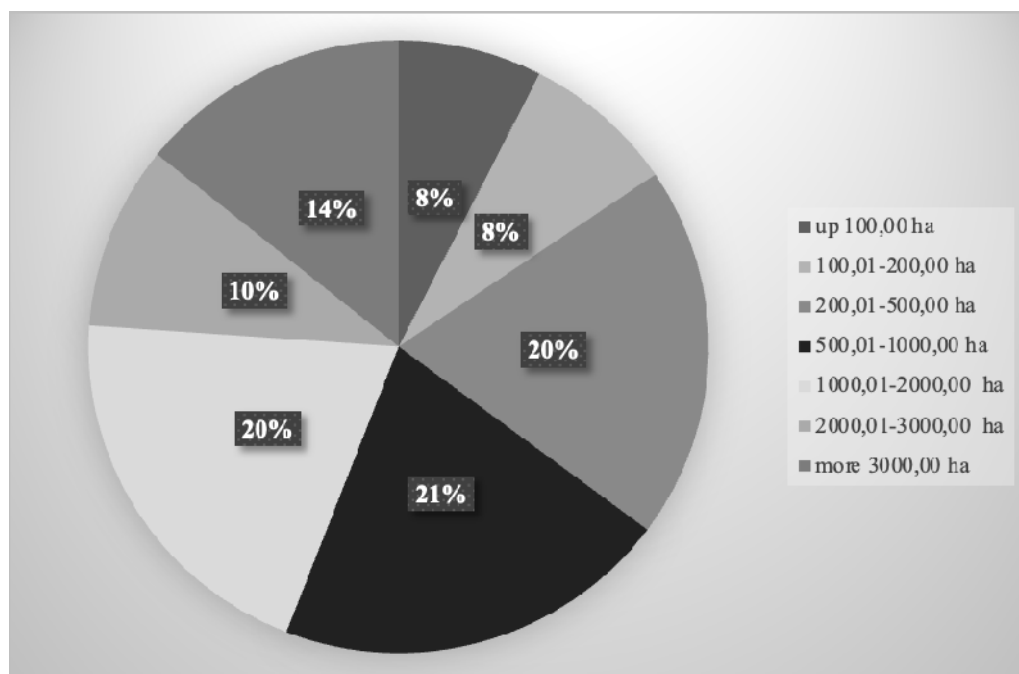


Figure 43. Grouping of enterprises by the size of the area by the gross collection of sunflower producers in 2021.

Source: compiled by the authors based on the materials of the State Statistics Service of Ukraine. URL : <https://ukrstat.gov.ua>

As we can see from the figure, the contribution of each group of enterprises to the gross harvest of sunflower is significant, where the largest share is enterprises with an area of 500.01-1000.00 ha (almost 21%), 200.01-500.00 ha (20%) and 1000.01-2000.00 ha (20%). The smallest contribution of enterprises with an area of up to

100.00 ha (almost 8%) and 100.01-200.00 ha (8%). It is worth noting that more than 60% of the gross collection is provided by enterprises, which make up 12% by number of enterprises. Enterprises with the smallest share in the number of enterprises produce almost 2 times more sunflower than enterprises up to 100.00 hectares.

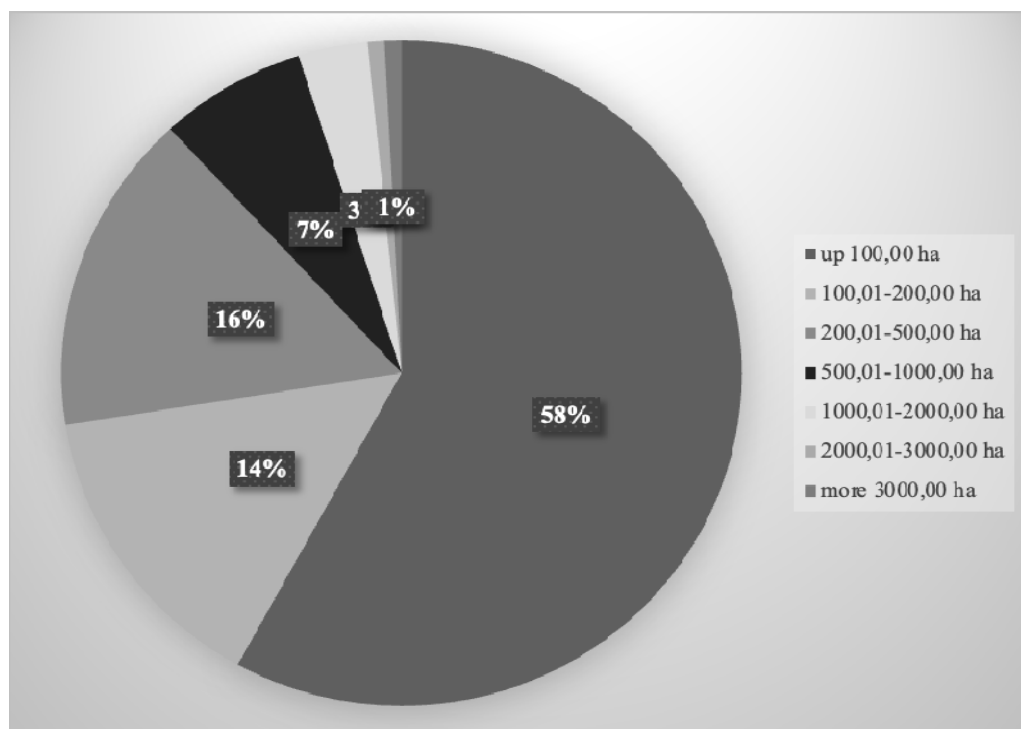


Figure 44. Grouping of enterprises by the size of the area by the number of enterprises producing sunflower in 2022.

Source: compiled by the authors based on the materials of the State Statistics Service of Ukraine. URL : <https://ukrstat.gov.ua>

In 2022, there were no significant changes among the share of sunflower producers grouped by area: the share of enterprises with the smallest area decreased to 58% (by 1%), for other enterprises, changes also occurred insignificantly (up to 1%). In the number of

enterprises, we observe a decline of 4,518 units, which is quite noticeable. We see a decrease in the number of enterprises in all groups, but the largest are enterprises with an area of up to 100.00 ha, 500.01-1000.00 ha, 1000.01-2000.00 ha, and 2000.01-3000.00 ha. The smallest decrease occurred in the group of enterprises with an area of more than 3,000.00 hectares. This situation can be explained by significant military actions in the territories of those regions that specialize in sunflower production. Changes in the production of this crop are shown in fig. 45.

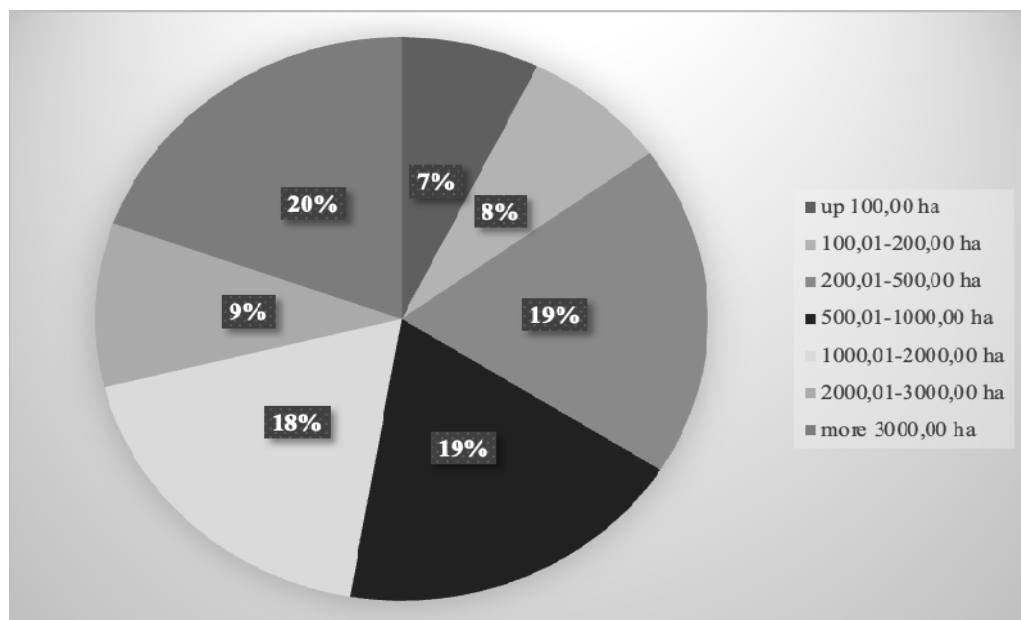


Figure 45. Grouping of enterprises by the size of the area by the gross collection of sunflower producers in 2022.

Source: compiled by the authors based on the materials of the State Statistics Service of Ukraine. URL : <https://ukrstat.gov.ua>

As for the gross collection of sunflower in 2022, we are observing certain changes, which are insignificant especially in the

share of groups of enterprises. The most noticeable is the growth of the role of the largest enterprises in the gross harvest of sunflower: from 14% in 2021 to almost 20% in 2022. It is also worth mentioning the decline in the shares of enterprises with an area of 500.01-1000.00 ha and 1000.01-2000.00 hectares within 2%.

If we compare changes in natural terms (see Annex A), we will see that the decrease in sunflower production is significant: by 4,226 thousand tons. The decrease in production volumes occurred for all groups of enterprises, but the least for enterprises with an area of more than 3000.00 hectares (by 69 thousand tons), which explains the increase in the share of these enterprises in the production of this crop.

Next, we will analyze statistical material on factory sugar beet production in 2021-2022. (Fig. 46-49).

This figure (46) shows the shares of enterprises grouped by area in the total number of factories producing sugar beet. The largest share is enterprises with an area of up to 100.00 hectares (almost 50%), which is the smallest indicator among all analyzed cultures. The fairly high specific weight of enterprises with the largest area (more than 1000.00 hectares) is noticeable - 9%. It is also notable that enterprises with an area of 500.01-1000.00 hectares have a smaller number of enterprises than enterprises with a larger area (45 and 50, respectively), which is atypical for all previous cultures.

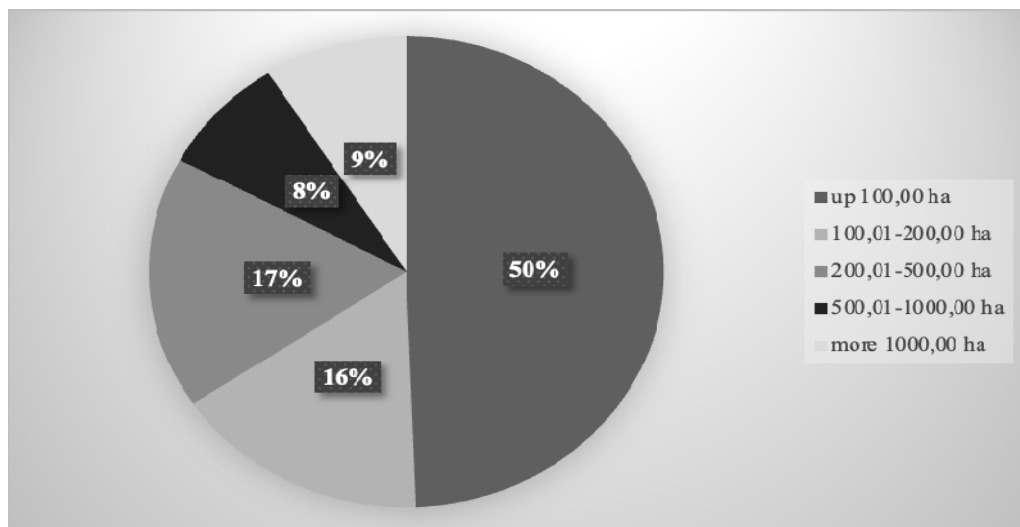


Figure 46. Grouping of enterprises by area size by the number of enterprises producing sugar beet in 2021.

Source: compiled by the authors based on the materials of the State Statistics Service of Ukraine. URL : <https://ukrstat.gov.ua>

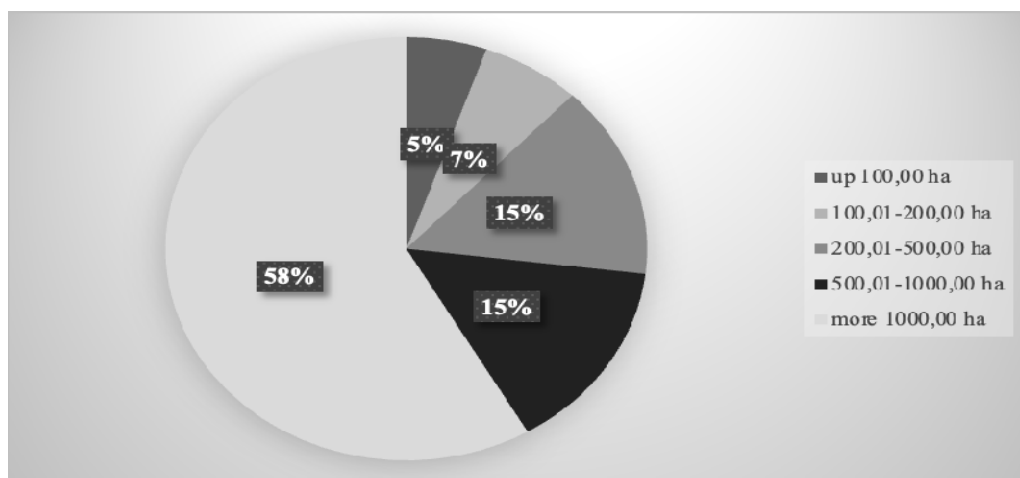


Figure 47. Grouping of enterprises by area size by gross collection of sugar beet producers in 2021.

Source: compiled by the authors based on the materials of the State Statistics Service of Ukraine. URL : <https://ukrstat.gov.ua>

In the production of sugar beet in 2021, the largest share in terms of gross harvest belongs precisely to enterprises with the largest area (more than 1000.00 hectares) - 58%. Which is also the biggest result of all the above. On the other hand, enterprises with an area of up to 100.00 ha produce a little more than 5% of beets. 16% of enterprises with an area of 100.01-200.00 hectares produce 7% of the entire gross sunflower harvest, which is also a low indicator.

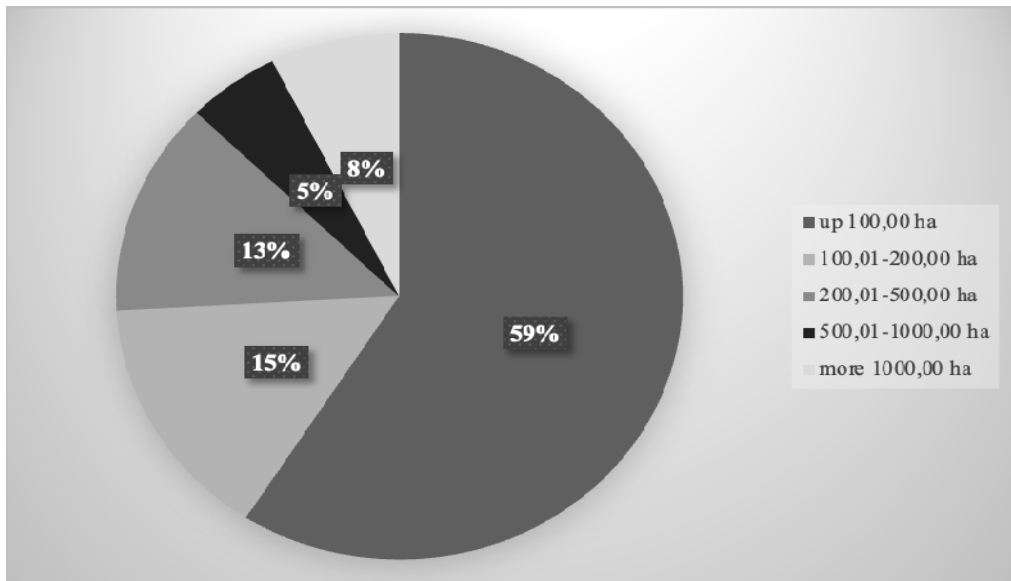


Figure 48. Grouping of enterprises by area size by the number of enterprises producing sugar beet in 2022.

Source: compiled by the authors based on the materials of the State Statistics Service of Ukraine. URL : <https://ukrstat.gov.ua>

According to the results of 2022, we have the following: the share of enterprises with the smallest area (up to 100.00 hectares) has increased significantly - up to 59%, which is almost 10% higher than in 2021. For other groups, a fairly significant decrease is

observed, which occurs due to a decline the number of enterprises producing factory sugar beet. Thus, the total number of enterprises decreased by 67 units, which seems like a small number, but taking into account the number of enterprises, the decline occurred by 1.14 times. However, the number of enterprises with the smallest area (up to 100.00 hectares) increased by 14, in contrast to other groups of enterprises. This justifies such changes in the shares of enterprise groups in Fig. 49.

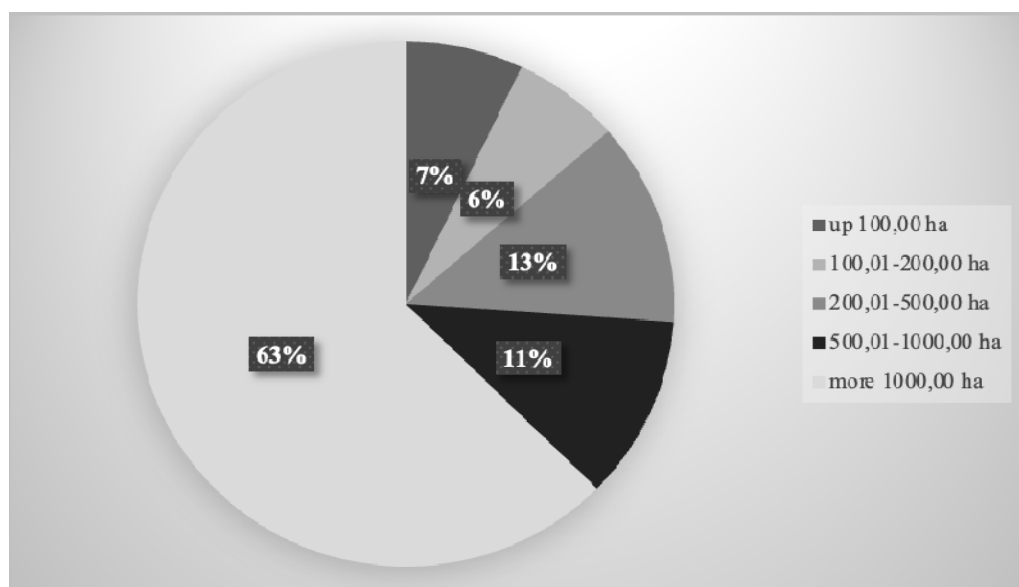


Figure 49. Grouping of enterprises by area size by gross collection of sugar beet producers in 2022.

Source: compiled by the authors based on the materials of the State Statistics Service of Ukraine. URL : <https://ukrstat.gov.ua>

According to the gross collection in 2022, there were also changes in the distribution by shares, namely: the share of enterprises with the smallest area increased (by 2%), the shares of enterprises with an area of 200.01-500.00 ha and 500.01-1000.00 ha decreased

significantly (decline within 2-3%). But the share of enterprises with an area of more than 1000.00 ha also increased (by 5%).

Analysis of the gross collection in natural units reflects a decrease of 845.7 thousand tons. In general, a decrease in the gross collection is observed not for all groups of enterprises, for example, enterprises with an area of up to 100.00 hectares increased the volume of produced products, namely, they collected more sugar beet by 113.3 thousand tons. Other groups of enterprises have reduced the production of this crop, but exactly the difference between the past and 2022 depends on each individual group. For example, enterprises with an area of more than 1000.00 hectares collected 90.7 thousand tons of beets less. And the enterprise with an area of 200.01-500.00 ha produced almost 350 thousand tons less sugar beet. This explains the changes in participation in the total gross harvest of sugar beets.

From the conducted analysis, we can conclude that the production of the above crops underwent certain changes in 2022 compared to 2021: it mostly decreased for the considered crops (except soya and rape). This decline is justified by the factors that currently affect the safety of life in our country, namely the full-scale war that began on February 24, 2022. As a result, a large amount of land is either under occupation or is unsuitable for agricultural work due to military actions or mining territory

It is worth mentioning that the analysis showed the largest share of enterprises with an area of up to 100.00 hectares for almost

all crops, although this does not always correlate with the corresponding share in the gross harvest of a particular crop. In contrast, enterprises with the largest area (which varies depending on the crop) have small shares in terms of the number of enterprises, but quite significant in terms of the gross collection of different crops.

In the future, we will proceed to the analysis of the indicator of the index of agricultural products, which reflects the level of changes in the physical volume of production of agricultural products, which was chosen for comparison.

In fig. 50, we will show the dynamics of the index of agricultural products by month in 2021.

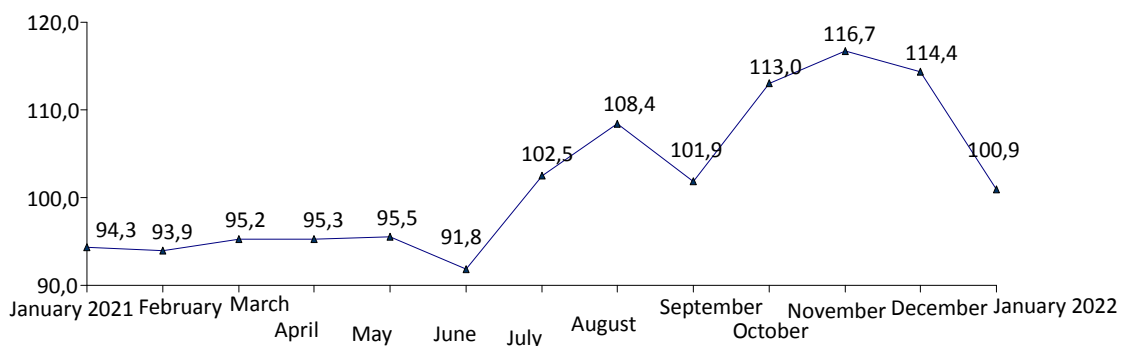


Figure 50. Indices of agricultural products in Ukraine, January 2021-January 2022. (in % to the corresponding period of the previous year)

Source: compiled by the authors based on the materials of the State Statistics Service of Ukraine. URL : <https://ukrstat.gov.ua>

Analysis of this figure allows to clearly see the dynamics of the index. As you can see, until June, the index did not undergo large fluctuations and was in the range of 93.9-96.3%, but in June it

significantly decreased - to 91.8% of the previous year, which shows a decline in the volume of agricultural production during the first half of 2021 compared to 2020. But the further trends of the second half of 2021 are characterized by the growth of this index, and quite noticeable. Thus, in November, the index equaled 116.7%. In October-December 2021, the indices exceeded the indicator by 110%, which is a positive trend. The indicator of January 2022 exceeded the index of January 2021, which reflects the growth of the natural volume of production at the beginning of 2022.

In Fig. 51 we will present the dynamics of the index of agricultural products in 2010-2022 in the section of the entire agriculture, crop production and livestock production.

This figure shows the dynamics of the index of agricultural production for 12 years (from 2010 to 2022 inclusive). As you can see, the general index of agriculture has fairly large fluctuations over the years. So, in 2011, the indicator reached 120% of the previous year's indicator, which is very positive, but in the following year 2012, it decreased quite strongly and its result was less than 100% of the previous year and below the result of 2010. The growth of the index in 2013 was leveled off by the start of the war in Ukraine in 2014 and a further decrease in 2015. The significant decline of this indicator in 2020 is explained by the pandemic that was in Ukraine, which also affected agriculture. After 2020, there was a noticeable increase in the production of agricultural products

in 2021, which significantly decreased in 2022 due to objective reasons and active military actions on the territory of our state.

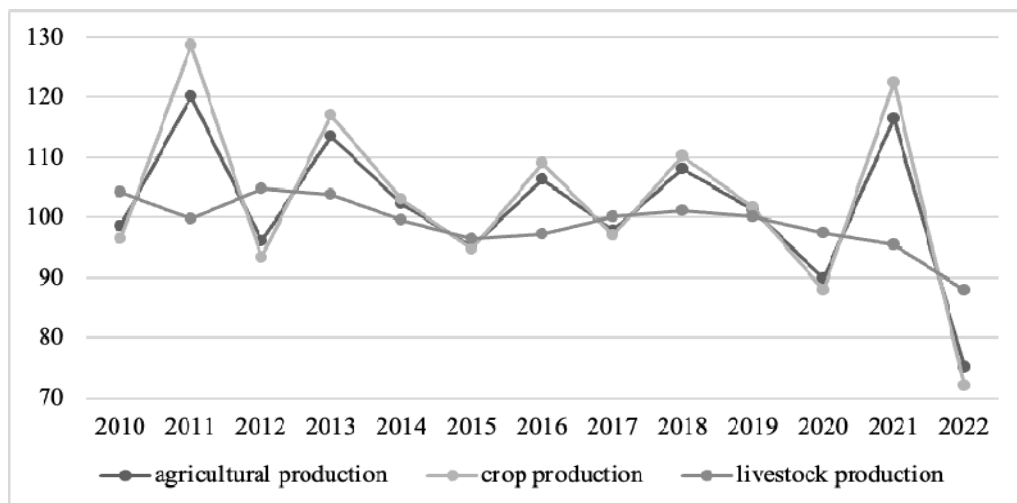


Figure 51. Index of agricultural products in 2010-2022 (in % compared to the corresponding period of the previous year)

Source: compiled by the authors based on the materials of the State Statistics Service of Ukraine. URL : <https://ukrstat.gov.ua>

Also the fig. 51 shows the dynamics of the index of crop production and livestock production. If we compare the changes of these two subgroups, we can see that they also have both positive and negative changes, but the discrepancy in results by year is greater in crop production. Crop production index that has the highest positive and negative results during the analyzed period. Thus, the highest increase in the index for crop production was in 2011, when the index was equal to 130%, as well as the largest decline in 2020 (less than 90%) and 2022 (slightly higher than 70% of the previous year).

The dynamics of the index of livestock production also has positive and negative changes, but the trend is more even if compared with crop production. The index shows that the increase in the volume of production in physical form, if there was any, was insignificant. Indicators of 2017-2019 have results that are almost equal to 100%, after that period we observe a constant decrease in the volume of livestock production compared to the previous year. The largest decline is recorded in 2022, but it is not as radical as in crop production. This can be explained by the fact that enterprises that produce livestock products are not located so close to military operations.

In conclusion, we can say that the greatest contribution to the change in the index of agricultural production is made by crop products, which is justified by the volume of production of these production in Ukraine and the gradual decrease in the share of animal husbandry in the country's agriculture, which we have already mentioned about above.

The dynamics of the index reflect the dependence on crisis situations in society: for example, the beginning of the war in 2014, the COVID-19 pandemic, Russia's full-scale military aggression against Ukraine. These factors significantly affect the development of agriculture in our country. A preliminary analysis showed a decline in the gross collection of more crops.

As the next step, we will analyze the change in the index in 2020-2022 by regions of Ukraine (table 13).

Table 13. Indices of agricultural products by region (in % compared to the corresponding period of the previous year)

	Agricultural production				Including					
					Crop production		Livestock production			
	2020	2021	2022		2020	2021	2022	2020	2021	2022
Ukraine	89,9	116,4	75,0		87,9	122,6	72,0	97,5	95,4	88,0
Vinnitsya	85,2	122,1	81,7		78,2	136,3	75,0	100,6	97,7	97,9
Volyn	100,4	102,8	97,0		101,4	105,4	99,0	98,3	97,1	92,1
Dnipropetrovsk	85,7	122,3	80,9		81,5	128,8	78,1	100,4	103,9	90,7
Donetsk	95,8	108,0	26,5		95,0	114,7	21,6	98,2	87,8	45,7
Zhytomyr	95,3	112,2	83,5		95,1	116,3	82,6	96,0	95,4	88,1
Zakarpattia	96,5	91,9	100,5		101,2	93,0	101,8	91,8	90,5	99,1
Zaporizhya	88,4	117,4	25,1		87,8	122,7	23,4	92,8	82,6	41,7
Ivano-Frankivsk	103,5	105,5	98,1		105,9	113,6	97,5	100,3	93,8	99,1
Kyiv	83,9	119,0	79,2		78,0	135,8	76,2	98,0	87,3	88,0
Kirovohrad	70,5	146,3	86,5		67,5	154,6	85,1	96,2	97,8	99,6
Luhansk	88,6	107,4	29,8		87,7	108,2	25,7	98,7	99,4	73,2
Lviv	104,4	107,6	103,4		106,1	109,5	105,8	100,5	103,2	97,3
Mykolayiv	76,1	147,0	56,2		74,2	155,7	54,2	91,3	91,5	77,6
Odesa	61,0	192,0	68,5		56,7	212,0	66,0	96,6	95,1	95,4
Poltava	88,8	109,6	99,7		87,8	111,8	100,3	94,0	98,4	96,6
Rivne	103,0	102,0	95,8		105,3	104,3	95,5	96,1	94,3	96,6
Sumy	103,7	90,1	93,7		104,4	90,5	96,3	98,9	87,5	75,1
Terнопil	100,0	113,4	95,3		99,4	115,1	93,7	102,6	106,3	102,9
Kharkiv	98,0	98,3	44,2		99,0	100,7	45,2	92,8	84,5	37,4
Kherson	94,6	113,9	4,9		94,8	118,5	3,1	93,7	83,4	21,3
Khmelnitskiy	97,4	113,6	89,8		97,7	116,5	86,6	96,0	100,6	106,6
Cherkasy	78,7	134,9	87,3		69,2	159,0	84,7	98,6	99,4	93,4
Chernivitsi	99,8	109,2	91,9		100,6	116,3	90,9	97,8	92,2	94,8
Chernihiv	102,9	105,8	79,2		104,3	106,9	77,6	93,0	96,7	93,2

Source: Statystychnyy zbirnyk «Sil's'ke hospodarstvo Ukrainyy». URL :
https://ukrstat.gov.ua/druk/publicat/kat_u/2023/zb/09/S_gos_22.pdf (in Ukrainian)

2022.

Table 13 provides data on the index of agricultural production by oblasts of Ukraine, both in terms of the general index of agriculture of Ukraine, and in terms of crops and livestock production. The analyzed period is 2020-2022, two of these years are crisis years for our country.

According to this table, we can see that the index change trends are different by region and vary depending on the year. So, for example, in 2020, the highest index was in Lviv oblasts (104.4%), which increased in 2021 to 107.6% (here Lviv region no longer occupies a leading position), and in 2022 it was equal to 103, 4%, which again makes this area the leader with the highest index. The regions with the highest index in 2020 (except Lviv) are Sumy (103.7%) and Ivano-Frankivsk (103.5%), and the lowest indicators are Odesa (61.0%), Mykolayiv (76.1%) and Cherkasy regions (78.7%).

In 2021, Odesa (192.0%), Mykolayiv (147.0%), and Kirovohrad (146.3%) oblasts were the leaders in the index. And the lowest positions are in Sumy (90.1%), Zakarpattya (91.9%) and Kharkiv (98.3%) oblasts. The results of the production of agricultural products of these regions are lower than the previous year 2020. The result of the Sumy region is quite surprising, because in 2020 it showed positive dynamics with 103.7% of the index, and in 2022 the index of this region was equal to 93.7%, which is not the lowest showing and even higher than in 2021, although the Sumy

region is in the zone of active hostilities and cannot produce products at full capacity and realize its potential in war conditions.

In 2022, the only regions that showed a result of the index and an increase in the natural volume of production were Lviv (103.4%) and Zakarpattya (100.5%), which fully correlates with the data analyzed by us above. The lowest indicator of the index is in Kherson (4.9%), Zaporizhya (25.1%), Donetsk (26.5%) and Luhansk (29.8%) regions. These results are based on the fact that they were partially occupied by 2022, which made it impossible to produce agricultural products.

The results by areas of crop and livestock production also indicate a significant stratification of the regions of Ukraine in the production of certain crops. As in the general index, there are oblasts in 2022 that showed a positive result despite the military actions, namely Zakarpattya, Lviv, and Poltava oblasts. The regions with the lowest index are identical to the general index of agricultural production.

The trends of changes in the livestock production index are less positive during 2020-2022, but the decrease by region is not so great compared to crop production. Khmelnytskyi and Ternopil regions showed an index above 100% in 2022. This is justified by the fact that these regions are not on the demarcation line and further from active military operations.

Next, we will analyze the data on the volume of agricultural production that was sold. This analysis will be done in terms of enterprise sizes (Fig. 52).

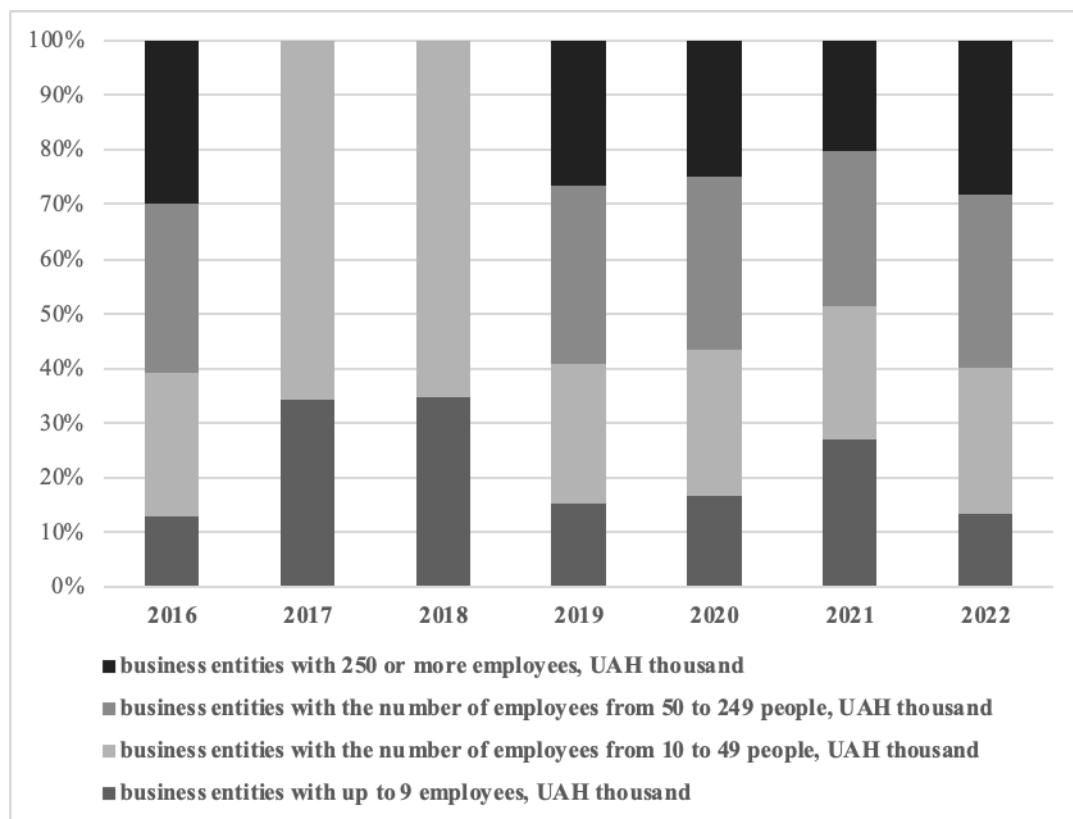


Figure 52. Volume of sold products (goods, services) of economic entities by types of economic activity with distribution by the number of employed workers in 2016-2022 (% of the total result)

Source: compiled by the authors based on the materials of the State Statistics Service of Ukraine. URL : <https://ukrstat.gov.ua>

Annex A shows the volume of products sold depending on the number of employees in monetary terms. Figure 52 shows the share of each type of enterprise in the sale of agricultural products. In

2017-2018 data of enterprises with the number of employees from 50 to 249, as well as from 250 people were not provided.

The figure shows that enterprises with a different group of employees, depending on the year of the study, sold agricultural production the most. If in 2016 the share of enterprises with up to 9 employees was the smallest, then in 2017-2018 it grew significantly. But it can be assumed that this is due to the lack of data for the other two groups of enterprises. However, in 2021, available data for all types of enterprises and the share of the smallest of them in terms of the volume of employees is 25%. In 2016, the contribution of each type of enterprise, except for the one analyzed above, was almost equal. Although in 2019-2021 the share of large enterprises (employing 250 people and above) decreased from more than 25% in 2019 to 20% in 2021. However, in 2022, the share of sales of large enterprises increased again to almost 30%. The share of the smallest enterprises experienced a significant decrease in 2022.

Table 14 shows the share of agricultural products sold in the total volume of sales in Ukraine in 2016-2022.

This table will allow us to see the importance of enterprises of different sizes in the total volume of sales of Ukraine, that is, to determine their role in the country's economy. We can compare the data of 2020 and 2022, which were a crisis for the economy of our country.

Table 14. The share of agricultural production in the total volume of production in Ukraine, 2016-2022.

Business entities with the number of employees	2016	2017	2018	2019	2020	2021	2022
up to 9, %	5,11	4,68	4,22	4,46	4,65	8,04	5,92
from 10 to 49, %	9,62	9,32	8,70	7,80	8,91	8,50	9,33
from 50 to 249 осіб, %	8,59	κ	κ	8,76	8,52	9,24	8,27
250 and more, %	4,07	κ	κ	3,34	3,36	3,07	3,85

*Symbol (κ) – the data are not made public for the purpose of fulfilling the requirements of the Law of Ukraine "On Official Statistics" to ensure the guarantees of the state statistics bodies regarding statistical confidentiality.

Source: compiled by the authors based on the materials of the State Statistics Service of Ukraine. URL : <https://ukrstat.gov.ua>

The table 14 shows that the share of each type of enterprise in the total volume of sales varies depending on the size of enterprise and year. So, for example, the share of micro-enterprises (employing up to 9 people) in agricultural production in 2016 reached 5.11% of all products sold in Ukraine. Later, the share decreased and was in the range of 4.22-4.68%, but in 2021 the share of enterprises of this size increased to 8.04%.

The share of enterprises with a size of 10 to 49 employees did not change as much as the previous ones and in 2022 showed growth until 2021.

The share of enterprises with 50-249 employees was slightly more than 8.5 in 2016, 2019 and 2020, but in 2021, enterprises of this size significantly increased their share in the total volume of

sales in Ukraine (up to 9.24%). However, in 2022, their part decreased to 8.27%.

The share of the largest enterprises (from 250 employees and more) is the smallest during the analyzed period, but increased in 2022.

The study of the share of the volume of agricultural production sold in the total volume of production in Ukraine is important for determining the contribution of agriculture. As you can see, different sizes of enterprises play an important role and reach the level of 9% and higher in different years, which is significant in the characteristics of the country's economy.

As the next step, we will analyze the dynamics of average prices for agricultural products for various crops during 1996-2022.

The fig. 53 provides data on cereals and legumes, potatoes, eggs, sugar beets, and milk. The fig. 54 we will present data by crops: oilseeds, fruit and berry crops, vegetable crops and farm animals in live weight.

The given data are from 1996, when the national currency of Ukraine was introduced. Figure 54 makes it possible to see that a fairly significant increase in average product prices began in 2008 (there are certain exceptions by category, but they do not contradict further conclusions of the analysis).

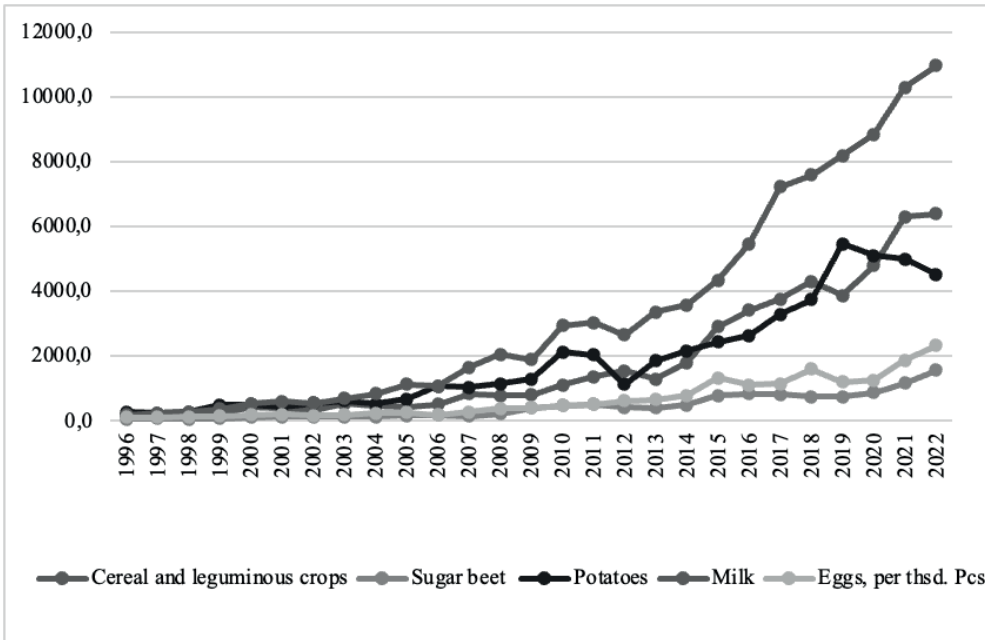


Figure 53. Average prices of agricultural production sold by enterprises by different crop categories (1996-2022)

Source: compiled by the authors based on the materials of the State Statistics Service of Ukraine. URL : <https://ukrstat.gov.ua>

The increase in prices after 2008 is explained by the global economic crisis. Subsequently, a decrease in average prices was noted, which was then replaced by a noticeable increase. The average price for milk increased the most. The prices of potatoes and cereals and pulses are at about the same level. As well as the prices of eggs and sugar beets.

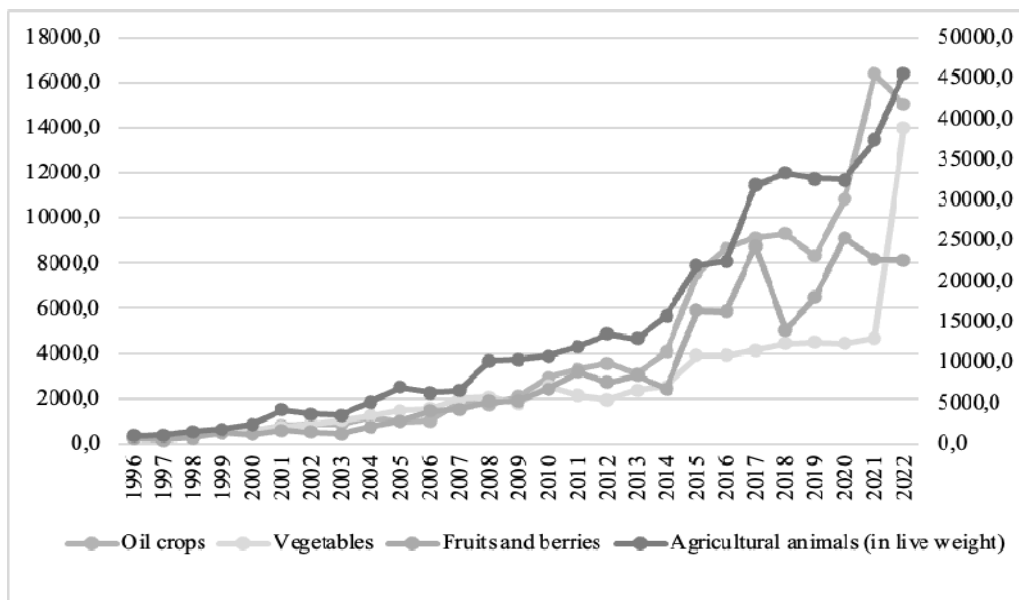


Figure 54. Average prices of agricultural production sold by enterprises by different crop categories (1996-2022)

Source: compiled by the authors based on the materials of the State Statistics Service of Ukraine. URL : <https://ukrstat.gov.ua>

The figure shows two measurement scales, the second (on the right) reflects the increase in the price of farm animals. The price trends are identical to the previous figure. The average price of farm animals was higher than all other crops, but the trend is still different in that in 2022 the growth was very high, in contrast to other crops that did not grow as much in size or even decreased in price.

Next, we will analyze the number of employees of agricultural enterprises (Table 15). This indicator is important from the point of view of determining the inclusiveness of agriculture.

Table 15. The number of employees at business entities by type of economic activity with distribution by the number of employees in 2016-2022

Business entities with the number of employees	Years						
	2016	2017	2018	2019	2020	2021	2022
Agriculture, forestry and fishing							
up to 9 persons, persons	73412	77648	77928	76206	78976	81332	64629
in % of the total agricultural indicator	12,3	13,5	13,8	13,8	15,1	15,6	14,4
from 10 to 49 persons, persons	125865	129880	127258	129897	126463	131324	115693
in % of the total agricultural indicator	21	22,6	22,5	23,5	24,1	25,2	25,8
from 50 to 249 persons, persons	228581	к	к	210428	198590	195375	154495
in % of the total agricultural indicator	38,2	к	к	38	37,9	37,6	34,5
250 persons and more, осіб	170405	к	к	136714	119753	112231	113576
in % of the total agricultural indicator	28,5	к	к	24,7	22,9	21,6	25,3

*Symbol (к) – the data are not made public for the purpose of fulfilling the requirements of the Law of Ukraine "On Official Statistics" to ensure the guarantees of the state statistics bodies regarding statistical confidentiality.

Source: compiled by the authors based on the materials of the State Statistics Service of Ukraine. URL : <https://ukrstat.gov.ua>

According to the data in the table 15 we can see how the share of each type of enterprise changes in providing people with jobs. Thus, the largest share in terms of the number of employees in 2022 was made by enterprises with a size of 50 to 249 employees (34.5%). Their share at the beginning of the analyzed period (2016)

was also the largest (38.2%) and remained so during the given period. Enterprises with the number of employees from 10 to 49 in 2022 occupy $\frac{1}{4}$ and almost 26%, which is higher than in 2016 by almost 4%. Moreover, their share increased in 2022 compared to 2021, although the number of people decreased numerically.

The indicator of enterprises with a size of 250 employees or more has the third result in terms of the share of those that provide people with jobs (a little more than 25.3%). This result is significantly higher than the result of 2021 - by almost 4%, but lower than the result of 2016 (28.5%). Based on the number of employees, we can see that the enterprises of this group increased their number in 2022 in contrast to other enterprises. Although all groups of enterprises decreased the number of employees in 2022 compared to 2016.

The smallest enterprises (up to 9 persons) provided 14.4% of people with jobs from all those employed in agriculture. This number is lower than in 2021 and higher than in 2016. The number of employees at businesses of this size has changed each year, with gradual increases in 2020 and 2021 and a further decline in 2022. Figures 55-56 visualize the results for 2021-2022.

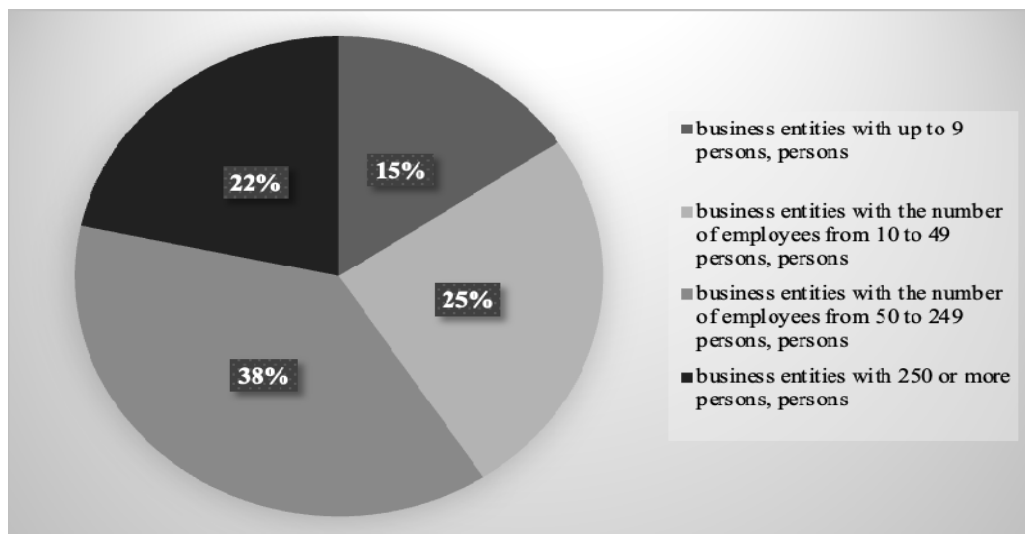


Figure 55. The share of employees at agricultural enterprises in 2021 (% of the total indicator)

Source: compiled by the authors based on the materials of the State Statistics Service of Ukraine. URL : <https://ukrstat.gov.ua>

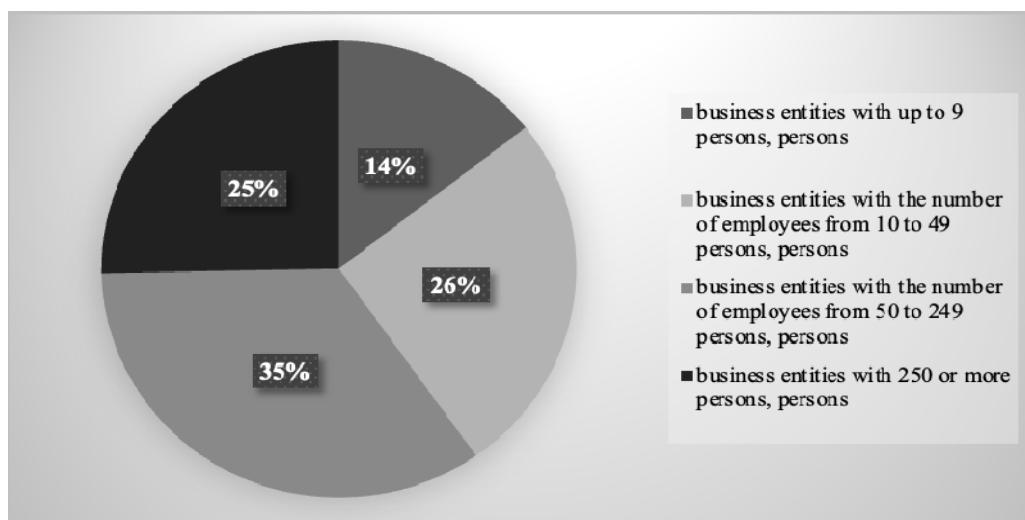


Figure 56. The share of employees at agricultural enterprises in 2022 (% of the total indicator)

Source: compiled by the authors based on the materials of the State Statistics Service of Ukraine. URL : <https://ukrstat.gov.ua>

Next, we will analyze the indicator of the employed population by professional groups and gender during 2010-2021.

We can visualize it in the fig. 57, which lists the employed population by professional group, skilled workers in agriculture, forestry, fishery and fish farming.

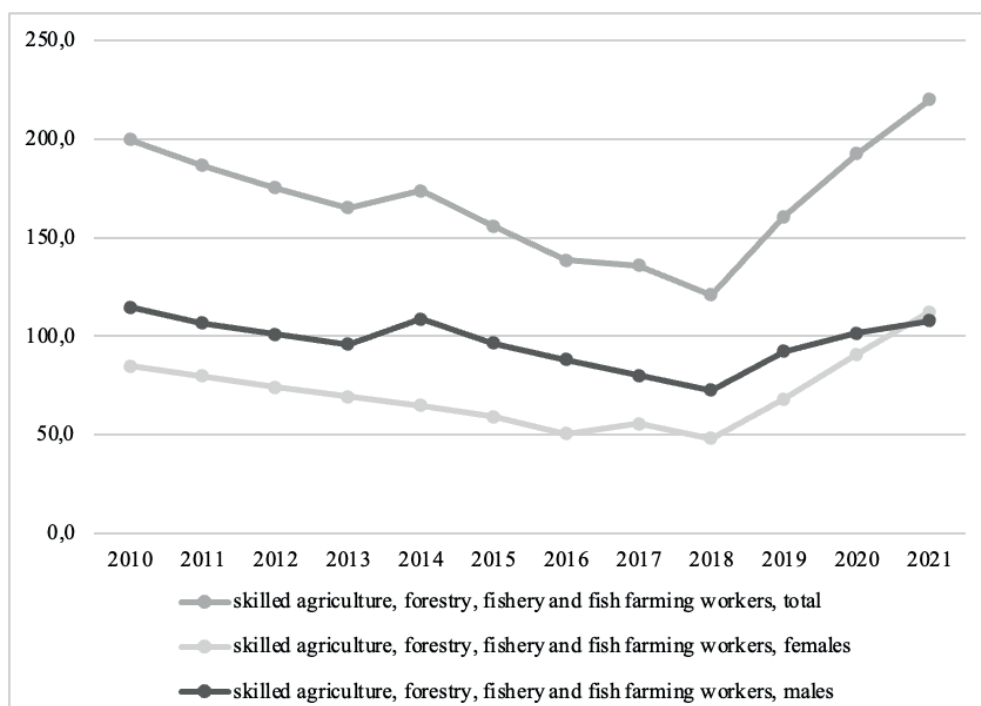


Figure 57. Employed population by professional group and sex in 2010-2021, thousands of persons

Source: compiled by the authors based on the materials of the State Statistics Service of Ukraine. URL : <https://ukrstat.gov.ua>

Figure 57 shows the change in the employed population by occupational group, which refers to agriculture. A comparison over 12 years allows us to see the change of this indicator. During 2010-2018 the total number of hired skilled farm workers decreased (with

the exception of 2014). The lowest indicator of the employed population was in 2018, which was then replaced by gradual growth up to and including 2021.

Among the employed population, more qualified workers are men than women. Only in 2021 their indicators changed the general trend and the number of women exceeded men.

The fig. 58 shows the share of qualified agricultural workers in the total number of employed population.

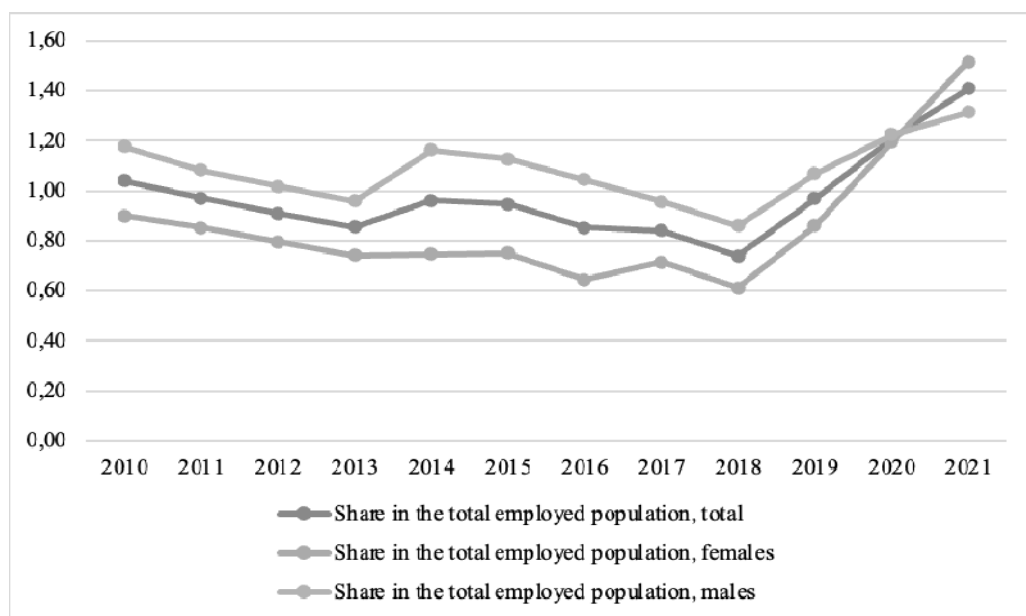


Figure 58. The share of skilled agricultural workers in the total number of employed population, %

Source: compiled by the authors based on the materials of the State Statistics Service of Ukraine. URL : <https://ukrstat.gov.ua>

The share of agricultural workers in the total number of employed population has uneven dynamics: from a number of slightly more than 1% in 2010 to the highest 1.4% in 2021.

It is worth mentioning that the share of men is higher than women and exceeds the indicator for both articles, except for the indicator of 2021. In 2021, the share of women exceeded men and reached 1.5%. The share of women in the employed population was the lowest in 2018 and equaled 0.6%. Thus, we can see that agriculture creates jobs for both sexes, mostly it employed more skilled male workers, a dramatic change occurred in 2021, when the number of women employed exceeded the number of men.

In general, the conducted analysis allows to see the development of agriculture in Ukraine during a certain period, including 2022. We found out that Ukrainian agriculture has not stable dynamics in its development. There is both growth and decline across cultures. It is also worth noting the regional stratification of Ukraine in the production of agriculture as a whole, as well as crop and livestock production. The analysis of the dynamics of the production of agricultural crops showed that, mainly, crop production experienced a decrease in its volume in 2022, which is connected with full-scale war on the territory of our state. Livestock production trends also have similar dynamics (with some exceptions). Although there are regions that in 2022 showed a positive result in the growth of the natural volume of production.

The analysis of crop production by groups of enterprises according to their scale showed that, although the largest share of enterprises with the smallest area, this does not correlate with their contribution to the total sum of the gross collection. The number of

companies producing crops mostly decreased in 2022, as did the overall harvest (except soya and canola).

Annex B shows the main indicators for certain agricultural crops in the world and the place of Ukraine among other countries.

The importance of agriculture for the economy of Ukraine is unquestionable because it ensures the production of food products, which is a prevention of food insecurity in our society. In addition, it ensures the sale of goods on the market, and, accordingly, the receipt of income by entrepreneurs and households. Agriculture also creates jobs and helps improve the population's well-being and quality of life. It is the development of agriculture in the conditions of war that is important for maintaining socio-economic processes at a level sufficient to ensure a normal standard of living for the population of Ukraine. This should be given the attention of scientists, civil servants, international governmental organizations that can develop mechanisms for stimulating the development of agriculture in Ukraine.

2.4. Impact on the inclusive development of small and medium-sized agricultural enterprises of world modern tendencies and crisis issues

For deeper investigation of the topic of the monograph there were conducted during 2022-2024 3 studies, the purpose of which was to assess the impact of global world trends on the agri-food

sector (December 2022), state policy on the agri-food sector (June 2023), and crisis situations and war on the industry and agrarian sector of Ukraine (November 2024). 60 respondents participated in the study.

For the classification of enterprises, the classification of the Economic Code of Ukraine (the Commercial Code of Ukraine) was used, according to which enterprises are defined as:

microenterprise, if the average number of employees per calendar year does not exceed 10 people and the annual income does not exceed the amount equivalent to 2 million euros);

small enterprise, if the average number of employees per calendar year does not exceed 50 people and the annual income does not exceed the amount equivalent to 10 million euros);

a medium-sized enterprise, if the average number of employees per calendar year does not exceed 250 people and the annual income does not exceed an amount equivalent to 50 million euros);

a large enterprise, if the average number of employees per calendar year is more than 250 people and the annual income is more than 50 million euros)⁶².

Questionnaires were compiled according to the task of the research. The following methods were used to process the results: survey, analysis, synthesis, generalization, statistical, grouping, tabular, graphic methods.

⁶² Economic Code of Ukraine. The official Bulletin of the Verkhovna Rada of Ukraine, 2003, No.18. URL : <https://zakon.rada.gov.ua/laws/show/en/436-15#Text>

In fig. 59 shows the number of enterprises by size that participated in the survey during 2022-2024.

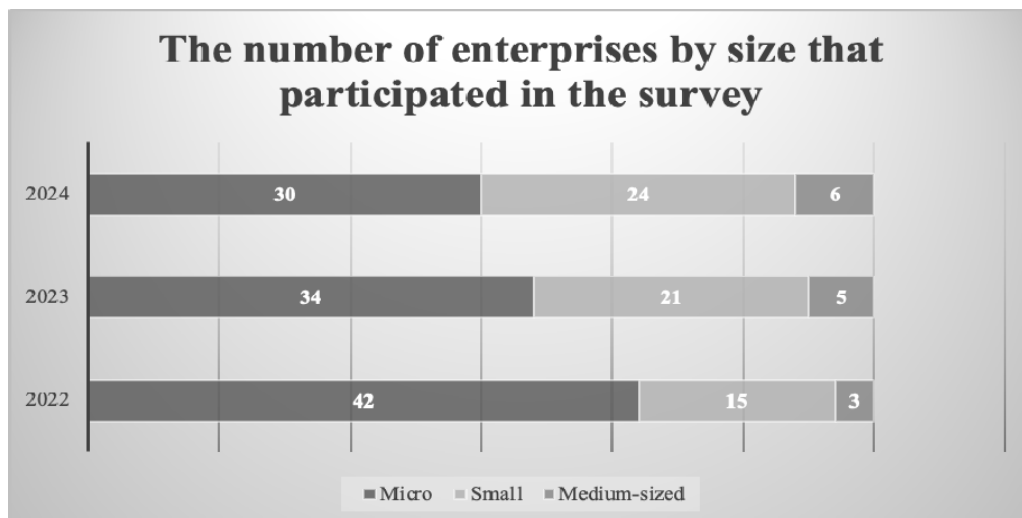


Figure 59. Number of enterprises by size that participated in the survey

Source: compiled by the authors based on respondents' answers

As you can see, every year the number of enterprises changed depending on their size. Large enterprises did not participate in the survey. It is worth noting that the number of medium-sized enterprises and small ones increased every year among the respondents, which gives a more reasonable opportunity to draw conclusions about the impact of various phenomena on small and medium-sized enterprises. Although, the vast majority of respondents who took part in the investigations are micro-enterprises.

Analyzing the field of activity of the respondents, we note that among them there are representatives of various fields, namely: plant growing, horticulture, vegetable growing, poultry farming,

livestock husbandry, cultivation of industrial crops, berry growing, potato growing. These areas were represented in all years of the study, in 2024 enterprises of other industries were added, but they were not numerous.

To determine the impact of crisis phenomena and global trends, as well as the inclusive development of agricultural enterprises, we analyzed the change in the average number of employees over the last year. The results presented on the fig. 60 show that in 2022 and 2023, changes took place in 19 and 18 enterprises, respectively, and in 2024, the number of enterprises in which the number of employees changed increased to 23 (38%).

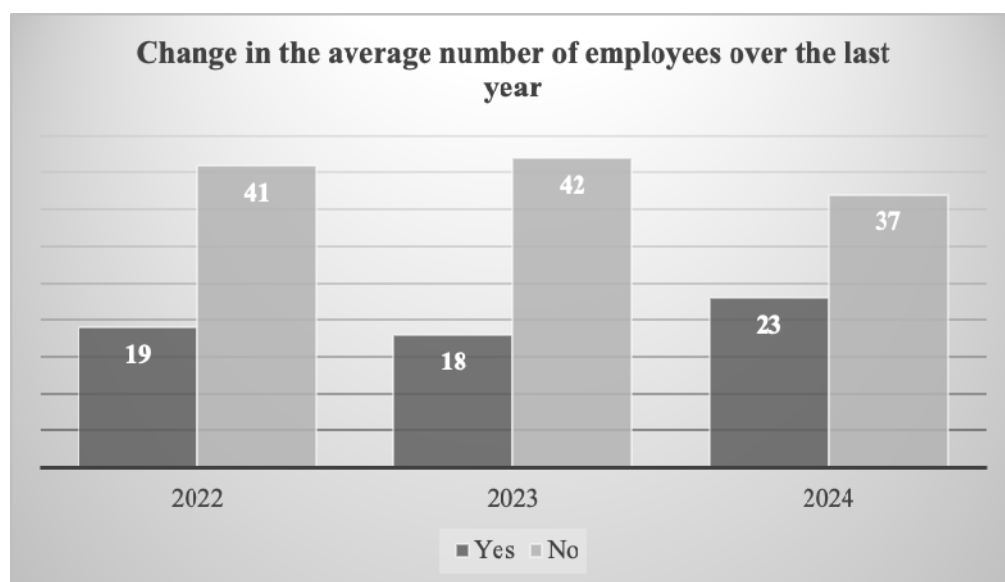


Figure 60. Change in the average number of employees of enterprises, 2022-2024

Source: compiled by the authors based on respondents' answers

In fig. 61, we will present the enterprises by size, at which there were changes in the number of employees.

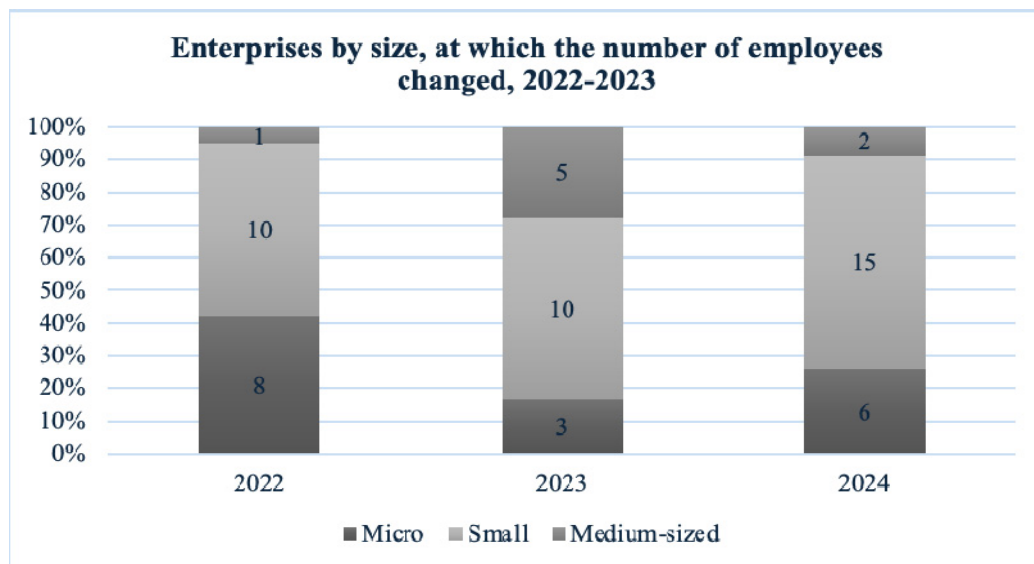


Figure 61. Enterprises by size, at which the number of employees changed, 2022-2024

Source: compiled by the authors based on respondents' answers

As we can see, the biggest changes in the number of employees over the past 3 years occurred at small enterprises. Although even in 2023, changes were noted by all medium-sized enterprises that took part in the survey. The nature of changes (in a positive or negative direction) for all 3 years of research is illustrated in fig. 62.

Figure 62 shows that the largest decrease in employees occurred in 2023, and in 2022 and 2024, the share of increase was higher than in 2023. Although, during the analyzed years, there were more decreases in employees.

In 2022 medium-sized enterprises (35 people) and small ones (20 people) lost the most employees. The largest increase occurred

in a small enterprise (+ 12 people). A decrease of 10 people was also observed at 2 small enterprises. Changes in micro-enterprises were not significant both in the direction of decrease and increase.

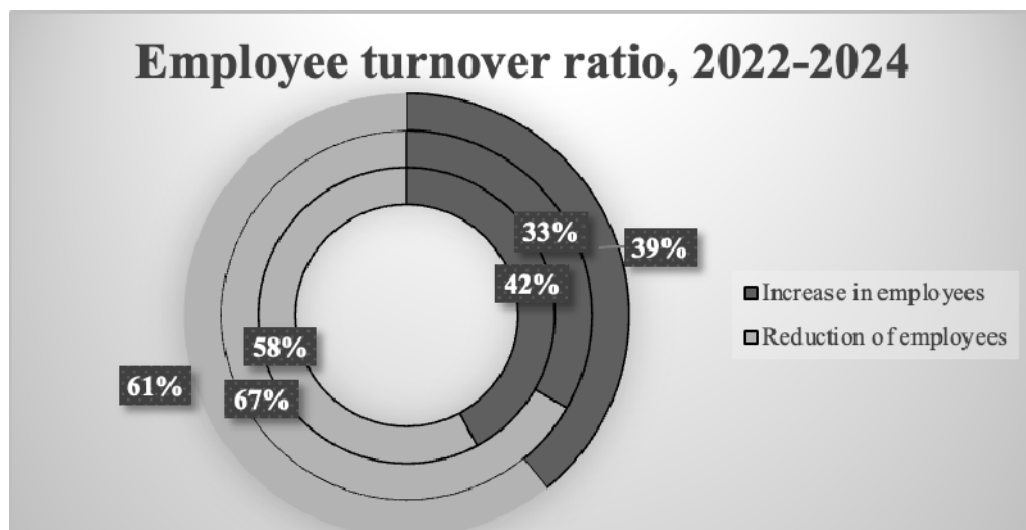


Figure 62. Ratio of increase or decrease of employees, 2022-2024.

Source: compiled by the authors based on respondents' answers

In 2023, enterprises note not only a decrease in employees (from 1 employee to 50 maximum), but also an increase (from 1 employee to 50 as well). The largest decrease occurred in small enterprises (73%). Medium-sized enterprises have a slightly better result in terms of the number of enterprises that have experienced a decrease in the number of people (18% of all companies with a decrease), but quantitatively in terms of people, the result is still great – there was a total reduction of employees by 80 people. The increase in the number of employees is observed most in medium-

sized enterprises (in total, it is equal to approximately 77 persons), and it is also noted in small and micro enterprises.

The decrease in 2024 took place mostly in small enterprises (71% of all those that experienced a decrease), and the decrease was also noted by micro enterprises (29%). The number of employees decreased from 2 to 8 people at enterprises. The increase took place at enterprises of all sizes, and the number of employees increased by 1-2 people or by 25 people. 2 medium-sized enterprises noted an increase of 25 employees, which is a fairly positive result, considering the general trends in business development.

Analysis of changes in income for the period 2022-2024 allowed to build the fig. 63.

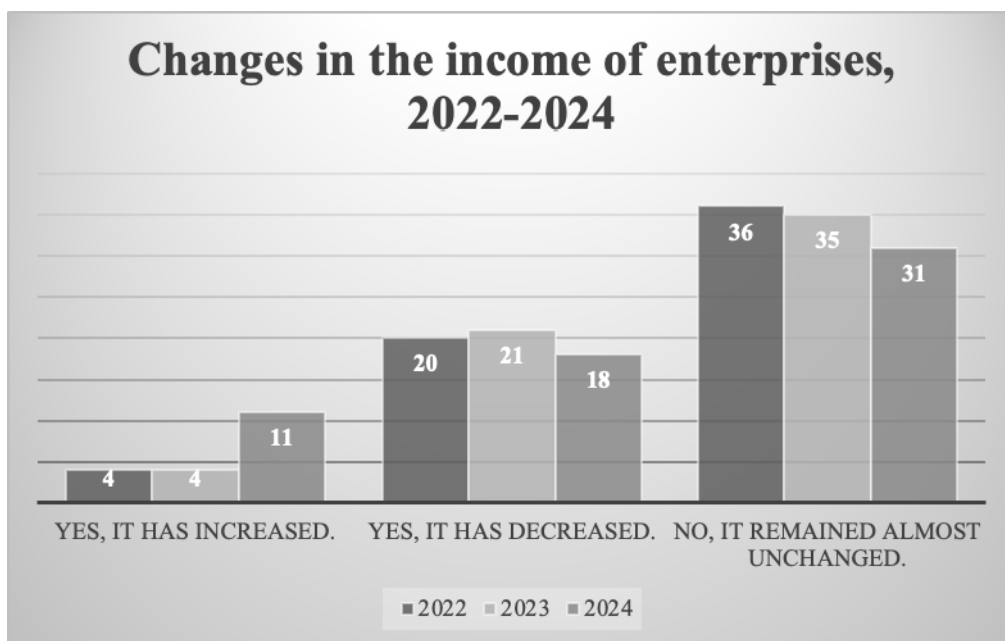


Figure 63. Changes in the company's income over the last year, 2022-2024.

Source: compiled by the authors based on respondents' answers

As we can see, during the analyzed period, the majority of enterprises did not experience changes in income, but their number declined (from 36 in 2022 to 31 in 2024), but the number of enterprises that noted an increase or decrease in income is different during 3 years and does not have the same trend. It should be noted that in 2024 the increase in income marked more than two and a half times of companies compared to the previous two years. The decrease in income was the largest in 2023, and the smallest in 2024.

Of the 4 enterprises that noted an increase in income in 2022, 3 are micro-enterprises and 1 is small. Income growth in the range between UAH 50,000-150,000.

Of the enterprises that noted a decrease in income for 2022, there were micro enterprises (10), small enterprises (8) and medium enterprises (2). The amount of the reduction varies quite a lot: from UAH 10,000 to UAH 1,000,000.

In 2024 of those who noted a decrease in income, the largest number of small enterprises - 12. Enterprises note a different decrease in income: from UAH 50,000 to UAH 3,500,000. Among the enterprises that noted an increase in income in 2024, there are the most micro enterprises. Respondents noted an income increase over the past year from UAH 150,000 to UAH 2,500,000.

In order to assess the impact of state policy, enterprises were surveyed to see if they feel the impact of state policy of Ukraine in

relation to the agri-food sector at their enterprise. The results of the study are shown in fig. 64.

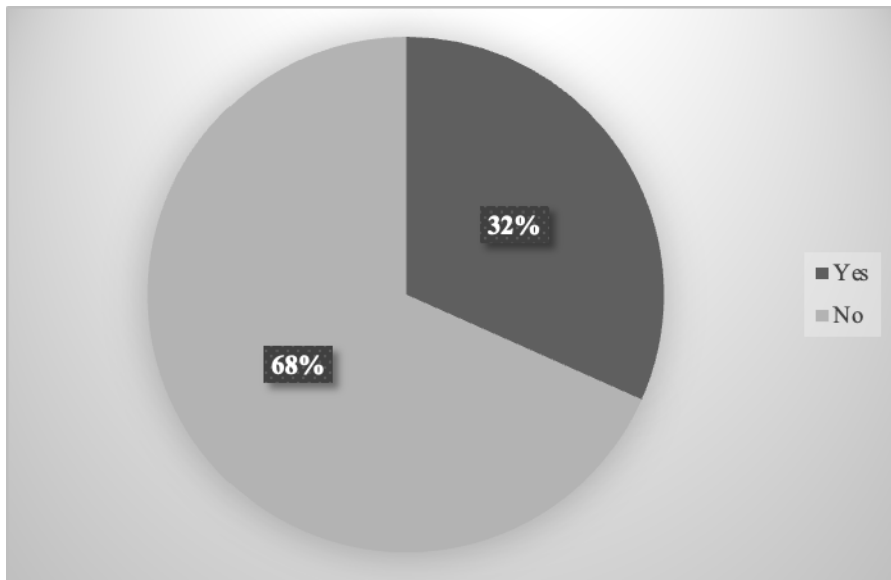


Figure 64. Answers of respondents regarding whether they feel the influence of the state policy of Ukraine in relation to the agri-food sector at their enterprise

Source: compiled by the authors based on respondents' answers

As you can see, the majority - 68% (41 enterprises) do not feel the influence of the state agro-food policy. One third of the respondents note that they see the influence of the state policy of Ukraine in relation to the agro-food sector. Among those who see an impact, the main part are micro-enterprises, 63% of all those who gave a positive answer. Support is seen in agribusiness assistance programs, lending, subsidies and grants, etc. Also, not only a positive impact is noted, but also a negative one in relation to small businesses in comparison to large ones.

A study of information possession by enterprises regarding state support programs for agricultural producers (Fig. 65) revealed following:

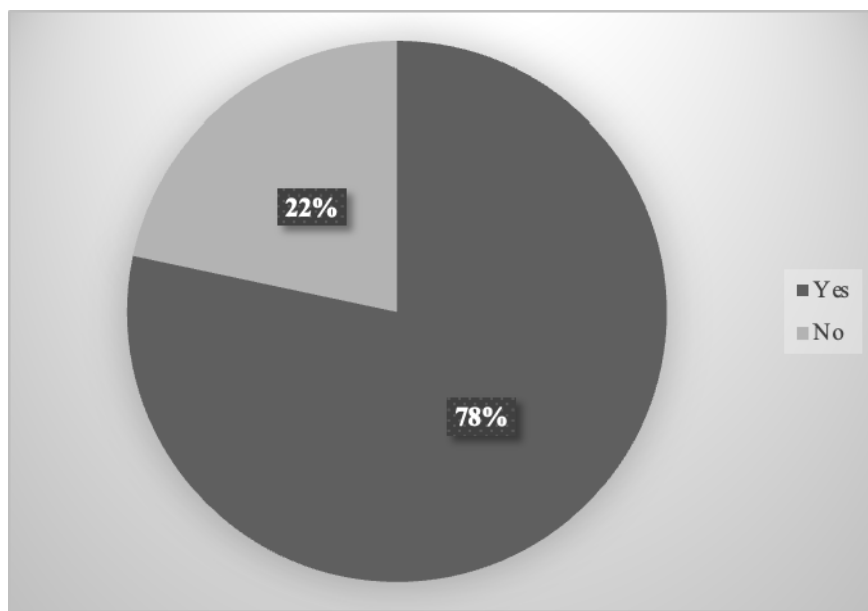


Figure 65. The results of the respondents' answers regarding the possession of information concerning the state support programs for agricultural producers currently operating in Ukraine

Source: compiled by the authors based on respondents' answers

As we can see, the vast majority of respondents (78%) know about state programs to support agricultural producers, which is a fairly high indicator and positively characterizes the state's information policy in the direction of informing the target audience. Entrepreneurs are most aware of the loan program “Affordable loans 5-7-9”, which provides loans at appropriate rates depending on the terms of lending. Also, a large part of the answers related to support programs for horticulture, berry growing and viticulture; support

programs for greenhouses, as well as livestock farmers, etc. 82% of respondents positively assessed the actions of the state in terms of supporting agricultural producers with similar tools. And there were no negative evaluations. 18% noted that they were either neutral towards such initiatives or were not interested in this topic at all.

In the following research, we will analyze the main factors influencing the activity of agricultural enterprises during the analyzed period.

In the 2022 study to the question of what were the main factors affecting the company's activity over the past year, almost all (except for two) respondents' answers included such a factor as a war or a full-scale invasion. In addition, the departure of people abroad, the lack of electricity at the end of the year, as well as the consequences of the COVID-19 pandemic were also noted.

The question about the main factors affecting the company's activity over the past 3 years allowed us to get the following answers: pandemic, lockdown, problems with logistics, insufficient state support in the development of exports, high taxes and fees, etc.

When determining what had a more negative impact on the company's work in the last 3 years: the war or the COVID-19 pandemic, responses were received, which are expressed as a percentage on the figure 66.

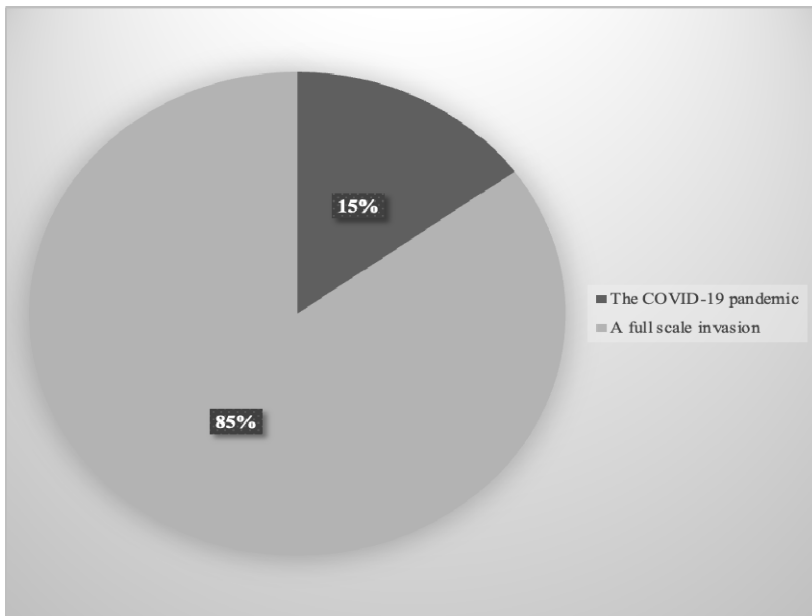


Figure 66. Respondents' identification of a more negative factor affecting the enterprise

Source: compiled by the authors based on respondents' answers

As you can see, 85% believe that a full-scale war has more of a negative impact on their activities. Among the factors that still affected the activities of enterprises as of 2022, the enterprises additionally highlighted: integration with the EU, inflation, fluctuations in currency rates, logistical problems, the trend of healthy eating, vegetarianism, etc. Moreover, companies noted not only negative changes, but also positive ones and those that see new opportunities for themselves. Since the beginning of the pandemic, there have been positive changes in two main areas:

1. The growth of online sales, the opening of opportunities to expand the client base and partnership using the Internet.

2. The trend of healthy food among consumers, orientation towards taking care of their health.

Also during the 2022 study the awareness of enterprises regarding the Sustainable Development Goals and their impact on their activities was analyzed, but we will consider the results later, when presenting them with the results of 2024.

Research of 2023 assessed the influence of state policy on the activities of enterprises, as well as other factors. The results of the survey are shown in Fig. 67.

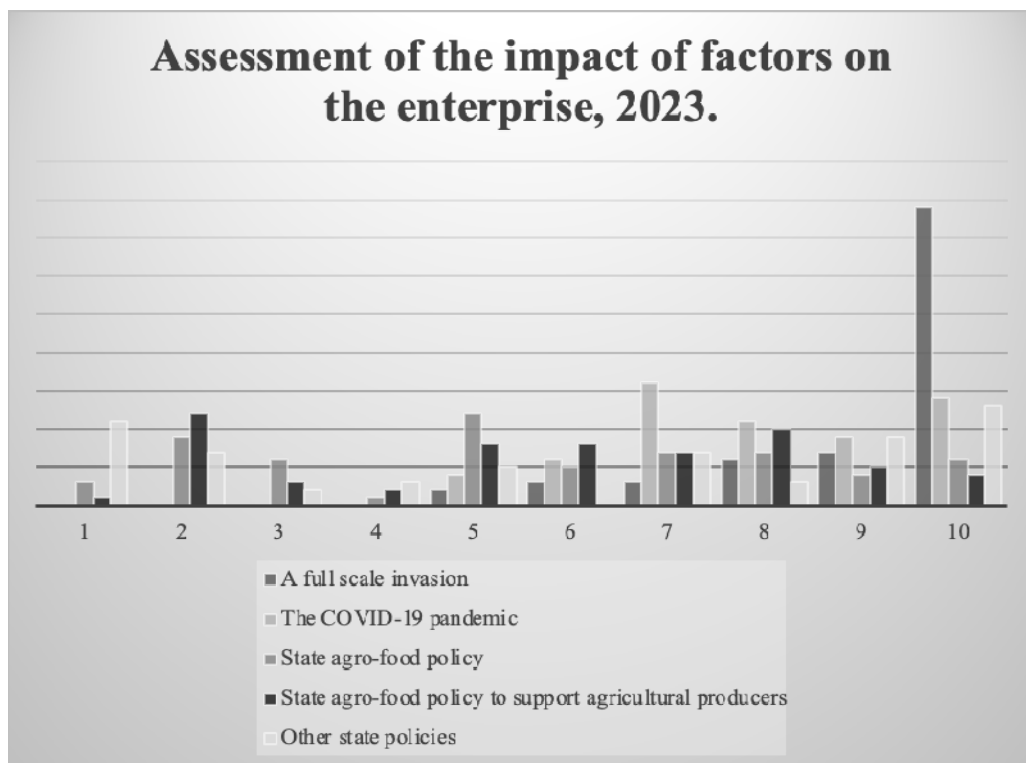


Figure 67. Assessment of the impact of various factors on enterprise activity in 2023 on a 10-point scale

Source: compiled by the authors based on respondents' answers

The vast majority of companies estimated the impact of a full-scale invasion on their activities for maximum points – 65% of all surveyed companies. In general, there are no enterprises that assessed the impact of this factor at 1-4 points. Figure 67 also shows the results of the assessment of the impact of the COVID-19 pandemic on the activities of enterprises. As we can see, the respondents assessed the impact of this factor in different ways. Most believe that the impact reaches 7 points (27% of all enterprises), that is, the pandemic has had a sufficient impact, but not a very strong impact. A little less enterprises indicated a very high level of influence - 10 points (23%). For this factor, the number of maximum ratings is less than for the previous one, but there is also a higher impact rating at level 7-9. Enterprises assessed the impact on the activity of their enterprise in different ways. There are results where it is indicated that the state agro-food policy has the lowest level of influence (3 enterprises, 5% of the total number of respondents), and there are those who noted the highest level of influence on their activities, that is, they estimated this influence at 10 points (6 enterprises, 10 %). The largest number of enterprises assessed the level of influence as average - 5 points (12 enterprises, 20% of the surveyed companies). 9 enterprises (15%) noted that they assess the impact at a low level - 2 points.

We also have the opportunity to see how the impact of state policy support (loans on preferential terms, grants, subsidies, etc) of agricultural producers of enterprises that participated in the survey is

evaluated on their activities. The result we obtained differs from the previous two, as a larger number of respondents assessed the level of influence as sufficiently low - 2 points (20%), 8 enterprises indicated average positions of influence - 5 and 6 points, but 10 enterprises (16%) noted that they assess the impact as significant - at 8 points.

The analysis of the results of the evaluation of the factor “Other state policies” yielded the following results: As we can see, the discrepancy in the answers is quite high, since 18% of the surveyed enterprises noted a very low impact on their activities of other state policies, but, at the same time, 21% noted a very high level of influence. Under other politicians, the respondents themselves see tax policy, through which influence is felt, establishment of new laws, mobilization, etc. Moreover, it is noted that there can be both tax pressure and fiscal incentives.

On the basis of the conducted research, we identified more factors, which we continued to investigate in the following research of 2024.

The results of the assessment of the impact of factors on the activity of enterprises of crisis phenomena, war and other factors are presented in fig. 68.

According to the results, we see that almost all of them have a sufficiently high level of influence, but the factor of full-scale invasion turned out to be the most influential. Respondents rated the impact of this factor on their activities quite high: thus, 53 enter-

prises answered that a full-scale invasion had the highest level of impact. The least power of influence of the factor was estimated at 7 points - 1 enterprise, 2 was estimated at 8 points, and 4 - at 9 points. The vast majority also noted a sufficiently high level of influence of the pandemic: 8 points – 11 enterprises (18%), 9 points – 18 enterprises (30%) and 10 points – 25 enterprises (42%). The influence of this factor is also quite high, but the number of enterprises that evaluated it as the maximum is more than 2 times smaller.

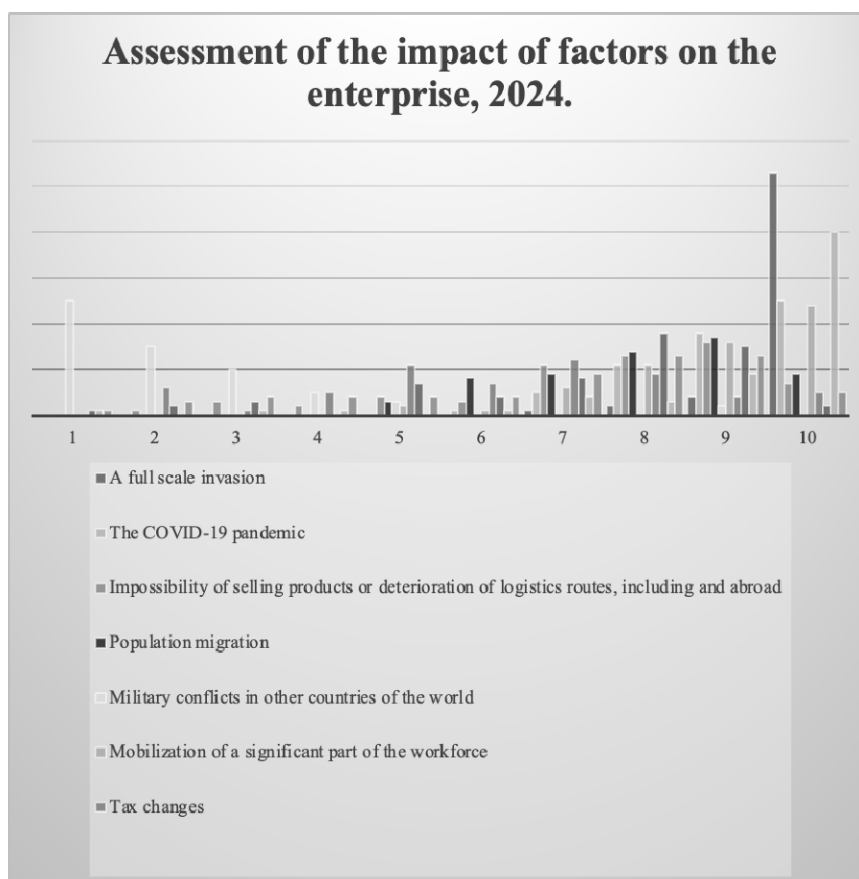


Figure 68. Assessment of the impact of various factors on enterprise activity in 2024. on a 10-point scale

Source: compiled by the authors based on respondents' answers

According to the factor of the impossibility of selling products or the deterioration of logistic routes, the distribution of points differs slightly from the previous two. There is an enterprise (1), which noted that this factor had a low impact on its activity - 2 points, slightly more enterprises (3) rated it at 3 points. 11 enterprises believe that the impact on their activities can be estimated at 7 points, 13 enterprises - estimated at 8 points, 16 enterprises - at 9 points, and 7 enterprises noted the highest level of impact. Such a distribution can be explained by the fact that not all enterprises are focused on sales abroad, or even on sales in other regions, for example. The main target audience of their business can be consumers of their community and nearby settlements.

Enterprise relocation was assessed in different ways, but mostly, the answers tend towards the sufficient importance of this factor. 14 respondents noted the impact of the factor at 8 points, 17 respondents rated it at 9 points, and 9 rated the impact of migration at the maximum - 10 points. That is, 67% noted a sufficiently high influence of this factor. It should be noted that the discrepancy in the answers is not large and the lowest assessment of the impact is equal to 5 points (3 enterprises), 6 points (8 enterprises) and 7 points (9 enterprises).

The lowest level of influence had such a factor as military conflicts in other countries of the world, which is quite logical. The result of the evaluation of the respondents' answers showed that the majority of them assessed the impact of this factor as not very

influential - 25 enterprises (42%) assessed the impact of this factor at 1 point, 15 enterprises (25%) - at 2 points, 10 enterprises (17%) - in 3 points. A sufficiently large influence of this factor was noted by only 2 enterprises at 9 points.

On the basis of previously received responses to the factors of influence, we also proposed the factor of labor force mobilization. The majority of enterprises noted the sufficiently high influence of this factor: 11 enterprises rated it at 8 points, 16 enterprises at 9 points, and 24 enterprises at 10 points. These answers reflect that this factor has a high impact on the results of the enterprises. There are no results below 5 points, which gives reason to conclude the valueness of this factor.

An important factor in the activity of any enterprise is the taxation system. With the beginning of the full-scale invasion for individual entrepreneurs, some changes in taxation were introduced, which brought positive changes. But in 2023, taxation for the 3rd group of individual entrepreneurs returned to the pre-war rate. Also, the latest proposed changes provide for the return of the mandatory payment by the individual entrepreneurs of the social payment “for themselves” and the introduction of a military fee for all simplified applicants and an increase in the rate of this fee for those in the general group. Respondents' answers regarding the influence of this factor are uneven and do not have any general trend. It is worth noting that no one answered that this factor had a very low level of influence. 6 enterprises (10%) indicated a low level of influence - 2

points and 1 enterprise - 3 points. The largest number of enterprises assessed the level of influence at 5 points (11 enterprises), 7 points (12 points) and 8 points (9 enterprises). The maximum level of influence of 10 points was noted by 5 enterprises. That is, we cannot talk about the great influence of this factor. Rather, the responses indicate an average level of impact on their business from the tax changes.

The factor “state support of enterprises in terms of providing grant opportunities, subsidies” can also have several directions of influence on the activities of enterprises: on the one hand, enterprises can participate in these programs and improve the results of their activities, on the other hand, competitors can participate in these programs and increase its competitive advantages, which may negatively affect the company's operations. The respondents' answers make it possible to see that, for the most part, this factor has a high impact (18 enterprises rated it at 8 points and 15 enterprises - 9 points). Only two enterprises answered that they rate it as highly as possible. At the average level, 7 enterprises were rated 5 points, 4 enterprises - 6 points, and 8 enterprises - 7 points. There are enterprises that believe that this factor had a low level of influence on their activities, but their number is not numerous.

An important factor that affects the results of enterprises in the existing conditions is the possibility of business relocation. But we have to take into account that agricultural enterprises are slow moving, sometimes even their relocation is impossible. Fig. 68 gives an opportunity to see that the respondents' answers were divided, but

the vast majority - 40 enterprises (67%) rated this factor at 10 points, another 9 (15%) rated it at 9 points. That is, the importance of this factor is large enough for enterprises.

The next factor that was highlighted was the factor of activation of international donors in terms of providing grants and microcredits to domestic enterprises. This factor has an impact on the results of operations, although a smaller number of enterprises note its importance. Thus, 13 enterprises assessed the level of influence of this factor at 8 and 9 points. The maximum, 10 points, indicated the influence of 5 enterprises. 9 enterprises were rated at 7 points. 4 enterprises were rated 3, 4, 5 and 6 points, respectively.

The respondents were asked to determine which of the factors listed by us had a negative and positive impact on their activities. We obtained the results presented in fig. 69 and 70.

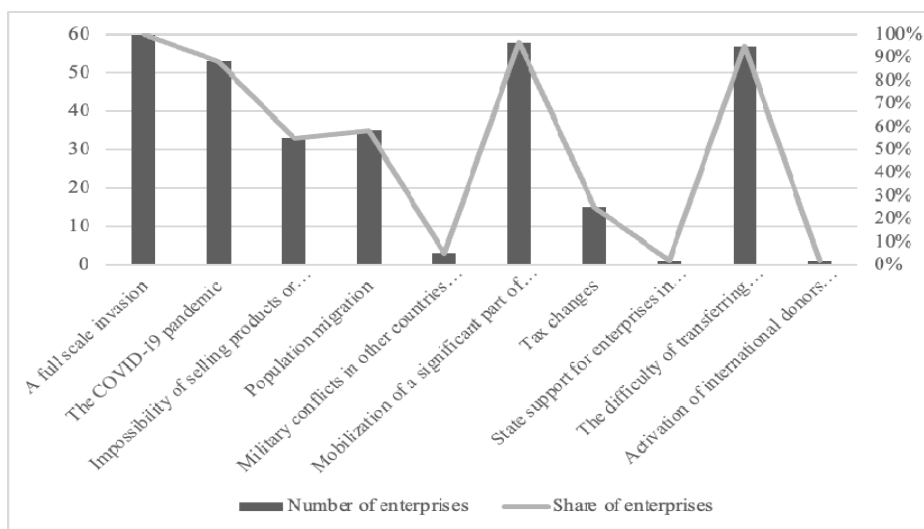


Figure 69. Factors that respondents attributed to those that negatively affect their activities

Source: compiled by the authors based on respondents' answers

A full-scale invasion was classified by all respondents as having a negative impact. Also, 96.7% of respondents noted labor force mobilization as a negative factor. The difficulty of moving business (95%) and the pandemic (88.3%) also have a high negative impact score. It is worth noting that the pandemic has an ambiguous view. Among those factors that received few negative marks are military conflicts in other countries of the world, and state support for enterprises and the activation of international donors in relation to assistance to enterprises.

Among other factors that had a negative impact on activity, the interviewees themselves noted: vegetarianism (for entrepreneurs from the field of livestock). Several indicated that their business was not difficult to relocate, if not impossible. It was also noted that tax changes had both positive and negative consequences.

The analysis of the results of the factors that were classified as positive showed that there are some that did not receive a positive characteristic at all: a full-scale invasion, the impossibility of selling products and the deterioration of logistics routes, the mobilization of a large part of the working population, the difficulty of transferring business. However, it can be noted that the factors of state and international support of enterprises through the provision of grants, microcredits, subsidies, etc. had the most positive significance. Other factors, namely: the pandemic, population migration and military conflicts in other parts of the world also received positive characteristics, but they are few.

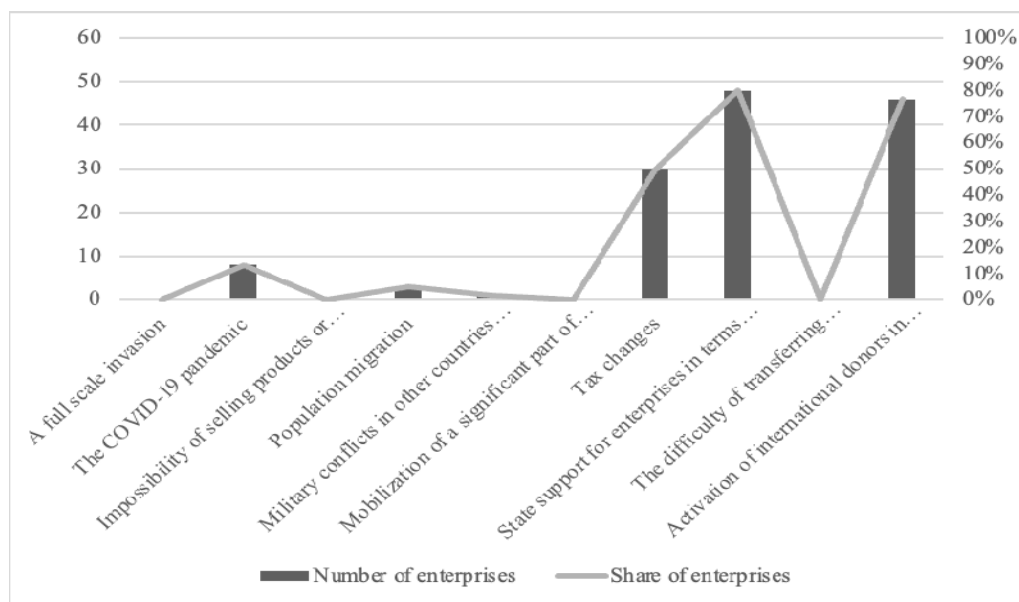


Figure 70. Factors that respondents attributed to those that positively affect their activities

Source: compiled by the authors based on respondents' answers

Among the positive factors singled out by the respondents themselves, they singled out the trend of healthy eating, tax changes, and giving up red meat. Thus, we see that the factors have a pronounced positive or negative character, although there are those that have a double impact on enterprises.

In fig. 71, we will present a comparison of the assessment of the impact of the factors of a full-scale invasion and a pandemic in 2023-2024.

As you can see, the lowest score these two factors had was 5. Moreover, in 2024, both factors did not have these results at all. The strength of the impact of these factors is stronger in 2024. Full-scale

invasion had the largest stronger impact in both years, and in 2024 the maximum estimate increased even more. This completely correlates with the data that was obtained earlier.

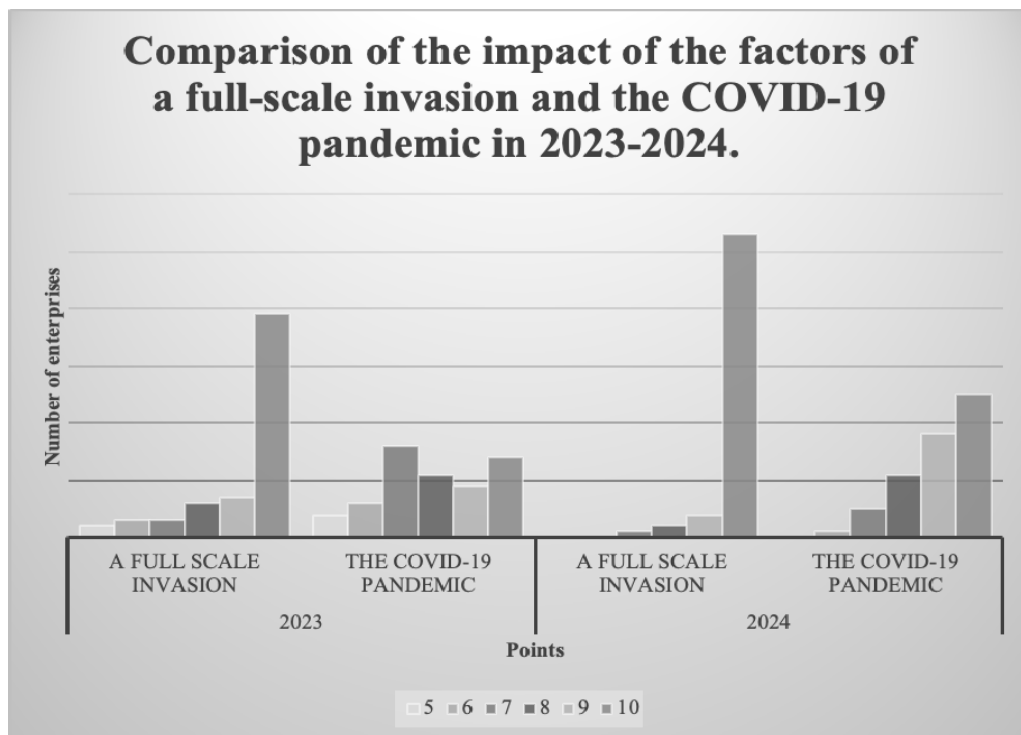


Figure 71. Comparison of the impact of factors of a full-scale invasion and the COVID-19 pandemic in 2023-2024.

Source: compiled by the authors based on respondents' answers

Our study also analyzed the impact of the Sustainable Development Goals on the activities of the companies that participated in the survey. In addition to all of the above, the goals of sustainable development also affect inclusiveness, because they include gender equality, orientation towards society, responsible treatment of personnel, production, etc.

The 2022 study revealed that the majority of entrepreneurs are informed and aware of the paradigm of sustainable development and its goals (Fig. 72).

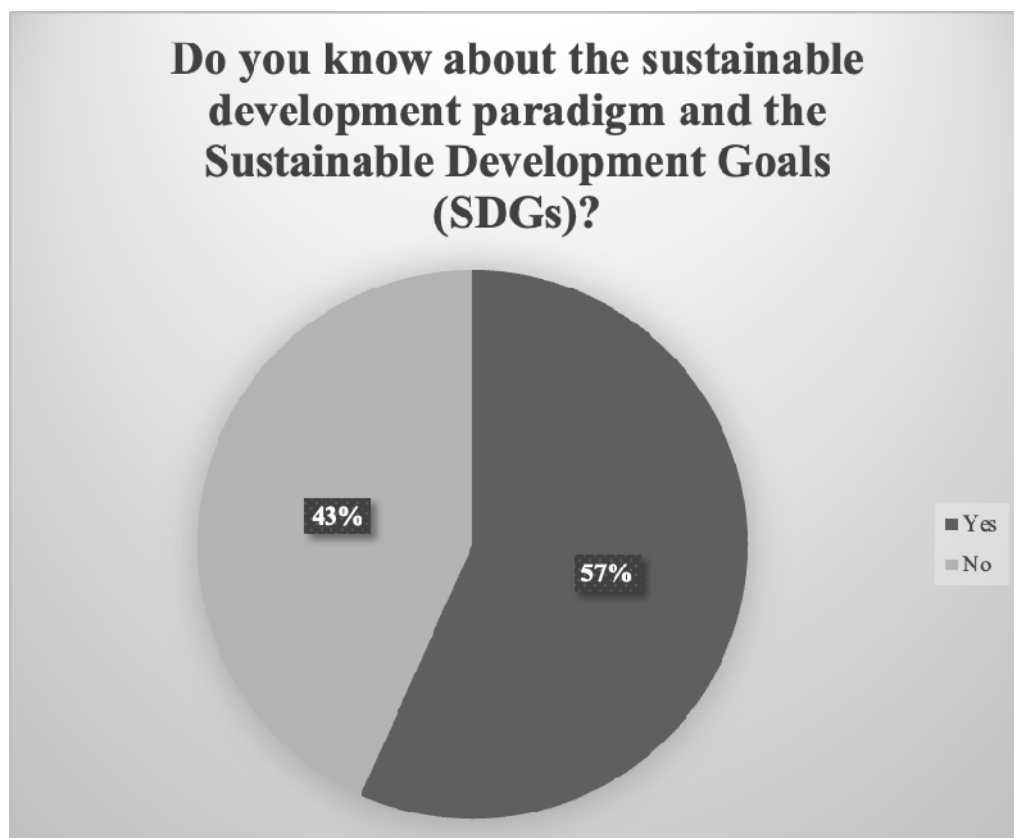


Figure 72. Respondents' awareness of the paradigm of sustainable development and the SDGs

Source: compiled by the authors based on respondents' answers

This is very important for the development of the agro-food sector, responsible, balanced and ecological development. The most numerically represented micro-enterprises that know about the SDGs, in percentage terms, their share is equal to 57%.

Based on the answers, it was found that they see the Sustainable Development Goals as ecological, socio-economic, responsible practices towards population, nature, production and cultivation process. 36 respondents (60%) answered that they were not implemented in 2022. in the activities of their enterprises. Those who noted implementation mentioned the following areas: employee education, favorable working conditions, responsible production, environmentally friendly cultivation, etc.

But as of 2022 the impact of the paradigm of sustainable development on the enterprises of the agro-food sector of Ukraine was small, since less than half of them implemented them, and a large part of those who noted that there are implementation practices see them as cultivation without the addition of harmful substances, as ecologically clean cultivation. The part of enterprises that also implements other Goals (responsible treatment of employees, decent wages, partnership) is much smaller.

In 2024 entrepreneurs have already seen the following opportunities for Ukraine and the enterprises themselves, taking into account the Sustainable Development Goals: if you build the production of goods or services taking into account these Goals, form responsible management, focus on the community and the community, then these enterprises, like the state, will reach a new level, will be able to become more competitive and developed on the world stage, this will speed up the development and overcoming of crisis phenomena.

In general, the summary of the respondents' answers allows us to see that entrepreneurs see new opportunities for themselves in the CSR in that responsible management will be better reflected in the results of activities, the use of new environmentally-oriented technologies will improve the productivity of the enterprise and increase the quality of living in the community and society.

Among modern growing or production technologies, entrepreneurs see such opportunities as growing in closed soil, in grow boxes, in gutters, hanging form, greenhouse production, SmartFarm, hydroponic technology, growing new varieties of vegetables, fruits and berries, production of goods from recycled materials, etc. That is, basically, these technologies relate to growing in a form that allows to increase productivity, easier to transport, etc.

Among the practices of developed EU countries, in addition to the above, were noted responsible personnel management, observance of gender equality, efforts to achieve a work balance in the life of personnel, etc. This positively characterizes the awareness of entrepreneurs and the direction of their business development.

In general, summarizing the research conducted on factors influencing the activities of enterprises in the agricultural sector and industry, we can make the following conclusions:

1. Assessing the level of impact of various factors on the activities of agri-food enterprises allows us to see that the full-scale invasion and pandemic of COVID-19 have and had the greatest impact on the activities of enterprises, and state policies that directly

or indirectly affect the agri-food sector have a lower level of influence, although it is also at the average level, which is also influential on the performance of enterprises.

2. While not all entrepreneurs lost revenue or downsized, it was difficult to achieve.

3. State policy has an influence on the activity of agro-food enterprises, but the degree of its influence is average and lower than other factors.

4. Half of the enterprises have information about various state initiatives to support agricultural producers and participate or plan to participate in them. Basically, these are the “Affordable Loans 5-7-9” programs and receiving non-refundable grants for the development of your business.

5. The respondents themselves note that they have faced various crisis phenomena, but the main ones are a full-scale invasion, the COVID-19 pandemic, the 2014 war, and some mentioned the global economic crisis. They emphasized the negative consequences of these phenomena in the reduction of income, sales, and the need to reduce staff.

6. Among the main factors that have the greatest impact on the results of the enterprises, one can identify a full-scale invasion, a pandemic, the difficulty of transferring business to other regions of Ukraine, labor force mobilization, etc. Military conflicts in other countries have the least impact.

7. Some of these factors have both a negative and a positive impact on the activities of enterprises. For example, the COVID-19 pandemic had a positive result in the greater orientation of the population to their health, the spread of the trend of healthy eating. Tax changes also had positive consequences for enterprises of the 3rd group of individual entrepreneurs at the beginning of the full-scale invasion, when the tax was reduced. Subsequently, this tax has returned to its original level, and it is currently planned to introduce a military levy for those on the simplified taxation system or to increase it for the general taxation system.

***CHAPTER 3. OPPORTUNITIES, PROSPECTS AND
RESOMMENDATIONS FOR INCLUSIVE DEVELOPMENT OF
AGRI-FOOD SECTOR OF UKRAINE IN MODERN
CIRCUMSTANCES***

3.1. State investment support for agricultural enterprises

At the beginning of 2022, Ukraine entered a new, most extensive crisis of a civilizational, social and economic nature, which arose as a result of unprovoked aggression by the Russian Federation. A full-scale war against Ukraine became a challenge for the Ukrainian state, which led to the need to review not only the historical past, political views, economic policy of the pre-war period, but also the economic and social system of the country in general.

The Kyiv School of Economics notes in its analytical study that as of May 25, 2022, the amount of direct damage to the economy of Ukraine from military actions to infrastructure and residential and non-residential buildings exceeded \$105.5 billion or more than UAH 3.1 trillion, which is equivalent to 56.4% of GDP as of 2021. In addition, taking into account the destroyed vehicles, roads, factories, trading points and business losses, the total loss of the Ukrainian economy from the war is estimated at 564-600 billion dollars or 320% of GDP in 2021⁶³. This shows that Ukraine suffered

⁶³ Kyiv School of Economics (2022, May 25). Direct damage caused to Ukraine's infrastructure during the war has reached over \$105.5 billion. URL : <https://kse.ua/about-the->

such losses during the three months of the war, which are three times higher than the GDP of 2021. Such a situation indicates the need to form a strategy for the economic development of Ukraine at the macro, meso, and micro levels, which will be based on the results of the war and take into account the relevant so-called financial aid packages from partner countries⁶⁴.

Financial mechanisms that will allow the state to stimulate the development of small and medium-sized enterprises (SMEs) in the form of investment (credit or grant) funds will be important for the post-war recovery of Ukraine.

A group of scientists, namely Okhrimenko O., Chinchyk A., Dergach A., Bannikova K. and Nesterenko O. in their study of economic development strategies for Ukraine note that with regard to the financing mechanisms for measures to implement the economic strategy of Ukraine, the first place should be use mechanisms of fiscal and monetary policy. In such a case, in the fiscal plane, state budget expenditures for the development of the economy must be based exclusively on the program-target method of financing, i.e. it is necessary to develop state target programs for the development of priority sectors of the economy (for example, processing industry, agriculture) and infrastructure (“Great construction”, etc.). This seems logical from the point of view that industry and agriculture

school/news/direct-damage-caused-to-ukraine-s-infrastructure-during-the-war-has-reached-over-105-5-billion/

⁶⁴ Okhrimenko, O., Chynchyk, A., Dergach, A., Bannikova, K., & Nesterenko, O. (2022). Strategies for economic development: the Ukrainian case. *Amazonia Investiga*, 11(55), 234-248. <https://doi.org/10.34069/AI/2022.55.07.25>

have suffered as a result of military operations and support for producers is important for the stable functioning and recovery of Ukraine's economy. These scientists suggest using a Keynesian approach to finance these programs in this case. In general, they propose the following mechanisms: an increase in the state budget deficit (that is, an increase in spending on financing programs to support entrepreneurs) or the raising of state debt exclusively for financing state-targeted programs. It is worth noting that the Keynesian method helped the USA get out of the Great Depression in the 30s of the 20th century, which consisted precisely in the maximum involvement of people in non-public works (restoration of bridges, buildings, roads, etc.), and it proved its effectiveness. In the case of Ukraine, it is worth paying more attention to stimulating business development and financing relevant programs.

Receiving aid for the reconstruction of Ukraine's economy and infrastructure from foreign partners is also an essential financing mechanism, but in this context it is important to ensure maximum transparency of the use of such funds and the patronage of foreign governments, organizations, and enterprises over programs. necessary for the reconstruction of individual objects.

In the context of the specified goals, conditions and financial mechanisms of Ukraine's macroeconomic strategy, it is necessary to develop meso- and micro-level economic strategies. It is at the meso level (including the level of regions and united territorial communities) that post-war economic strategies should be based on

attracting international financial aid, financial resources of the regional development fund, and self-financing mechanisms.

The main goals of the economic strategy at the meso-level in Ukraine can be presented in fig. 73.



Figure 73. The main goals of Ukraine's economic strategy at the meso level

Source: compiled by the authors based on [Okhrimenko, O., Chynchyk, A., Dergach, A., Bannikova, K., & Nesterenko, O. (2022). Strategies for economic development: the Ukrainian case. *Amazonia Investiga*, 11(55), 234-248. <https://doi.org/10.34069/AI/2022.55.07.25>]

As for the mechanisms of financing measures for the implementation of the economic strategy at the meso level, the greatest attention should be paid to self-financing mechanisms, which can be divided into groups, which are presented in Fig. 74.

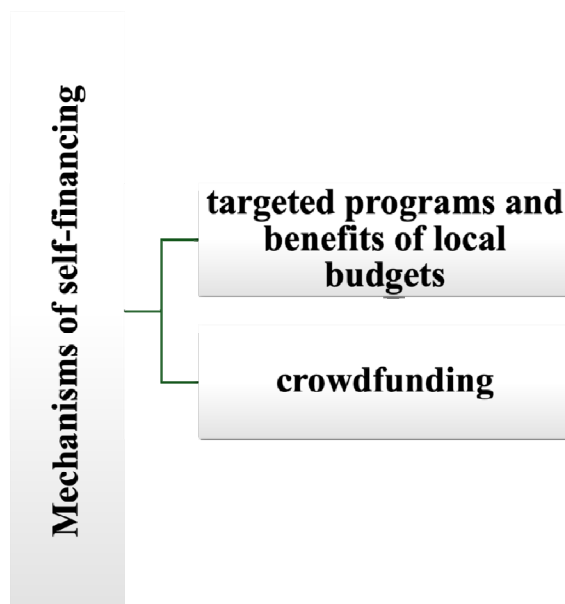


Figure 74. Self-financing mechanisms for Ukrainian enterprises

Source: compiled by the authors based on Okhrimenko, O., Chynchyk, A., Dergach, A., Bannikova, K., & Nesterenko, O. (2022). Strategies for economic development: the Ukrainian case. *Amazonia Investiga*, 11(55), 234-248. <https://doi.org/10.34069/AI/2022.55.07.25>

These mechanisms provide for the use of funds by enterprises to finance their own activities. The mechanism of participation in targeted programs and the use of benefits from the local budget provides that, depending on the ability of each community to finance projects, a special preferential business taxation regime may be introduced, which will provide for an exemption from paying land tax for businesses registered in the unified territorial community. This enables enterprises to accumulate these funds and spend them on the development of their own business.

Crowdfunding is currently developing in Ukraine, its meaning lies in the ability to attract funds from anyone willing to finance a project or business. World practice shows that it is sufficiently developed, including for business purposes, but in our opinion, people in Ukraine are more inclined to participate in the financing of social projects. But there are still examples of successful crowdfunding practices for business. For this purpose, there are crowdfunding platforms that host ideas for which a collection is being made. We can single out the most famous: Splinkokosht/Velika ideia (<https://bigggidea.com>), Kickstarter (<https://www.kickstarter.com>), Indiegogo (<https://www.indiegogo.com>)⁶⁵.

As for economic strategies at the microeconomic level in Ukraine, Okhrimenko O., Chinchyk A., Dergach A., Bannikova K. and Nesterenko O. note that as of mid-2022, they were actually aimed at preserving business and moving it from places of combat actions and occupation. However, these trends are unlikely to have changed at this time, and the business that has already moved, currently needs funds to continue its activities in the new city. That is why companies should form goals for attracting financial resources for business modernization and expansion through participation in international grant programs, national financing projects and preferential lending programs.

⁶⁵ Shcho take kraudfandynhova platforma? URL : [https://business.dii.gov.ua/handbook/finansovij-menedzment/so-take-kraudfandynhova-platforma#:~:text=Найбільш%20відомі%20краудфандингові%20платформи:Kickstarter%20\(kickstarter.com\)](https://business.dii.gov.ua/handbook/finansovij-menedzment/so-take-kraudfandynhova-platforma#:~:text=Найбільш%20відомі%20краудфандингові%20платформи:Kickstarter%20(kickstarter.com).). (in Ukrainian)

The “Diya.Business” portal lists the following types of business financial support programs, which are presented in Fig. 75. This portal notes that there are currently more than 60 SME support programs in which companies can participate.

This provides opportunities for business to solve the need for financing its own activities. This is especially important for enterprises of the agro-industrial complex, since the owners of a moving business cannot always move all their facilities. If we are talking about small farmers, then this exacerbates the problem even more.

So, the fig. 75 shows that these programs are divided into 3 large parts. In one case, it is an opportunity to get loans for different terms to finance projects for the development of one's own business both in a new place of residence and to expand one's opportunities in one's place of permanent deployment. Budgetary programs, one of the forms of implementation of which we have already mentioned above, provide an opportunity to receive non-refundable aid, or provide an opportunity to reduce the necessary payments to the budget and to self-finance your activities at the expense of the saved funds. In addition, assistance can be received in non-financial form. This type of assistance can be presented in the provision of appropriate materials for conducting business: for example, the provision of seeds or other forms. Like the aid provided by the FAO to help the rural population.



Figure 75. Types of SME support programs in Ukraine

Source: compiled by the authors based on⁶⁶

The last type of programs – donor programs – provide for the possibility of receiving grant funds for conducting business on an irrevocable basis. Currently, we can observe various programs from foreign donors aimed at the development of SMEs. Grants differ in the amounts provided to enterprises, may depend on the size of the enterprise itself (micro, small and medium-sized enterprises), the geography of the location of enterprises, etc. It seems quite justified that grants can be provided to some specific areas, which is explained by the need to develop business there, the outflow of

⁶⁶ Yaki isnuyut' prohramy finansovoyi pidtrymky biznesu? URL : <https://business.dii.gov.ua/handbook/finansovij-menedzment/aki-iskuut-programi-finansovoi-pidtrimki-biznesu> (in Ukrainian)

which can be observed due to active military actions nearby or a part of the territory may have been occupied before, but is currently deoccupied and entrepreneurs are returning to their homes and facilities.

A special role for the recovery of the economy of Ukraine in modern conditions should also be given to the development of agricultural business, because it has suffered significant losses from the conduct of hostilities and can hardly be moved to other areas. We have already described the main threats and losses faced by agro-industrial complex entrepreneurs, regardless of their size. The development and restoration of enterprises of the agro-industrial complex has strategic goals for our country, as it will provide both positive economic consequences (receiving income, wages) and social ones (solving unemployment problems, solving the problem of food insecurity). Providing opportunities for business development in new territories, where SMEs move, allow to develop those regions where this or that culture was not grown before, there were greater problems in the labor market, etc.

To develop the topic of our research, we will consider some programs that operate in Ukraine and enable agricultural enterprises to receive a loan or grant.

Since 2020, the State program “Affordable loans 5-7-9%” has been operating in Ukraine. The purpose of this program is the development of SMEs, which will ensure the stable development of the country's economy. The size of the loan in this program depends

on the scale of the activity, the number of people who will be employed during a certain period, etc.

As of the end of November 2023, entrepreneurs received 76,429 loans totaling UAH 253.5 billion from banks authorized to issue loans under this program. During the period of martial law, 41,607 credit agreements with a total amount of UAH 163.9 billion were concluded within the framework of this program⁶⁷.

In fig. 76 we will present the purposes for which loans were issued according to their amounts, and in Fig. 77 share by goals. So, we can see that the most loans were issued for anti-war purposes (49%) and agricultural producers (31%), and the least for refinancing previously issued loans (3%). These figures show that the funds are directed to goals that are important for us today, because the second place is occupied by agricultural producers. It is worth noting that on March 12, 2022, the relevant resolution of the Cabinet of Ministers of Ukraine was adopted, by which changes were made to this program specifically with regard to agricultural producers. The main purpose of these changes was to ensure the financing of sowing operations⁶⁸.

⁶⁷ Minfin: Za chas diyi voyennoho stanu v mezhakh Derzhavnoi prohramy «Dostupni kredyty 5-7-9%» vydano 41607 pil'hovykh kredytiv na blyz'ko 164 mlrd hrn. URL : [https://www.kmu.gov.ua/news/minfin-za-chas-dii-voiennoho-stanu-v-mezhakh-derzhavnoi-prohramy-dostupni-kredyty-5-7-9-vidano-41-607-pil'hovykh-kredytiv-na-blyzko-164-mlrd-hrn#:~:text=3%20моменту%20старту%20Державної%20програми,27.11.2023%20p.\(in Ukrainian\)](https://www.kmu.gov.ua/news/minfin-za-chas-dii-voiennoho-stanu-v-mezhakh-derzhavnoi-prohramy-dostupni-kredyty-5-7-9-vidano-41-607-pil'hovykh-kredytiv-na-blyzko-164-mlrd-hrn#:~:text=3%20моменту%20старту%20Державної%20програми,27.11.2023%20p.(in Ukrainian))

⁶⁸ Zminy do prohramy «Dostupni kredyty 5-7-9%»: pidtrymka posivnoi kampaniyi ta aktyvatsiya pidpryyemnytstva. URL : <https://mof.gov.ua/uk/news/zmini-do-programi-dostupni-krediti-5-7-9-pidtrimka-posivnoi-kampanii-ta-aktivatsiia-pidpriemnytstva-3374> (in Ukrainian)

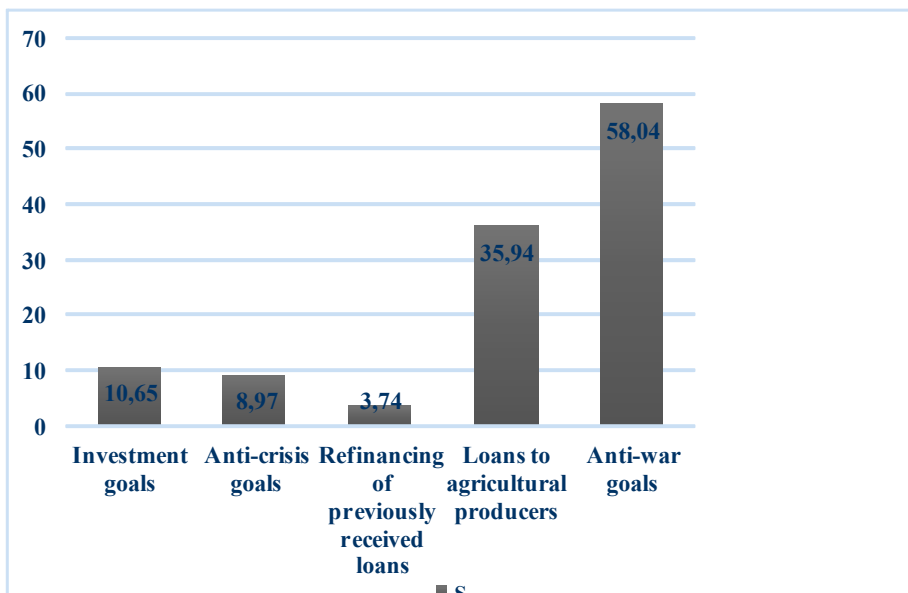


Figure 76. Purposes for which loans were issued under the “Affordable Loans 5-7-9%” program during martial law

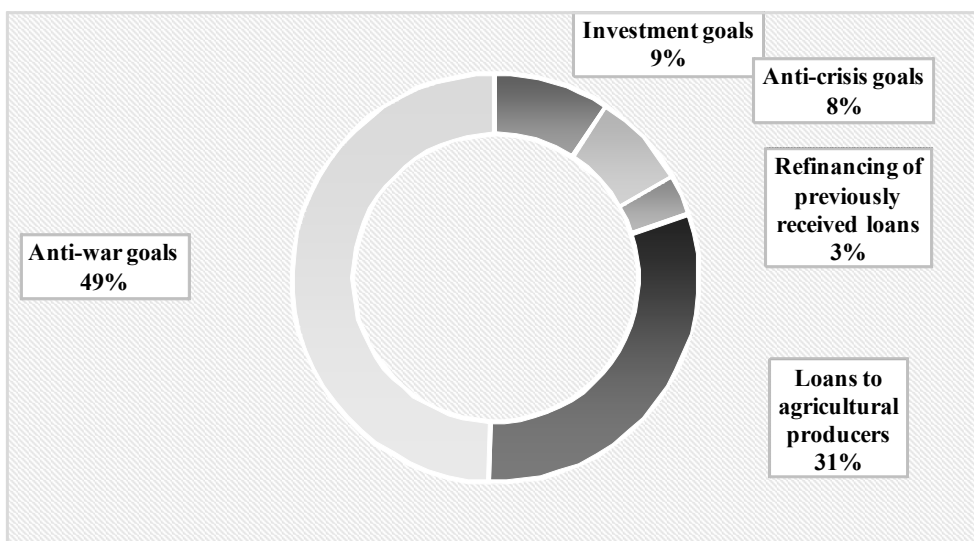


Figure 77. The share of loans issued during the martial law in Ukraine under the program “Affordable loans 5-7-9%”

In fig. 78, we will present the main changes under the program towards agricultural producers.

The program has been extended to medium-sized enterprises with an annual income of up to 50 million euros (previously it was 20 million euros) and to large enterprises with an annual income of more than 50 million euros, regardless of the number of employees.

The maximum loan amount for all business entities has been increased from UAH 50 million to UAH 60 million, taking into account the group of related companies.

The interest rate is 0% per annum.

Purpose of lending:

- investment loan for the purchase of agricultural machinery;
- credit for replenishment of working capital for the purchase of seeds, fertilizers and fuel and lubricants.

The term of the loan is 6 months

The size of the credit guarantee is 80% of the amount of the loan of a micro, small and medium business entity (except for large business entities).

Figure 78. Changes to the “Affordable loans 5-7-9%” program for agricultural producers

Source: compiled by the authors based on Zminy do prohramy «Dostupni kredyty 5-7-9%»: pidtrymka posivnoyi kompaniyi ta aktyvatsiya pidpryyemnytstva. URL: https://mof.gov.ua/uk/news/zmini_do_programi_dostupni_kredyty_5-7-9_pidtrimka_posivnoi_kompanii_ta_aktivatsiia_pidpriemnitstva-3374 (in Ukrainian)

As you can see, changes have been made in that way that they should contribute to the development of opportunities for business operating in the agro-industrial complex. It seems positive that they are aimed specifically at the development of SMEs, which is becoming especially relevant for our economy.

In 2023, as of the end of November, 12,500 agricultural holdings received UAH 66.1 billion in development loans. Almost UAH 38 billion was provided to 9,700 agricultural enterprises under the state program “Affordable loans 5-7-9%”⁶⁹.

We present in Figure 79 and 80 the volume of loans under various programs received by farmers by region under all programs and under the “Affordable loans 5-7-9%” program.

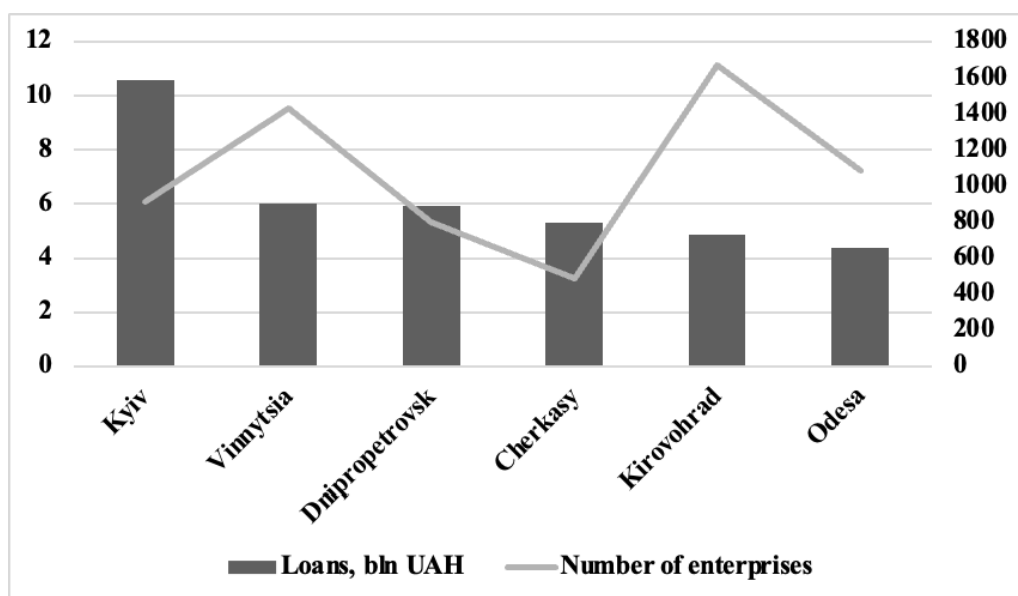


Figure 79. Amount of loans to agricultural enterprises by region under all programs

Source: Compiled by the authors based on 38 mlrd hryven' otrymaly ts'oho roku sil'hosppidpryyemstva za prohramoyu «Dostupni kredyty 5-7-9». URL: <https://minagro.gov.ua/news/38-mlrd-griven-otrimali-cogo-roku-silgosppidpryyemstva-za-prohramoyu-dostupni-kredyty-5-7-9> (in Ukrainian)

⁶⁹ 38 mlrd hryven' otrymaly ts'oho roku sil'hosppidpryyemstva za prohramoyu «Dostupni kredyty 5-7-9». URL : <https://minagro.gov.ua/news/38-mlrd-griven-otrimali-cogo-roku-silgosppidpryyemstva-za-prohramoyu-dostupni-kredyty-5-7-9> (in Ukrainian)

As we can see, the largest number of loans in cash equivalent were received by agricultural enterprises of Kyiv region, although the number of enterprises that received loans is the largest in Kirovohrad region. It should be noted that in fig. 79 and 80 show the regions with the highest indicators. Vinnytsia, Dnipropetrovsk and other regions, which are shown in Figure 14, received much less than Kyiv region.

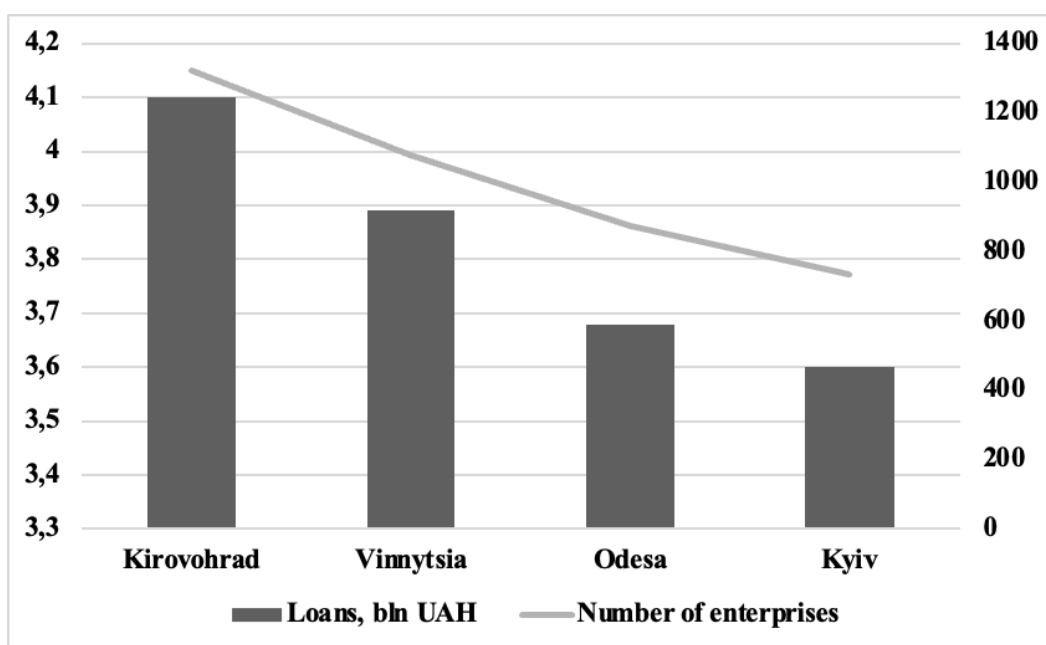


Figure 80. Amount of loans to agricultural enterprises by region under the program “Affordable loans 5-7-9%”

Source: compiled by the authors based on 38 mlrd hryven' otrymaly ts'oho roku sil'hosppidpryyemstva za prohramoyu «Dostupni kredyty 5-7-9». URL: <https://minagro.gov.ua/news/38-mlrd-griven-otrimali-cogo-roku-silgosppidpryyemstva-za-programoyu-dostupni-krediti-5-7-9> (in Ukrainian)

Figure 80 shows the volume of loans, which were received the most in monetary terms, by farmers under the program “Affordable loans 5-7-9%”. The same areas included as those in the previous figure are shown here, but they have a different result. Thus, agricultural enterprises of the Kirovohrad region received the most (4.1 billion UAH), although in the previous figure they do not occupy the first step (4.85 billion UAH). As you can see, loans received by agricultural enterprises under this program make up almost 85% of all received loans. And the Kyiv region, on the contrary, differs in that the rate of loans under this program is almost 34% of all received by agricultural producers.

In general, it should be noted that participation in this program gives our agricultural producers the opportunity to develop their business both in a new city (in case of relocation) and in the territory of their usual location.

Also, since July 1, 2022, a system of grants for the development of entrepreneurship has been in effect in Ukraine, which received government support and is aimed at stimulating entrepreneurial activity and creating new jobs. This is important under any conditions of the functioning of the state's economy, but in wartime conditions it becomes even more relevant. The grant programs included in this system are presented in fig. 81.

These programs are important for the development of small and medium-sized businesses in particular and are aimed at creating maximum conditions for sustainable entrepreneurship in Ukraine.

An important requirement of these programs is the creation of jobs, which solves the problems of the labor market in Ukraine and increases the welfare of the population.

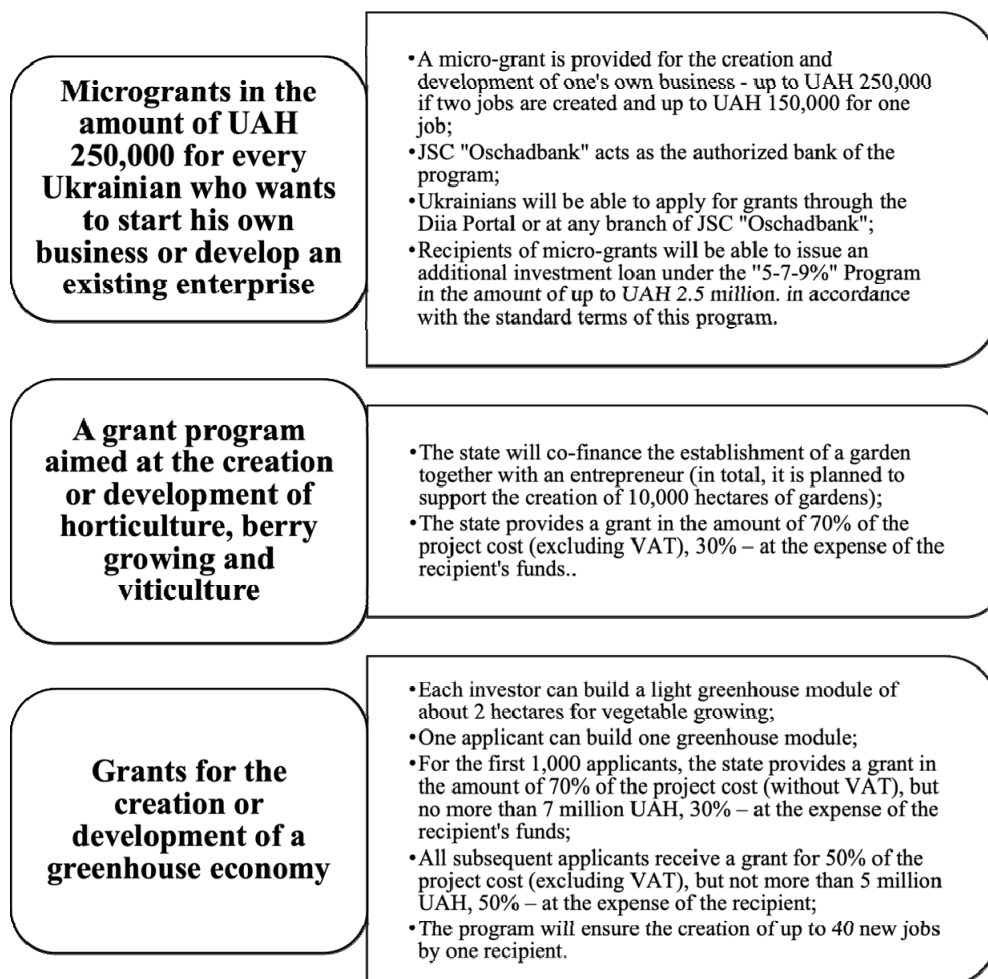


Figure 81. The government system of grants for the development of entrepreneurship in Ukraine

Source: compiled by the authors based on Uryad zapuskaye systemu hrantiv dlya rozvytku pidpryyemnytstva. URL : <https://www.me.gov.ua/News/Detail?lang=uk-UA&id=d0332905-2142-41eb-b5ce-29e287df3f70&title=UriadZapuskaSistemuGrantivDliaRozvitkuPidprimnitstva> (in Ukrainian)

In general, the Government project “eRobota” is already operating in Ukraine, which includes 6 grant programs for starting a business, developing entrepreneurship and training. This project includes the above-mentioned grants, as well as additional play for the development of a processing enterprise, a grant for the implementation of a startup, including in the IT field, and obtaining funds for training in IT specialties⁷⁰.

As part of the grant support for small and medium-sized businesses of the eRobota project in 2023 (as of November 21, 2023), 126 farms received state aid for the total amount of UAH 524.2 million for the development of gardens and greenhouses. On the fig. 82 we visualize payments under this program for gardens and greenhouses during 2023 and from the beginning of the program.

According to the terms of the grant, the amount of the contribution to the program is no more than 70% of the cost of the entire project and no more than UAH 10 million. The rest - 30% - the applicant must finance with his own funds or credit funds. Employment of employees is a mandatory condition of the grant. For gardens, according to the terms of the grant, these are 5-10 permanent workers and 125-145 seasonal workers (depending on the plantations themselves). For greenhouses, this means the

⁷⁰ YERobota: hranty vid derzhavy na vidkryttya chy rozvytok biznesu. URL : <https://www.me.gov.ua/Documents/Detail?lang=uk-UA&id=94321ef8-1418-479c-a69f-f3d0fdb8b977&title=Robota-GrantiVidDerzhaviNaVidkrittiaChiRozvitokBiznesu> (in Ukrainian)

creation of at least 4 permanent jobs and 10 seasonal jobs per 1 ha⁷¹. Moreover, the term of employment of seasonal workers must be at least 8 months during the calendar year (this is an important remark, as it is usually perceived that seasonal workers must be hired for 6 months. The term of 8 months means that they will be employed longer and receive wages).

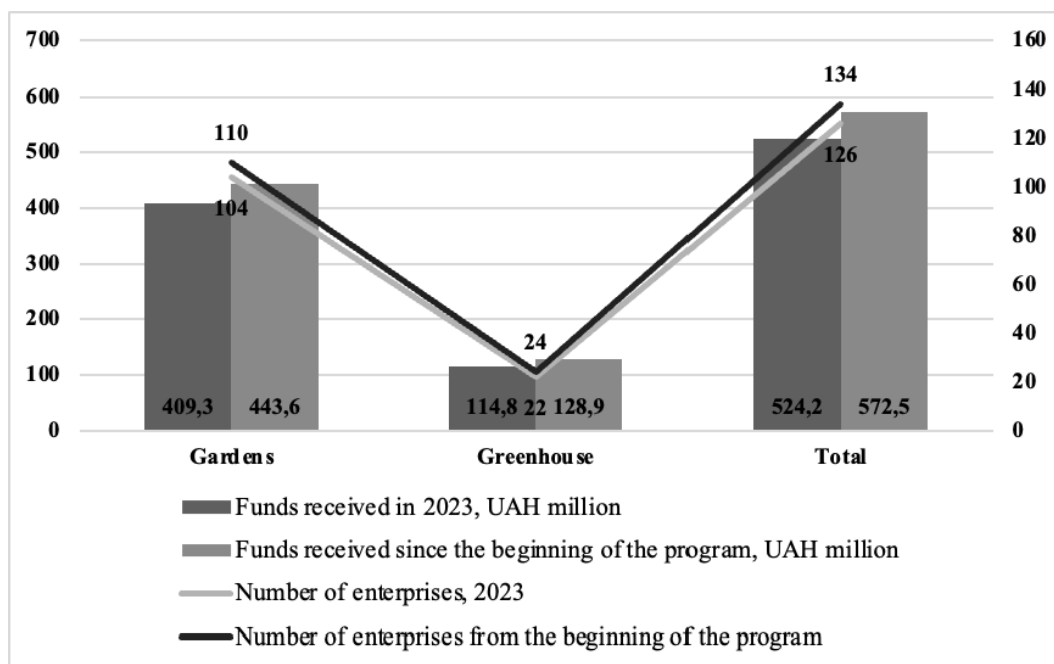


Figure 82. Grants for the development of gardens and greenhouses during 2022-2023.

Source: compiled by the authors based on 20 mln hryven' hrantiv vyplacheno shche 7 ahropidpryyemstvam na rozvytok sadiv i teplyts'. URL : <https://minagro.gov.ua/news/20-mln-griven-grantiv-viplacheno-shche-7-agropidpriyemstvam-na-rozvitok-sadiv-i-teplic> (in Ukrainian)

⁷¹ 20 mln hryven' hrantiv vyplacheno shche 7 ahropidpryyemstvam na rozvytok sadiv i teplyts'. URL : <https://minagro.gov.ua/news/20-mln-griven-grantiv-viplacheno-shche-7-agropidpriyemstvam-na-rozvitok-sadiv-i-teplic> (in Ukrainian)

As we can see from fig. 82, the largest number of grants were received for the development of horticulture, both in monetary terms, and the number of enterprises significantly exceeds those that received greenhouses. This may be related not to the priority of horticulture itself, but to the request from society and the fact that fewer applications for greenhouse grants were submitted.

Annexes C and D of this study present reports on approved projects for the provision of grants for the establishment or development of horticulture, berry growing and viticulture and the construction of a modular greenhouse for the purpose of providing grants for the establishment or development of a greenhouse economy. Both reports contain information as of November 23, 2023.

The functioning of this program creates real foundations for the development of SMEs, which improves the situation on the country's market, provides the population with agricultural products, creates new jobs, and, accordingly, improves the conditions and quality of life of the population. Therefore, the state's policy to stimulate entrepreneurship, including the agro-industrial complex seems absolutely logical, urgent and important for the recovery of Ukraine's economy in wartime conditions.

Currently, the Ministry of Agrarian Policy has prepared certain changes to the procedure for granting grants for the development of horticulture, which were planned to be implemented from January 2024. In accordance with these changes, the conditions for granting

these grants are expanded, namely, they are supplemented by the following⁷²:

Clause 4 of the Procedure for granting grants for the development of horticulture is expanded:

- grants are provided for planting and setting up a plantation on a plot of land or on adjacent plots of land, the total area of which is from 1 to 25 hectares;

- the location between land plots of economic paths, field protection forest strips and other protective plantings, borders (rivers, streams, canals, forest strips, vegetation strips, trees, paths, rivulets, ravines, wetlands) is allowed.

These changes expand the opportunities for our entrepreneurs in the development of agricultural business in terms of the use of a larger scale of land for the arrangement of plantations, as well as more types of land where plantations can be planted.

Thus, we see that the state pays enough attention to stimulating entrepreneurship, including in the agricultural sector. The implementation of these grant programs helps to a large extent to solve important socio-economic problems that existed in Ukraine before the start of the full-scale invasion and became even more acute after it. Migration processes both within the country and

⁷² The Ministry of Agrarian Policy has prepared changes to the procedure for providing government grants for the development of horticulture. URL : <https://minagro.gov.ua/news/v-minagropolitiki-pidgotuvali-zmini-do-poryadku-nadannya-uryadovih-grantiv-na-rozvitok-sadivnictva>

abroad have caused major changes in the country's labor market, which automatically implies a decrease in the quality and standard of living of the population. In addition, people who have moved within the country may have those competencies that are not required in the labor market in the new location. In addition, military operations significantly affected the effectiveness of the agricultural market, which requires a quick response to the challenges faced by entrepreneurs, small farmers, and the rural population. It is grants from the state or participation in other grant programs (such as grants from the FAO, which are considered in another part of this study) that provide real opportunities to realize your potential in a new city, expand your existing capacities or open a completely new business. which we intend to start.

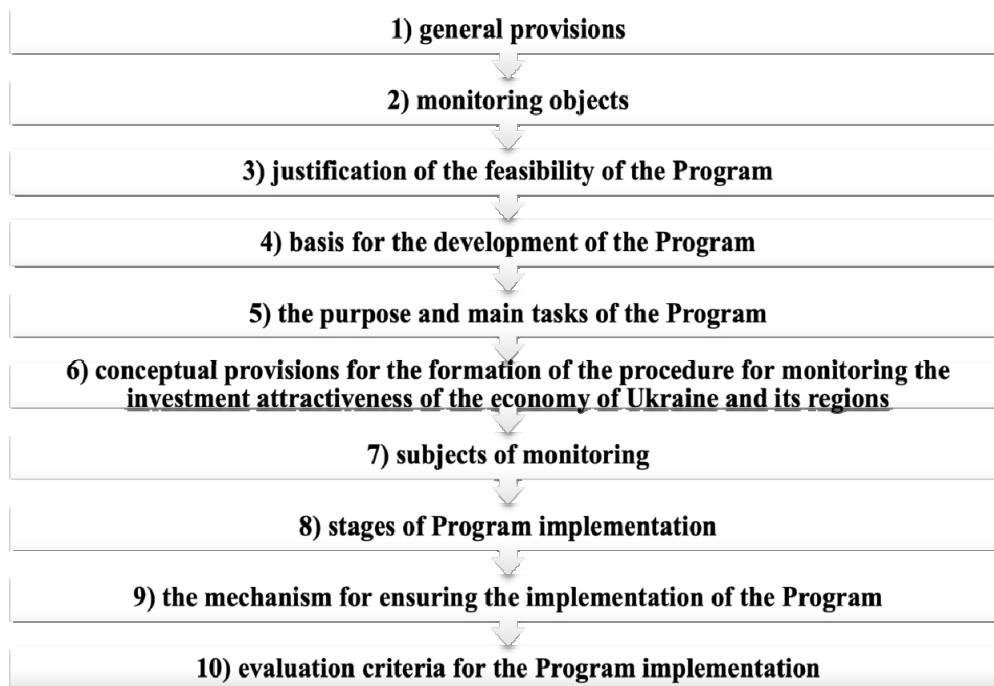
But it is important in our country not only to provide grants or loans for business development, but also to control these investment flows. In the research of our scientists, namely in the work of Dergach A.V. (Dergach A. (2022) Organizational support of state management of investment projects. Bioeconomy and agrarian business. Volume 13, №2. DOI : [http://dx.doi.org/10.31548/bioeconomy13\(2\).2022.17-27](http://dx.doi.org/10.31548/bioeconomy13(2).2022.17-27)) who study this topic, it was noted that in today's realities, developed countries use monitoring as an effective tool for implementing state management of investment processes, programs and projects. Thus, on the basis of monitoring carried out by a number of international organizations and published in specialized periodicals, such as the

World Bank, Institutional Investor, Euromoney, Business Environment Risk Index (BERI), Moody's Investor Service, "The Economist", "Fortune", "Euromoney", a powerful analytical base for rating the investment attractiveness of economies of various countries, industries, enterprises, etc. has already been formed in the world, where the degree of efficiency of public administration acts as one of the evaluation indicators.

The main goal of methodical provision of state management of investment projects is to create and renew, on a permanent basis, an information base on the basis of monitoring, which in turn will ensure its accumulation and preservation in the future, which allows you to quickly adjust actions in the direction of the formation of the desired investment attractiveness for the investor , both at the regional and state levels ⁷³.

Management of investment projects at the state (regional) level should be carried out according to a pre-developed Program for monitoring the implementation of investment projects, which consists of a complex of interrelated elements, each of which is aimed at forming an effective system of systematic, continuous, long-term monitoring of changes in indicators and includes the following sections:

⁷³ Dergach A. (2022) Organizational support of state management of investment projects. *Bioekonomika i ahraryy biznes*. Tom 13, №2. DOI : [http://dx.doi.org/10.31548/bioeconomy13\(2\).2022.17-27](http://dx.doi.org/10.31548/bioeconomy13(2).2022.17-27)



Each of the specified stages must ensure the fulfillment of one comprehensive goal of the Program.

Development of the Investment Project Monitoring Program based on the combination of informational, analytical and communication components, which are aimed at determining reference indicators, risks, assessment methods, which allows for the formation of a comprehensive system of monitoring changes.

This monitoring program will make it possible to more effectively manage the program of both grant support for entrepreneurs and credit investment. In both cases, regardless of whether funds need to be returned or not, it is important to control their use, as well as follow the consequences of the application of these investment programs, in order to decide on further possible

changes in their mechanism, conditions of provision, selection criteria or the introduction of new, more relevant and urgent programs.

Many actions can be taken by the state in terms of stimulating entrepreneurial activity, in particular in the agricultural sector. At the same time, it becomes important to take into account the needs of all sections of the population, the balanced development of this sector and its inclusiveness, which will allow solving both economic and social problems at the same time. Although the analysis of the consequences of changes in the functioning of the agricultural sector in Ukraine as a result of a full-scale invasion showed that it is not possible to single out purely economic problems, all of them are fundamentally socio-economic and agricultural products bring not only a decrease in cash receipts, but also a decrease in the quality of life of the population.

That is why we consider the investment programs carried out by the Government of Ukraine to be necessary and justified and allow us to solve urgent issues in the agro-industrial complex of our country.

3.2. Inclusive rural tourism and ecology: ensuring optimality

Tourism is proving its value as a driver of economic growth (including poverty reduction), inclusiveness and sustainable development. It contributes to the achievement of the UN

Sustainable Development Goals - 8: Promote sustainable, inclusive and sustainable economic growth, full and productive employment and decent work for all; 12: Sustainable consumption and production; 14: Conservation and rational use of oceans, seas and marine resources for sustainable development. The UN World Tourism Organization (UNWTO) defines inclusive tourism as a process of cooperation between various participants in tourism and specifies inclusion (inclusion, accessibility) for people with special needs as consumers of tourism products and services. Inclusive tourism accounts for 11% of global tourist flows and 22% of all tourism expenditures in the world (according to UNWTO, 2020).

The category of people with special needs should be considered more broadly, not limited only to persons with physical disabilities (it is certainly necessary to form the appropriate infrastructure for them in the tourism sector). It is necessary to position customer orientation with the provision of various special needs of tourists – with gastronomic preferences (for example, wine tasting, consumption of traditional local products / delicacies in different regions, etc.), ecological tourism, tourism with the contemplation of cultural attractions, etc.

The countryside has many exclusive charms that attract tourists, they can be defined as a place or objects that deserve special attention due to some of their qualities; those specific assets of a certain area that attract not only the residents themselves, who choose these areas for life, but also external tourists who seek to

visit them. This is also a special kind of agricultural landscape – terraces, cultivated fields interspersed with natural and planted fields of tulips and daffodils, natural reserves or parks, lakes and ponds with swans or other animals, as well as historical buildings, embankments, barrows, a narrow-gauge railway in a mountainous area, etc. . The rural landscape of Ukraine is dominated by agro-landscapes – fields, pastures, forest strips and forest plantations, hilly and furrowed areas, as well as rural settlements with a number of households that actively engage in homestead agricultural activities. Most rural communities have one or another natural and historical-cultural attractions (sights).

Tourists are attracted by categorically different charms and places:

- with particularly attractive conditions (recreational areas, unique objects);
- with extremely unfavorable conditions (crisis, cluttered places and objects), including extreme conditions for special categories of tourists. An example of the latter is the depressed Chernobyl zone, which is an active tourist attraction.

Taking into account the need to ensure inclusion in the field of tourism, namely in accordance with the preferences of different categories of tourists and the implementation of their readiness to spend this or that amount of money on tourism, there should be different “tourist products”:

- high value (vip products, if we can say speak),

- medium-priced (available at a price point for a wider range of consumers),
- low-cost tour products.

In cases where the improvement of the territory and infrastructure of the tourist object increases the price of tourist services too much, the expectation of an influx of tourists may not be justified, the flow of tourists is reduced. For the promotion of development based on the attractions for tourists, the question of assessing the impact of tourism on the ecological state of tourist objects and their environment is gaining particular importance. In particular, during the 90s of the last century, there was a growing interest in the role of attractions in rural development.

Among the researchers, there was an almost unanimous opinion that a paradigmatic shift is taking place in the way available assets for the development of rural regions rich in attractions are considered ⁷⁴. This shift refers to the fact that communities in regions rich in attractions increasingly prefer to build activities based on the promotion of environmental qualities, moving away from the extraction of natural resources for foreign markets and increasing the volume of foreign trade ⁷⁵. However, as the popularity of the region for tourists increases, so does the amount of waste and

⁷⁴ Green, G. P., Deller, S. C., & Marcouiller, D. W. (Eds.). (2005). Amenities and rural development: theory, methods and public policy. *Edward Elgar Publishing*.

⁷⁵ Prystupa L., Koval, V, Kvach, I. and Hrymalyuk, A. (2019). Transformation of cycles of state regulation in international trade. *AEBMR-Advances in Economics Business and Management Research*, 95, Pp. 277-280.

the overall impact on the ecosystem, so it is important to analyze the indicator of the social well-being of the population of the rural area.

Two hypotheses can be formulated regarding the impact of tourism on ecology. The first hypothesis concerns the positive impact of tourism on the environment, since the initiated tourism can stimulate the creation and maintenance of favorable ecological conditions by the local community in order to attract more tourists. The second hypothesis concerns the negative impact of an increasing number (inflow) of tourists on a natural resource as a tour object, which will manifest itself in the depletion of this resource, in general, pollution of the natural environment.

The explanation for the hypothesis about the negative impact of tourism on ecology is similar to the “ecological” curve of Kuznets, according to which the expected relationship between the growth and use of the attraction and its value can be seen by stages of development. In the initial situation of an insignificant level of use of the lure, its quality is preserved; when the economy of extracting rent from the lure becomes more active, the pressure on it and on the natural environment increases; as the economy grows, depletion and degradation of resources and the environment increases. But at a certain level, growing incomes begin to be associated with the need for spending on the protection of both the attraction itself and the natural environment. In the end, it is possible to increase the value of the attraction as a tourist product, to restore care and investment in this tourist object.

For example, there was a certain decrease in the investment attractiveness of recreation places on the Black Sea coast near the city of Odesa, including due to the increase of anthropogenic influence and deterioration of their ecological condition, despite growing profits. This is also characteristic of recreational areas in Western Ukraine (in particular, non-privately owned land near Mount Hoverla, Lazeshchyna), where there is a large concentration of tourists and, as a result, significant clogging of the areas⁷⁶.

A way out of this situation may be an increase in fines for non-compliance with the norms of environmental legislation, an increase in spending on improving the environment and preserving natural and cultural values, control over the use of funds at the local level along with an increase in the responsibility of local communities and agricultural enterprises⁷⁷, as well as state support for rural households, that provide rural hospitality services.

Ukrainian communities are still very little aware of the possibilities of building a business (local economy) on the promotion of natural monuments and moving away from the current practice of extracting natural resources for foreign markets. Although such a shift is already evident in many countries, in

⁷⁶ Popova O.L., Koval V.V., Mikhno I.S., Tarasov I.V., Asaulenko N.V., Filipishyna L.M. Assessments of national tourism development in terms of sustainability and inclusiveness. *Journ. Geology. Geographi. Geoecology*. 2020. № 29(2), Pp. 377–386. URL: <https://geology-dnu.dp.ua/index.php/GG/article/view/700/603>

⁷⁷ Popova, O., Koval, V., Antonova, L., & Orel, A. (2019). Corporate social responsibility of agricultural enterprises according to their economic status. *Management Theory and Studies for Rural Business and Infrastructure Development*, 41(2), Pp. 277–289. URL: <https://doi.org/10.15544/mts.2019.23>

particular European ones. The reasons for not realizing the attractions and their use as an economic asset of local development are as follows.

Firstly, in most cases, attractions that attract tourists are those assets that are ineffectively regulated by market instruments, as there are problems in establishing their commodity nature. Often they are in the public domain and it is difficult to make users pay for the benefits they receive from these assets, which gives rise to the well-known “stowaway problem”. To avoid the negative effects of tourism (“tourists - action”) on the physical condition and ecology of tourist sites, it is important to build resistance to such phenomena on the part of the communities (“local communities - resistance”) that live there and take care of these sites. It is important for communities to realize and recognize certain unique sites not only as assets for tourism development, but also as assets for local socio-economic development. This results in the management of common resources with signs of a sustainable institution that effectively organizes this process, including careful control over their use to improve public goods.

Secondly, the interest in increasing profits on the part of private entrepreneurs puts the interests of communities on the back burner, the desire to maximize financial assets prevails, rather than increasing the costs of preserving ecosystems. Funds are accumulated to speed up the development of recreation sites, increase tourist flows, reducing costs for environmental restoration.

Imperfect legislation slows down the introduction of waste sorting and processing, and low fines and environmental taxes lead to a negligent attitude of business and the population to the problem of their accumulation. This actualizes the need for regulation in this area.

The experience of the development of rural tourism shows that in agrarian regions, where rural communities and agricultural and other enterprises allocate funds for local development (from local budgets, independently accumulate financial resources, creating funds to support the recreational potential of territories), tourist zones have features of sustainability to a large extent. Rural tourism in these regions contributes to the increase of economic potential as a result of ensuring employment of the population, growth of production and, in general, an increase in the standard of living of the rural population. Thanks to the low density of tourists, which is ensured by the large number of guest houses, the ecological balance of natural systems is not disturbed, biological diversity is preserved, and the generation of waste and pollution of the natural environment is minimized. Rural tourism and ethnographic features of the host country are organically integrated, due to which local communities, customs and culture are preserved and actively developed, historical heritage is actively involved in the tourist arsenal.

It cannot be allowed that with the growth of the tourist flow, the depletion and degradation of natural resources and the environment, and the chaotic increase of landfills occur. Growing

revenues in the field of tourism must be associated with increased costs for the protection of both the tourist attractions themselves and the natural environment. It is important to strengthen the role of local communities in controlling the use of natural resources and the state of the environment in places of environmental stress due to the increase in the number of tourists. It is necessary to regulate at the legislative level the impact of tourist services on the ecosystem, increase fines for violation of the established norms. It is necessary to implement a systematic approach with the participation of the population, business and the state to build infrastructure in recreation areas, create a favorable climate, and improve the tourist image of Ukraine.

A prolonged war in Ukraine may lead to the loss of 14 billion dollars revenues from tourism in the world in 2022⁷⁸; this will have a painful impact on the development of the industry, which was the most affected and only started to recover from the Covid-19 pandemic. UNESCO established that the two-year war cost Ukraine more than 19.6 billion dollars income from tourism and will need 9 billion dollars within 10 years to restore the culture and tourism sectors⁷⁹. According to the expert, tourism in Ukraine, as a victim

⁷⁸ Impact of the Russian offensive in Ukraine on international tourism. UNWTO Tourism Market Intelligence and Competitiveness. *UN Tourism*. URL: <https://www.unwto.org/impact-russian-offensive-in-ukraine-on-tourism#:~:text=A%20prolonged%20conflict%20could%20translate,US%24%204.7%20billion%2C%20respectively>

⁷⁹ UNESCO says \$9 billion needed to revive Ukraine tourism, culture sectors. February 14, 2024. *Reuters*. URL: <https://www.reuters.com/world/europe/unesco-says-9-billion-needed-revive-ukraine-tourism-2024-02-13/>

of rampant military aggression by the Russian Federation, has been completely destroyed, and the sphere of international tourism is almost frozen⁸⁰.

From the experience of countries that recovered after large-scale conflicts and received tourists again - Croatia (tourism currently accounts for about 15% of the country's GDP), Cyprus, etc., it is important to actively position the main tourist advantages and large-scale advertising in the countries of the world. Undoubtedly, Ukraine needs to develop tourist programs for the places of military glory of the Armed Forces of Ukraine after the war. Although it is impossible to allow the tourist image of the country to be fixed in a monosphere - for example, tourism for military fans⁸¹. For Ukraine, it is appropriate to position the brand of the country of medieval castles, beautiful ski resorts, murals of world-famous authors, ecotourism, in particular the natural revival of the territory of the Kakhovsky Reservoir, many locations in large Ukrainian cities as objects of "urban exploration" (for tourists who are interested in the study of artificial structures, usually abandoned ruins or hidden components of the artificial environment). From the experience of post-war Germany, in order to activate the domestic tourism market, one should focus on the organization of quality tourist services at reasonable prices (subsidy support from the

⁸⁰ Dvors'ka I. (2022) Turystychna haluz' pislya viyny: chy mozhlyva reanimatsiya ta antykrizove upravlinnya. [The tourism industry after the war: is resuscitation and anti-crisis management possible] 16.05.2022. LIGA.net. URL: <https://blog.liga.net/user/idvorskaya/article/44952>

budget, package offers for group tours and discounts on them) for the population with low incomes; the target group of such social tourism is pensioners, young people, etc.

In Ukraine, in the war and post-war period, the proper organization of rehabilitation and social tourism acquires special importance: preparation of providers of tourist services to receive a new category of consumers of these services, volunteer support movement, technical infrastructure, tourism safety. State support is necessary for this important tourist segment, in particular, as a solidarity - when members of rural households provide hospitality services of rehabilitation and social direction, including various economic levers (development and financing of targeted programs, provision of subsidies, soft loans, formation of special funds to support providers and consumers of these tourist services). The formation of a single base of inclusive tourism facilities is also relevant.

3.3. Potential opportunities and challenges of the European Green Deal for the development of the agricultural sector of Ukraine's economy

On June 23, 2022, the European integration processes in Ukraine reached a new level of relevance and intensity. On this day, Ukraine obtained candidate status for membership in the European Union. From now on, Ukraine must pay special attention to the

rapid alignment of all aspects of its policies and legislation with the policies, standards, and rules of the EU.

One of the leading roles in this process belongs to the Common Agricultural Policy (CAP), which has always played a key role in the formation of the Common Internal Market of the Community and remains one of the pillars supporting the European market today. Therefore, the success of European integration and Ukraine's acquisition of EU membership depends on how quickly and effectively Ukraine's agricultural policies are harmonized with those of the EU, aligning legislation to implement these policies.

The EU's CAP has undergone a long journey, during which its focus has shifted from productivity to competitiveness, and finally to sustainable development goals (see table 16).

The EU agricultural sector is one of the main producers of food, covering 48% of EU land, providing jobs for 55% of the population, and remaining the most integrated food technology market in the world. By the end of 2017, direct financial support benefited 7 million farms, which cultivated 90% of agricultural land. This assistance amounted to an average of around 46% of agricultural community incomes and, in some cases, far exceeded this figure, ensuring income stability for producers.

Table 16. Stages of CAP Development in the EU and Their Key Features

Years	Main characteristics			
Early Years (since 1957)	Food security	Increased productivity	Market stabilization	Product support
Crisis Years (1970s-80s)	Over-production	Increased expenditures	International disputes	Structural measures
Macsharry Reform (1992)	Reduction of surpluses	Environmental protection	Income stabilization	Budget stabilization
Agenda (2000)	Deepening reform process	Competitiveness	Rural development	Consumer issues
Fischler Reform (2003)	Market orientation	Environmental protection	Rural development	Simplification
Health Check (2008)	Strengthened support for reform of 2003	New challenges	Risk management	WTO compliance
CAP until 2020	Sustainable development	Environmental protection	Rural development	Biodiversity conservation
CAP 2020-2027	Environmental programs	Climate change	Rural development	Biodiversity development

Source: The history of the CAP. Official site of Agriculture and rural development of the EU. URL : http://ec.europa.eu/agriculture/cap-history/index_en.htm

During 2014-2020, financial assistance was reoriented toward implementing innovations, risk management, environmental pro-

tection, climate change mitigation, and rural community development⁸¹.

Currently, the general goals of the 2020-27 policy include promoting an innovative, competitive, adaptive, and diversified agricultural sector that ensures long-term food security, strengthening the socio-economic condition of rural areas, supporting environmental health, enhancing its protection, biodiversity, and climate change prevention in line with the EU commitments under the Paris Climate Agreement.

The roadmap for actions that will transform the European Union into an efficient, sustainable, and competitive economy, set out the means to make Europe the first climate-neutral continent in the world by 2050. This goal aims to stimulate economic development, improve health, and enhance people's quality of life. This roadmap is embodied in the European Green Deal, adopted on December 11, 2019⁸².

The European Green Deal (EGD) is a political complex of regulatory and financial measures aimed primarily at supporting European agricultural producers in transitioning to more sustainable, climate-neutral production. The Deal affects almost all economic

⁸¹ Starikova, L. (2022) Spil'na ahrarna polityka YES i zavdannya Ukrayiny v konteksti yevrointehratsiyi. [Common agricultural policy of the EU and tasks of Ukraine in the context of European integration.] URL : http://www.aau.org.ua/media/publications/1894/files/CAP_2023_02_10_12_36_02_818740.pdf (in Ukrainian)

⁸² The European Green Deal sets out how to make Europe the first climate-neutral continent by 2050, boosting the economy, improving people's health and quality of life, caring for nature, and leaving no one behind. Official site of European Commission. URL : https://ec.europa.eu/commission/presscorner/detail/e%20n/ip_19_6691

sectors and aims to encourage producers to reduce carbon emissions. It includes important legislative standards that can pose both risks and opportunities for exporters from third countries, including Ukraine.

In short, the essence of the project is that European producers are required to rethink their production models to minimize carbon emissions in line with the EU's commitments (Fig. 84).

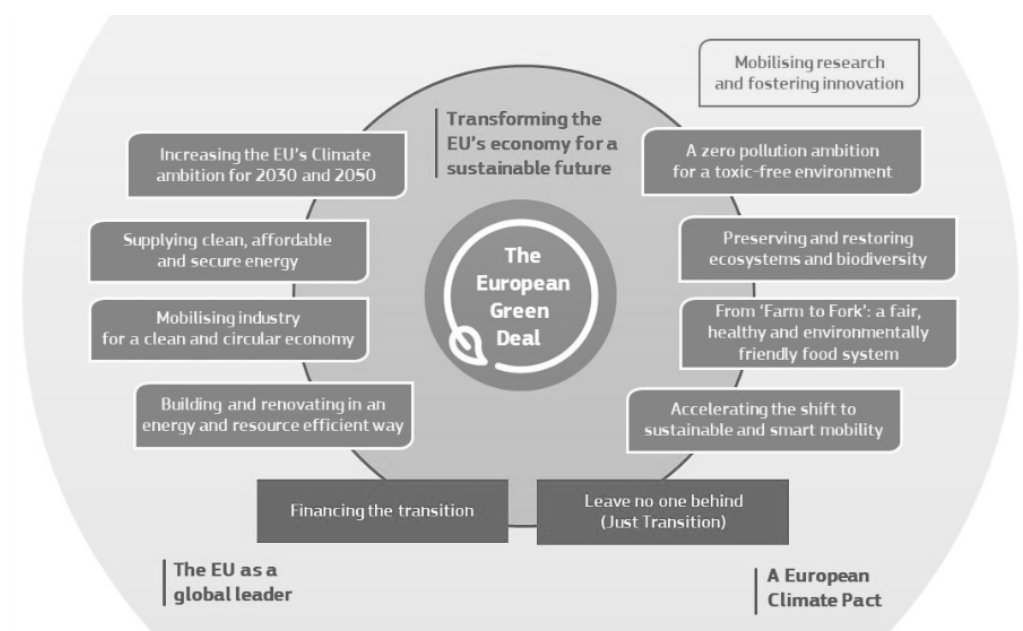


Figure 84. European Green Deal – an action program of the European Union that includes an ambitious plan to transition Europe to a climate-neutral continent by 2050.

Source: Communication from the Commission “The European Green Deal”. Brussels, 11.12.2019. URL : <https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52019DC0640>

The program envisions transformational changes in nine areas: climate, energy, industrial strategy for a circular economy, sustainable and smart mobility, green agricultural policy,

biodiversity preservation, zero pollution, financial instruments, and the European Union as a global leader. Essentially, it is a roadmap for the socio-economic development of the European Union, meaning that Ukraine, to maintain and enhance its competitive advantages, must accordingly align its strategic priorities.

The main message of the program is to eliminate greenhouse gas emissions by 2050 and achieve economic growth with minimal resource use.

By 2030, the EU plans to achieve the following key targets:

- reduce EU greenhouse gas emissions by 50% (a 55% reduction compared to 1990 levels);
- allocate 30% of the EU investment fund to combat climate change;
- install 1 million public charging stations for electric vehicles by 2025;
- reduce greenhouse gas emissions from the transportation sector by 90%⁸³.

The “Green Deal” primarily aims to protect, preserve, and enhance natural capital, as well as to protect the health and well-being of citizens from environmental risks and impacts (see Figure 85).

⁸³ The European Green Deal sets out how to make Europe the first climate-neutral continent by 2050, boosting the economy, improving people's health and quality of life, caring for nature, and leaving no one behind. Official site of European Commission. URL : https://ec.europa.eu/commission/presscorner/detail/e%20n/ip_19_6691

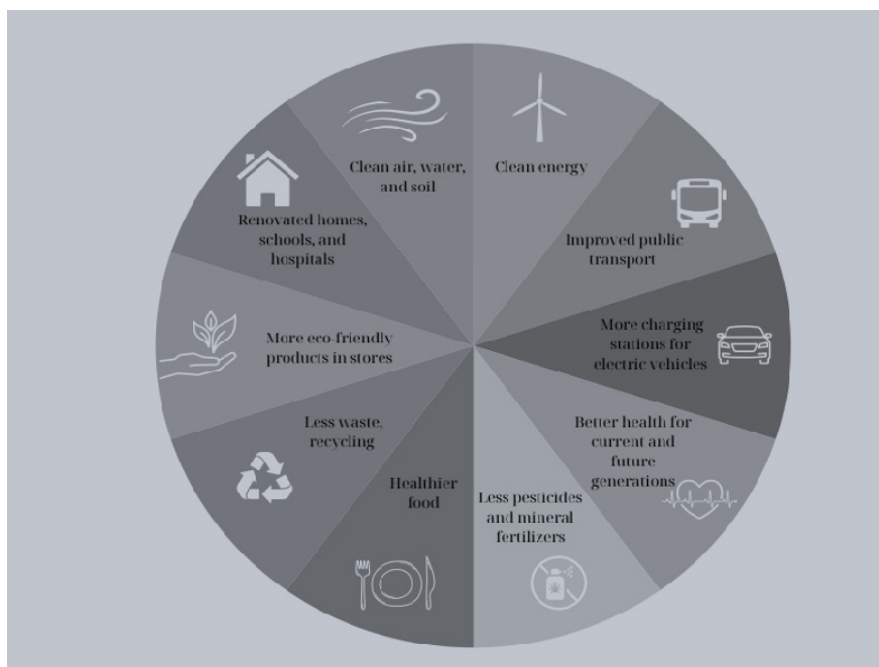


Figure 85. European Green Deal – Positive Impact on People's Lives

Source: Krynys'tkyy, K., Sakalyuk, D., Luk'yanyk, M., Savyts'kyy, O., Luk'yanova, M., Usenko, YU., Kysil', O., Konechenkov, A., Karpenko, O., Berni, SH. (2024) Rishennya dlya «zelenoho» enerhetychnoho vidnovlennya hromad: ekspertni dumky. [Solutions for green community energy recovery: expert opinion.] Putivnyk dlya orhaniv mistsevoho samovryaduvannya i orhanizatsiy, yaki pratsyuyut' nad vidnovlenniam Ukrainy vnaslidok viys'kovoyi ahresiyi rosiyi. Kyiv. HO Greenpeace. 154 p. URL : <https://www.greenpeace.org/static/planet4-ukraine-stateless/2024/09/010c4f53-Путівник-зелених-рішень-великий.pdf>

As part of the “Green Deal”, the “From Farm to Fork” (2FTF) strategy has been developed, which includes the following provisions⁸⁴:

⁸⁴ From farm to fork strategy (F2F). URL : https://www.undp.org/sites/g/files/zskgke326/files/2022-08/3%20Tree%20From%20Farm%20to%20Fork%20Strategy%203%20final_297x210mm_4%2B4_web_180822.pdf

- Revision of the EU Common Agricultural Policy (CAP), particularly the subsidy system for agricultural production;
 - Setting aside 10% of EU agricultural land from cultivation;
 - Reducing the use of mineral fertilizers and pesticides by 20%;
 - Increasing the share of organic farming (minimum target of 25%);
 - Reducing the use of antibiotics and other antimicrobial agents by 50% (to combat microbial resistance);
 - Encouraging farmers to use biological plant protection products;
 - Allocating an additional €1 billion by the European Commission to fund research aligned with climate priorities;
 - Ensuring a decent livelihood for farmers;
 - Providing Europeans with nutritious, affordable, and safe food;
 - Preserving rural areas and investing in their future.
- In this context, it is worth noting that under the “From Farm to Fork” strategy, the European Commission aims to ensure that at least 25% of EU agricultural land is dedicated to organic farming by 2030. However, since arable land in the EU is already allocated, achieving this target will be challenging for Europeans. Ukrainian agricultural producers are in a better position than other countries to expand their access to the organic agricultural market.

- The European Commission is allocating an additional €1 billion to fund research in line with climate policy priorities. In practice, this means that our researchers can apply for grants to conduct training programs for agricultural company personnel on implementing quality agricultural production methods or to fund research.

- This is an ambitious strategy, and Ukraine, which is undoubtedly part of the European community, should view the Green Deal as a roadmap for its strategic development.

- This requires not only the development of programs to implement environmental policies but also emphasizes the necessity of collaboration between the European Union and Ukraine in legislation. Furthermore, changes in technical regulations, production standards, climate norms, environmental rules, and conditions for market access to the EU should be aimed at effectively implementing the new socio-ecological-economic paradigm of management. Since Ukraine is part of the European continent and an active participant in trade relations with the EU, it obliges Ukraine to join Europe's Green Deal.

The Government of Ukraine is focused on shaping state policy that addresses today's environmental and climate challenges. In particular, the following important regulatory acts have been adopted to advance the practical implementation of the Green Deal:

- Concept of the “Green” Energy Transition of Ukraine until 2050 (“Ukraine Green Deal”)⁸⁵.

- Resolution of the Cabinet of Ministers of Ukraine dated January 24, 2020, No. 33 “On the establishment of an interdepartmental working group for coordinating efforts to combat the effects of climate change within the framework of the European Commission's “European Green Deal' initiative”⁸⁶

- Resolution of the Cabinet of Ministers of Ukraine dated March 24, 2021, No. 265 “On the establishment of a working group to harmonize approaches to applying the carbon border adjustment mechanism to Ukraine and to conduct consultations with the European Commission”⁸⁷.

- Resolution of the Cabinet of Ministers of Ukraine dated March 3, 2021, No. 179 “On the approval of the National Economic Strategy for the period up to 2030”⁸⁸.

Organic production could become a key tool for Ukraine in implementing the European Green Deal. According to monitoring

⁸⁵ Presentation of the draft of the Concept of the “green” energy transition of Ukraine by 2050. 2020. Ministry of Energy and Environmental Protection of Ukraine. URL : <https://www.kmu.gov.ua/news/prezentovano-proekt-koncepciyi-zelenogo-energetichnogo-perehodu-ukrayini-do-2050-roku>

⁸⁶ Resolution of the CMU “On the formation of an interdepartmental working group on coordination issues of overcoming the consequences of climate change within the framework of the European Commission initiative “European Green Course” dated January 24, 2020 No. 33. URL : <https://zakon.rada.gov.ua/laws/show/33-2020-n#Text>

⁸⁷ Resolution of the CMU “On the formation of a working group to agree on an approach to the application of the border carbon adjustment mechanism to Ukraine for consultations with the European Commission” dated March 24, 2021. No. 265. URL : <https://zakon.rada.gov.ua/laws/show/265-2021-%D0%BF#Text>

⁸⁸ Resolution of the CMU “On approval of the National Economic Strategy for the period until 2030” dated March 3, 2021. No. 179. URL : <https://zakon.rada.gov.ua/laws/show/179-2021-%D0%BF#Text>

data from the Ministry of Economy in 2020, the total area of organic land reached 468,000 hectares (1.1% of the total agricultural land in Ukraine) in 2019, a 20% increase from 2018. At that time, there were 617 operators in the organic market, including 470 agricultural producers⁸⁹. In 2021, Ukraine ranked 5th globally among 126 countries for the volume of organic exports to the EU, with a 6.6% market share. The total area of agricultural land with organic status in Ukraine was 370,000 hectares. Approximately 12% of Ukraine's organic products were exported to Switzerland and just over 10% to the USA, with another 6% exported to other countries, including Asia and Africa. According to the Swiss Research Institute of Organic Agriculture (FiBL), Ukraine ranked 21st globally and 13th in Europe in terms of organic agricultural land area in 2020⁹⁰.

The dynamic development of Ukraine's organic market is supported by its territory, geographical location, proximity to potential international buyers, and fertile black soil. The largest consumers of Ukrainian organic products are the Netherlands, USA, Germany, Lithuania, Austria, the United Kingdom, Poland, Canada, Italy, and Switzerland. Ukrainian producers also export to Australia and some Asian countries, including China, Vietnam, India, and Japan. The main export products are grains, oilseeds, honey, eggs,

⁸⁹ Organic production in Ukraine. 2021. Office of Food Safety and Veterinary Medicine. URL : <https://dp.dpss.gov.ua/news/organichne-virobnictvo-v-ukrayini>

⁹⁰ Ukraine is among the top five exporters of organic products to the EU, - Taras Vysotskyi. 2022. Ministry of Agrarian Policy and Food of Ukraine. URL : <https://www.kmu.gov.ua/news/ukrayina-vhodit-do-pyatirki-lideriv-eksporteriv-organichnoyi-produkciji-do-yes-taras-visockij>

vegetables, and fruits, as well as sunflower meal, flour, sunflower oil, and apple concentrate. However, the war has currently disrupted these advantageous prospects.

The European Green Deal offers Ukraine new opportunities for collaboration with developed countries, providing avenues for economic development and strengthening its position in international relations. This can be achieved by increasing net income from business activities through energy and resource savings.

For example, official data indicate a 50% reduction in CO₂ emissions from agriculture between 1990 and 2019. However, it is worth noting that the reduction in greenhouse gas emissions in Ukraine is primarily due to reduced production, falling incomes, a lack of a stable investment climate, unstable government policy, and lost markets. In reality, the Ukrainian economy remains quite energy-intensive, and when considering the sale of environmental certificates as a leading investment tool, it is essential to understand its implementation algorithm.

When analyzing this development direction, one should also consider the potential risks and threats for Ukrainian agricultural exporters, such as:

- Restrictions on Ukrainian goods accessing EU markets and new non-tariff trade barriers, which currently pose a key threat.
- High requirements for food products and adherence to environmental standards in their production could hinder further export of Ukrainian agricultural products to the EU market.

- Reduction in chemical pesticide use in the agricultural sector by 50% by 2030. This will affect agricultural imports, posing a risk of trade barriers and increasing requirements for residual levels of chemical agents in plant-based products.

- Stricter requirements for the European livestock sector. Agriculture in the EU accounts for 11% of greenhouse gas emissions, with 50% of those emissions coming from livestock. This sector may face legislative restrictions due to the need to reduce carbon emissions, potentially including monitoring the production and distribution of soy-based feed additives in the EU market.

- The issue of increased resistance of harmful microorganisms due to improper antibiotic use in animal breeding and meat production. Within this framework, the EU will require agricultural producers to reduce antibiotic use in livestock by 50% by 2030, which includes strengthening controls over residual antibiotic levels in meat products.

Additional potential risks and threats to Ukraine's agricultural sector include:

- Lack of clear timelines for the adoption of relevant acts by the European Commission;

- Certification of carbon removal: Farms and agricultural companies will be assessed based on the technologies they use to limit carbon emissions. However, the methodology for reducing emissions is still unknown;

- New requirements for food labeling, which will create an additional administrative barrier;
- Introduction of a deforestation criterion, assessing the extent to which a product (e.g., rapeseed, corn, or animal products) contributes to deforestation, destruction of river floodplains, or other ecosystems critical for reducing carbon emissions;
- CO₂ emissions reduction requirements: This does not necessarily mean emissions are directly related to agricultural production. It is still unclear, but it is assumed that this carbon tax may take the form of additional direct costs or some cumulative mechanism. For instance, if a significant portion of production costs come from fossil fuel-generated electricity, such products (in theory) could be subject to a tax;
- Proposal to introduce import duties to equalize the carbon footprint of goods: This could impact the functioning of the WTO (World Trade Organization) and bring the European approach to a global level, integrating it into the world trade system. Relevant political consultations may begin next year, following the final formulation and adoption of the European Green Deal.

One of the tools in this new climate policy is the introduction of the Carbon Border Adjustment Mechanism (CBAM). Essentially, this is a carbon tax that the EU plans to impose on imports from countries that do not place sufficient emphasis on reducing greenhouse gas emissions.

The agricultural sector is a leader in Ukraine's economy, occupying a key position in the model for implementing the European Green Deal. The main tools of this model include: opening the land market; modernizing systems for reconfiguration; increasing state support for agricultural producers (particularly organic and environmentally-friendly ones); reducing emissions; introducing minimum tillage technologies; using slow- or controlled-release fertilizers or nitrification inhibitors; reducing greenhouse gas emissions from livestock by improving feed; and establishing a market for environmental certificates. Reliable carbon pricing is a key investment tool that can dynamically increase funding for environmental technologies, significantly enhancing energy efficiency.

For Ukraine, the EU is a crucial trading partner for both conventional and organic products. Expanding organic production has significant potential for growing markets for Ukrainian products.

Stricter requirements for agricultural and food products present an additional trade barrier that could negatively impact Ukrainian exports.

The cost of products grown according to organic standards is higher than that of conventional products.

Broader adoption of minimum tillage technologies may lead to lower yields, and in organic farming, a transitional period of up to a year may be required.

To fully leverage the opportunities and benefits of EU policies in the agricultural sector and beyond, it is essential to consider the conditions of the European Green Deal, which pose certain challenges for Ukrainian producers and exporters.

3.4. Financing of Ukrainian Environmental Policy and benefits of its implementation on enterprise level (example of Green Deal practices)

To achieve a decent level of inclusive development and become a full member of European Union it is necessary to develop the environmental policy of our country, as the implementation of the Green Deal is an important component of this policy. Government funding of this policy is of great importance. In the table 17 we present expenditures on environmental protection in Ukraine from different budgets during 2010-2022.

Figure 86 presents the general changes in financing of environmental protection during 2010-2022 from different budgets.

As we can see, deductions for environmental protection changed every year: there was as an increase, as well as decrease in different years. A fairly noticeable decline was observed in 2014, when military actions began in our country. After that, there was an increase in deductions up to and including 2021 (except for local budgets).

Table 17. Environmental protection expenditures in Ukraine

Year	Local budgets, MM UAH		State budget, MM UAH		Consolidated budget, MM UAH	
	Total, MM UAH	Per Capita, UAH	Total, MM UAH	Per Capita, UAH	Total, MM UAH	Per Capita, UAH
2010	580	13	2293	50	2872	62
2011	882	19	3008	66	3891	85
2012	1163	25	4135	91	5298	116
2013	999	22	4595	101	5594	123
2014	885	19	2597	57	3482	77
2015	1477	34	4053	95	5530	129
2016	1484	35	4772	112	6255	147
2017	2609	61	4740	112	7349	173
2018	3001	71	5241	124	8242	195
2019	3414	81	6316	151	9730	232
2020	3777	90	7433	178	11211	268
2021	3266	78	9299	223	12565	301
2022	513	14	4714	131	5227	145

Source: Expenditure. URL : <http://old.cost.ua/en/budget/expenditure/>

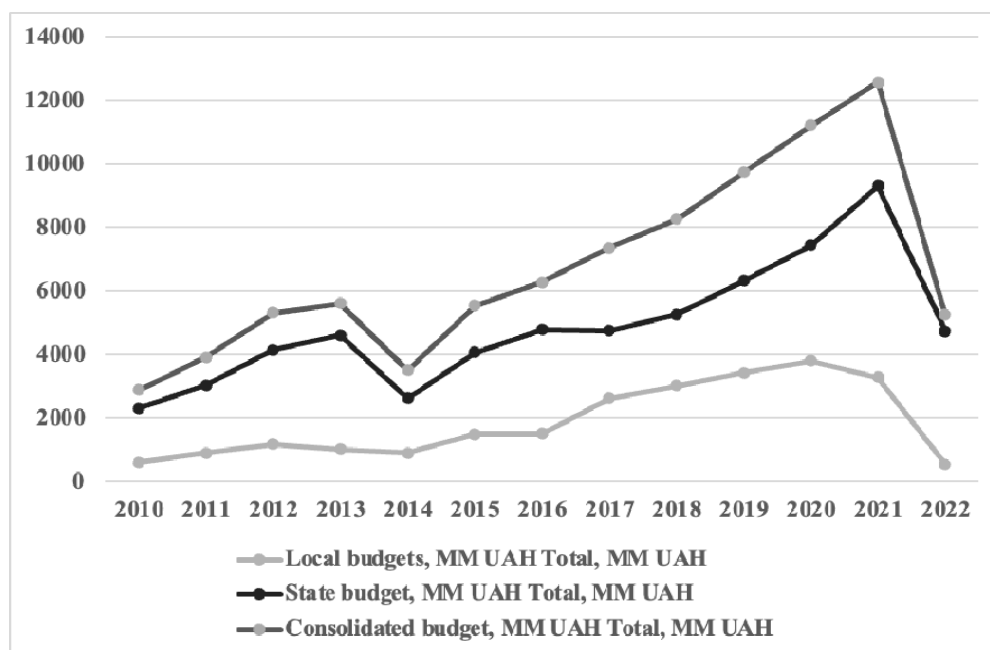


Figure 86. Environmental protection expenditures in Ukraine, 2010-2022

Source: compiled by the authors based on Expenditure. URL : <http://old.cost.ua/en/budget/expenditure/>

In 2022 indicators of environmental protection funding from all budgets have undergone changes, which is fully justified taking into account the change in the security situation. Thus, the consolidated budget was reduced by UAH 7,338 million. Expenditures per capita in 2022 from the consolidated budget decreased by more than 50%, and from local budgets the decrease is noted at the level of more than 80%, namely by 82.1%⁹¹. It is worth noting that most deductions are realized from the state budget than from local budgets.

In the table 18 we perform data on expenditures on environmental protection by functional classification during period of 2015-2024.

Table 18. Expenditures on environmental protection by functional classification

Year	Prevention and elimination of environmental pollution		Preservation of the nature reserve fund		Fundamental and practical research and developments in the field of environmental protection		Other activities in the field of environmental protection	
	State	Local	State	Local	State	Local	State	Local
2015	3331,5	963,6	53,9	59,5	81,3	-	586,2	453,6
2016	4054,8	1179,8	209,6	49,7	84,8	-	422,5	254,4
2017	3651,1	1813,6	361,6	66,6	104,3	-	622,8	729,0
2018	3660,8	1519,4	420,0	39,1	130,4	-	1029,9	1442,2
2019	4774,1	1559,3	501,6	52,3	197,4	-	842,9	1801,7
2020	5416,0	1091,9	549,7	64,7	167,5	-	503,5	1263,1

⁹¹ Labenko, O., Sadauskis, A., Lymar, V. (2024) The Efficiency of Financing Environmental Protection Measures in the Context of Ukraine's Future Membership in the EU. *Sustainability*, 16, 6090. <https://doi.org/10.3390/su16146090>

2021	6616,0	1062,9	837,9	100,6	121,0	-	625,1	1256,7
2022	3143,8	184,7	857,8	56,4	202,0	-	510,3	271,3
2023	3711,4	327,8	872,0	56,4	111,0	-	508,0	809,2
2024*	4641,0	82,5	766,8	45,3	83,4	-	615,8	194,1

* For 2024, data is provided for the period January-September

Source: compiled by the authors based on Labenko, O., Sadauskis, A., Lymar, V. (2024) The Efficiency of Financing Environmental Protection Measures in the Context of Ukraine's Future Membership in the EU. *Sustainability*, 16, 6090. <https://doi.org/10.3390/su16146090>; Expenditure. URL : <https://openbudget.gov.ua/national-budget/expenses?class=functional&view=table>

As we can see from the Table 18, the largest part of environmental protection costs is deducted from the state budget on prevention and elimination of environmental pollution. The amount of spending on this item varies each year and increased significantly in 2024, compared to the previous year. But, at the same time, the amount of funding has not reached the level of 2021. We should draw attention that there are no deductions from the local budget for the article “fundamental and practical research and development in the field of environmental protection”. Local budgets finance the most in 2022-2024. the article “Other activities in the field of environmental protection”.

To develop our research, we will provide analysis of Ukrainian agricultural benefits from providing the Green Deal program. In the previous researches of the author ⁹² it was deeply

⁹² Labenko, O., Sobchenko, T., Hutsol, T., Cupiał, M., Mudryk, K., Kocira, A., Pavlenko-Didur, K., Klymenko, O., Neuberger, P. (2022) Project Environment and Outlook within the Scope of Technologically Integrated European Green Deal in EU and Ukraine. *Sustainability*, 14, 8759. <https://doi.org/10.3390/su14148759>

investigated value of the Green Deal for Ukraine and the EU in particular.

In the modern conditions of the development of the world community, when taking into consideration the environmental, innovative, climatic changes that are taking place becomes mandatory, society has come to understand the necessity to preserve natural resources by managing the process of their use. In response to this, various trends and programs began to appear, one of which was the EU Green Deal program. It is difficult to overestimate the importance of Green Deal for the agricultural sector of Ukraine and its development within the sustainable development paradigm.

As already mentioned in the author's previous works, climate change and green transformations are currently becoming a matter of Ukraine's national security and provide an opportunity to become a full member of the European Community. This requires not only implementation of environmental policy programs, but also legislative cooperation between the European Union and Ukraine. The main legislative initiatives were considered above by the authors of this study.

In addition to the mentioned task of the Green Deal - the formation of a climate-neutral continent, the rejection of net greenhouse gas emissions by 2050, but also the provision of economic growth with minimal use of available resources. The implementation of this agreement provides opportunities for agricultural producers to develop new business models, to

implement innovative projects that will allow them to achieve the goal of the Green Deal. For Ukrainians, this is currently quite difficult, because the introduction of new technologies or the implementation of new business processes require additional economic investments. Under the condition of a full-scale war, this can be even more problematic than in normal conditions, but the transition to new production, cultivation, management of the enterprise is no longer just a whim of large foreign enterprises, but a necessity for domestic SME as well.

We can present expected benefits for agricultural producers in case of introduction of modern technologies in their production activity (table 19).

The table 19 shows that direct sowing is the most profitable in terms of agronomic and economic advantages: compared to the conventional system, cost savings equal to 70% and time savings reach 80%; compared to the minimum, cost saving is 55%, and time saving is 60%⁹². This is a rather significant and demonstrative result of positive economic changes due to the use of new technologies in one's activities.

The Green Deal creates the foundations for the inclusive economic, social and environmental development of our country, as the transition involves obtaining not only economic benefits, but also building a society focused on saving resources, safe production, improving the environment through the achievement of climate neutrality, etc. Thus, the implementation of this program develops

the inclusion of all interested groups in the process and the results of its implementation. This is of particular relevance in the context of Ukraine's European integration process.

Table 19. Comparative assessment of the benefits of using ecological production technologies by Ukrainian farmers

Machinery	EUR/ha	Ha/Std	Std/ha	CO ₂ /Gr/m ²
Normal tillage				
	25	1,5	0,6	60
Plow	60	0,8	1,25	81
Harrow	37	1,2	0,8	27
Seeder	30	3	0,3	6
Rolling/weeding	9	4	0,25	
Result	161	x	3,2	174
Minimal tillage				
Cultivator	25	2	0,5	168 g/m ² CO ₂ remain. This corresponds to 1,68 tons of CO ₂ per ha/year, which generates income for the farmer through certificates on the stock exchange (as of 2022 50,00 EUR/ha)
Harrow	37	2	0,5	
Seeder	30	3	0,3	
Rolling/weeding	9	4	0,3	
Spray	14	7,5	0,13	
Result	115	x	1,73	
Direct sowing				
Spray	14	7,5	0,13	-
Seeder	30	3	0,3	6
Rolling/weeding	9	4	0,25	-
Result	53	x	0,68	6

Source: Labenko, O., Sobchenko, T., Hutsol, T., Cupiał, M., Mudryk, K., Kocira, A., Pavlenko-Didur, K., Klymenko, O., Neuberger, P. (2022) Project Environment and Outlook within the Scope of Technologically Integrated European Green Deal in EU and Ukraine. *Sustainability*, 14, 8759. <https://doi.org/10.3390/su14148759>

In general, it is worth noting that the implementation of EU programs in Ukraine, including Green Deal, will allow us to bring the level of development of our state closer to the EU member states and become a full member of the community. The implementation of environmental protection measures by the state, the introduction of new modern cultivation and production technologies by enterprises will allow meet not only agronomic and economic benefits, but also to build a strong inclusive environment, which is oriented to take into consideration the needs of all segments of the population and the natural potential of the country.

3.5. Social and youth entrepreneurship: the concept of inclusive development

In the current context of globalisation and rapid socio-economic change, the issue of inclusive development is of paramount importance for achieving equity, reducing inequality and ensuring equal opportunities for all citizens. Social and youth entrepreneurship have become important tools for addressing social problems and engaging young people in active participation in the development of society. These forms of entrepreneurship allow for the implementation of innovative ideas aimed at improving social conditions and creating new opportunities for vulnerable groups, including youth, people with limited opportunities and communities in difficult socio-economic conditions.

An inclusive economy involves creating economic conditions in which everyone has equal opportunities to participate in socio-economic processes, regardless of their social status, age, gender or other factors that may lead to social discrimination. Social business acts as a tool for inclusive development, as it combines economic goals with social ones. A characteristic feature of social entrepreneurship is that it aims to create economic value by solving social problems. The main goal of social entrepreneurship is not only to make a profit, but also to provide access to economic opportunities for socially vulnerable groups, such as young people, people with disabilities, migrants, representatives of ethnic minorities, etc. The definition of “social entrepreneurship” was first mentioned in 1972 in *The Sociology of Social Movements*, and later developed by American entrepreneur Bill Drayton⁹³, founder of the non-profit foundation Ashoka: Innovations for Society. The essential features of social entrepreneurship should be understood as entrepreneurial activity to create social value on the one hand, and wealth creation and profit generation on the other hand. However, social enterprises are fundamentally different from traditional non-profit or charitable institutions. Social enterprises focus on innovative approaches to solving social problems, pursue financial autonomy and independence from the state, set clear performance

⁹³ Ashoka: Innovators for the Public (annual report 2013). URL: <https://www.ashoka.org/sites/www.ashoka.org/files/2013-Impact-Study-FINAL-web.pdf>

goals, and apply proven management skills to ensure the effectiveness of their activities.

The realities of economic life show that more and more social entrepreneurs are being recognised in different countries, and this concept is spreading around the world, especially among young people⁹⁴. It is worth noting that social entrepreneurship is an integral part of the European Union's socio-economic policy. This is evidenced by the following facts, in particular, as of the beginning of 2020, about 13.6 million Europeans were employed in social enterprises in Europe, which is evidence of the positive impact of social entrepreneurship on the economy and society as a whole⁹⁵.

Summarising the theoretical and analytical works of researchers, the main areas of activity of social enterprises in the EU countries should be highlighted (fig. 87).

Social entrepreneurs have high demands on the ratio of economic and social efficiency, solve social problems on their own and are more responsible in the context of social justice. This form of entrepreneurship aims to achieve the goals of inclusive economic development by creating new jobs and providing access to resources that may not be available in the traditional economic system. Thus,

⁹⁴ Schoof, U. (2006). Stimulating Youth Entrepreneurship and incentives to enterprise start-ups by young people. International Labour Office, Geneva.

URL:https://www.ilo.org/sites/default/files/wcmsp5/groups/public/%40ed_emp/%40emp_ent/documents/publication/wcms_094025.pdf

⁹⁵ Social enterprises and their ecosystems in Europe. Comparative synthesis report. Authors: Carlo Borzaga, Giulia Galera, Barbara Franchini, Stefania Chiomento, Rocío Nogales and Chiara Carini. Luxembourg: Publications Office of the European Union. 2020.

URL:https://base.socioeco.org/docs/social_enterprises_and_their_ecosystems_in_europe._comparative_synthesis_report.pdf

inclusiveness in this context is understood as the active integration of different social groups into economic processes, ensuring equal access to labour markets, resources and opportunities, and creating conditions for sustainable development of society.



Figure 87. Areas of activity of social enterprises in the EU countries

Source: compiled by the author

The most common types of social entrepreneurship in the European Union are the following: social cooperatives, firms with a social mission, firms employing vulnerable groups, inclusive business incubators, firms in the field of education and rehabilitation, and social and environmental social enterprises (fig. 88).



Figure 88. Types of social entrepreneurship in EU countries

Source: compiled by the author

In today's world, the cooperative form covers more than 12% of the world's population. About 40% of the world's inhabitants use the results of the work of cooperative economic, cultural and educational institutions. The most mature and effective forms of co-operation have developed in Europe, where credit, agricultural, consumer, housing and mixed co-operative societies exist. They unite members who jointly own and manage an enterprise on a democratic basis. The profits of cooperatives are usually distributed

among members or reinvested in the development of the enterprise. For example, Mondragon Corporation in Spain is one of the largest cooperatives in the world. The corporation has 256 companies and employs more than 75,000 people⁹⁶. Mondragon's cooperatives operate under a business model based on the interests of the people and the sovereignty of labour, which have made it possible to create cohesive companies based on solidarity and a strong social dimension. Co-operatives are owned by worker-shareholders, where power is based on the principle of «one person, one vote».

Social cooperatives are one of the oldest forms of social entrepreneurship. In this form of business organisation, employees and clients are both participants in the management. They focus on providing jobs and services for vulnerable groups, such as people with disabilities, the unemployed or migrants. An example is the social cooperatives in Italy, which play a key role in the integration of people with disabilities into society. In 1973, in the city of Trieste, in the north-east of Italy, a hospital was disbanded, where patients received the necessary medical care and assistance. Subsequently, a working cooperative was established to provide assistance to these patients and to provide cleaning services for the city's public buildings. In 1985, its members numbered 130. By 1994, the annual income of similar cooperatives in Trieste had

⁹⁶ RME ANUAL. UN COMPROMISO CONSCIENTE DE COOPERAR Y DE PROGRESAR EN COMÚN. <https://www.mondragon-corporation.com/>

grown to USD 5 million, and in 2004 it was USD 14 million⁹⁷. In parallel with the strengthening of the economic position of social cooperatives, the fundamental principles of their social activities and inclusive development were being established: from one third to one half of their jobs are provided to people with disabilities, who have mental and physical disabilities that prevent them from being employed by conventional firms. Social co-operatives do not discriminate in remuneration, which is determined by the average market rate. The business is focused on self-sufficiency.

In our opinion, social cooperatives have significant development potential in the agri-food sector of Ukraine, especially in the context of promoting inclusive rural development, improving food security and supporting vulnerable groups. In particular, support for small farmers and family farms in terms of joining forces to grow products together, purchase materials and equipment, and access to the market. This will reduce costs, improve product quality and increase competitiveness.

In wartime and post-war reconstruction of Ukraine, social cooperatives have the potential to create new jobs for veterans and internally displaced persons interested in agriculture. Cooperatives can also help them overcome post-traumatic stress disorder, social integration through training, new skills development and employment in the agricultural business.

⁹⁷ Warner R., Mandiberg J. (2006) An Update on Affirmative Businesses or Social Firms for People With Mental Illness. *Psychiatric services*. Vol. 57, № 10. Pp. 1488-1492

It is critical to emphasise that the inclusion of ex-military personnel in the socio-economic space requires physical, emotional, mental and spiritual health. To be fully engaged in economic life, former military personnel need to be emotionally and physically healthy. Emotional health is key to successful social adaptation of former military personnel, and emotional well-being helps them to establish and maintain healthy interpersonal relationships, both in their professional and personal lives⁹⁸. In order to successfully transition from a military to a civilian role, veterans need to be psychologically prepared to take on new roles in society and at work. Social support and teamwork can help them cope with life's challenges and losses, which is important for long-term well-being.

Social cooperatives can also actively promote organic and environmentally friendly farming methods. For example, by reducing the use of pesticides or growing local and biodiverse crops. Co-operatives can provide local communities with fresh produce and organise small-scale processing businesses (e.g. milk processing, jam making, dried fruit and vegetables). As a result, this can be an important step towards increasing the added value of products and community income, and will contribute not only to environmental protection, but also to improving product quality and creating a green economy in the context of sustainable development.

⁹⁸ Shynkaruk, L.V., Prushkivs'ka, E.V., Shepelyeva, L.M. (2024) Inklyuziya viys'kovykh u natsional'nyy sotsial'no – ekonomichnyy prostir. [Inclusion of the military in the national socio-economic space.] *Ekonomichnyy visnyk Dniprovs'koyi politekhniki*. № 2. (86). Pp. 21-31. <https://doi.org/10.33271/ebdut/86.021> (in Ukrainian)

Overall, social cooperatives in Ukraine's agri-food sector have the potential to become an important driver of socio-economic development, inclusion of vulnerable groups and environmental sustainability. They not only help small producers to compete in the market, but also promote social cohesion and provide communities with a stable source of income, which is important in today's changing economic and political environment.

Inclusive business incubators, as a type of social enterprise, are most common in countries such as France and the UK. These organisations support the development of new social enterprises by providing them with resources, mentoring and market access. Inclusive incubators promote entrepreneurship among women, migrants and other marginalised groups. Such inclusive firms create an environment for innovative start-ups with an inclusive mission.

In 2013, Simplon.co, the first social incubator, was founded in France. The company specialises in training people from vulnerable social groups in digital technologies. The goal of Simplon.co is to provide equal opportunities for all those interested in technological development and entrepreneurship⁹⁹. They offer classes on programming, web application development and artificial intelligence for members of groups that have difficulty finding employment. In 2014, the incubator won one of the City of Paris' innovation awards. The company develops a hybrid economic

⁹⁹ Véronique Arène, « Simplon partage son modèle d'école solidaire du numérique » Accès libre, sur Le Monde informatique, 15 octobre 2020 <https://plaidoyer.simplon.co/>

model and offers tools that allow organisations to deliver their training courses locally and internationally. In this context, Ukraine should learn from this experience of inclusive business incubators. Such firms are similar to Simplon.co in France and could be very useful in both the agricultural and other sectors of Ukraine.

By encouraging veterans, internally displaced persons and other vulnerable groups to become entrepreneurs, incubators can help them acquire new knowledge of organic and ecological farming, animal husbandry or the cultivation of rare crops. Social incubators can also provide grants or loans for farm development, which will help integrate these groups into communities and provide additional income. It should be emphasised that in many regions of the national economy there is no infrastructure for processing products, so farmers are forced to sell them at low prices. Incubators for local processing of agricultural products can help participants launch local processing businesses. For example, the production of dried fruit, mushrooms, vegetables, juices, oil, and flour. This will increase the added value of products and increase farmers' incomes. The popularity of organic products and agritourism is growing rapidly in Ukraine. In this context, incubators can train entrepreneurs in organic farming and the organisation of agritourism projects, such as eco-farms and ethno-estates. As a result, this will attract additional investment in rural areas, create new jobs, and contribute to the preservation of natural resources, which are the foundations of inclusive development.

Green social enterprises are businesses that operate at the intersection of social inclusion and environmental sustainability. These businesses deal with issues such as waste recycling, renewable energy, and supporting environmentally sustainable solutions, while also providing employment for disadvantaged groups. Examples include social enterprises for waste recycling in Belgium and the Netherlands. Social waste recycling enterprises in these countries have already achieved significant results by integrating innovative solutions, engaging the community and creating environmental value through social business. This experience can be useful for Ukraine, as the problem of waste disposal and recycling remains extremely relevant.

Ukrainian cities need social enterprises for waste collection and recycling, which could function as cooperatives or enterprises with a social mission. This will not only provide jobs, but also help reduce the amount of waste in landfills. In particular, projects could be launched to recycle plastic into useful products, such as materials for construction or public space improvement. Small towns and villages lack effective waste management systems, which creates a huge potential for the development of social enterprises. For example, social co-operatives could be set up to collect organic waste and process it into compost for local farmers, or businesses could be set up to produce biogas from waste. Business ideas can be implemented in the national economy by finding new ways to use waste to produce goods. This could include growing mushrooms

from coffee grounds, making furniture from old textiles, using glass for building materials, etc. With this approach, environmental social enterprises will not only develop the circular economy, but will also integrate environmental initiatives into public business.

Education and rehabilitation firms are social enterprises that provide educational and rehabilitation services for people with disabilities, migrants or other socially disadvantaged groups. They offer training, professional development courses and social reintegration programmes. The most successful example of the effectiveness of these enterprises comes from Poland. These firms in Poland specialise in the rehabilitation and adaptation of people with disabilities to working life. In Ukraine, the development of this type of social enterprise in the field of education and rehabilitation can play a key role in supporting vulnerable groups such as children, youth, veterans, internally displaced persons and persons with disabilities affected by the war. Given the grave consequences of the war, the areas of development of these firms, in our opinion, could include innovative education and training programmes for children deprived of normal access to school, vocational training for young people, psychological support and rehabilitation for veterans, centres to support families of the dead and wounded, and social entrepreneurship courses.

Social firms in the education and rehabilitation sector in Ukraine can become a source of stability, psychosocial support and adaptation assistance in the war and post-war period, contributing to

the reconstruction of the country's social sector and the creation of an inclusive and stable environment for all social groups.

It is important to emphasise that any business needs support, especially social enterprises. Support for social entrepreneurship can be characterised by the development of favourable policies, as well as framework conditions and legislation for the functioning and development of social entrepreneurship. In the European Union, social entrepreneurship is supported through funding programmes, in particular the EU's Employment and Social Innovation (EaSI) programme. This programme is aimed at supporting social entrepreneurs and stimulating the creation of new social enterprises. In the EU, social entrepreneurship is regulated at both national and European levels. Countries such as France, Italy and Spain have legislation that regulates the activities of social enterprises and provides them with tax benefits.

Based on the above, social entrepreneurship in the EU is an important tool for addressing a number of social challenges, such as unemployment, social inequality and environmental issues. This form of entrepreneurship contributes to economic growth and inclusiveness, while providing sustainable solutions for society.

For Ukraine, social entrepreneurship can also be a powerful tool for economic and social recovery, especially in the context of martial law and post-war recovery. The development of social enterprises will create new jobs for vulnerable groups, such as veterans, internally displaced persons and people with disabilities.

This will help reduce poverty, support the psychosocial health of citizens, and build an inclusive economy focused on long-term sustainability. At the same time, social entrepreneurship can offer innovative approaches to solving environmental problems and developing war-affected regions, attracting international investment and support, which will accelerate recovery and strengthen social stability in the country.

An inclusive economy aims to ensure equal access to resources and economic opportunities for all market participants, regardless of their social or economic circumstances. The combination of social and youth entrepreneurship within the national economy contributes to building a sustainable inclusive model that ensures economic growth, increases access to labour markets, promotes social inclusion and reduces inequality.

Inclusive economic models involve the use of social innovations aimed at addressing specific social problems, such as youth unemployment, social exclusion, and inequalities in access to education and resources. They ensure sustainable economic development by supporting youth initiatives that promote social inclusion and ensure equality of opportunity for all.

Youth is the foundation of the future of every nation and is an important driver of the overall development and progress of the state. In countries with a high level of population ageing and insufficient involvement of young people in the processes of national GDP production, many challenges arise that slow down

economic growth¹⁰⁰. That is why the development of youth entrepreneurship is becoming an urgent necessity and a critical factor in ensuring sustainable and inclusive economic development.

Youth entrepreneurship has an impact on various aspects of society, including social, cultural and economic progress. It creates opportunities for young people to engage in entrepreneurial activities, facilitating their integration into the economic system and increasing social mobility. The inclusiveness of youth entrepreneurship means creating equal conditions for all young people, regardless of their social or economic status, to implement their ideas and business projects.

Building a favourable environment for youth entrepreneurship requires the integration of multifaceted strategies at all levels of government. This includes public policies that support young entrepreneurs through financial instruments, educational programmes and the development of infrastructure for innovation. The industrial sector also has an important role to play in providing opportunities for cooperation between young entrepreneurs and large businesses by providing them with resources and knowledge. Political support and social initiatives are necessary to create policies that promote inclusive economic growth and address youth issues.

¹⁰⁰ Prushkivs'ka, E.V., Dvornik, M.O. (2021) Problemy molodizhnoyi zaynyatosti ta bezrobittya: hlobal'nyy ta natsional'nyy aspekt. [Youth Employment and Unemployment Issues: Global and National Aspects.] *Ekonomichnyy visnyk Dniprovs'koyi politekhniki*. № 4. (76). Pp. 18-25. (in Ukrainian)

If we analyse youth entrepreneurship from the perspective of stakeholders, they can be divided into four main groups. The main stakeholders of youth entrepreneurship include: the state, the social environment, the educational environment and the business environment or business community¹⁰¹.. Each of the selected groups includes several participants, as shown in Figure 89.

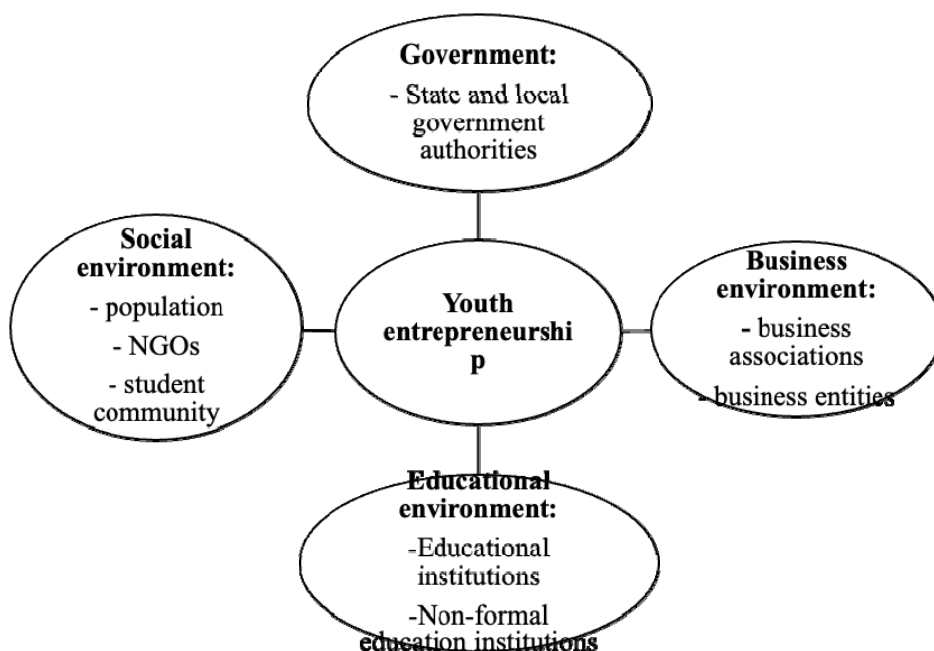


Figure 89. Stakeholders of youth entrepreneurship

Source: compiled by the author

The education sector plays a key role in shaping the future of young entrepreneurs by providing them with the necessary knowledge, skills and tools to run a successful business. Youth

¹⁰¹ Zhosan, G. V. (2020) Definition of youth entrepreneurship stakeholders. Barcelona: Integration of fundamental and applied sciences in the paradigm of post-industrial society. Vol. 1. Pp. 48-51

entrepreneurship programmes can help to avoid many social and economic problems, such as youth unemployment, while paving the way for a progressive, innovative society.

The scientific literature mainly identifies the following specific features of youth entrepreneurship: high innovation activity, mobility, flexibility, and risk-taking, which make it a special niche of entrepreneurial activity. Summarising the theoretical and methodological developments of national and foreign scholars, we formulate our own definition of youth entrepreneurship. We define youth entrepreneurship as a relatively independent category of business activity that involves certain achievements by young entrepreneurs who effectively combine available resources based on personal qualities and professional competencies, have competitive advantages in doing business, and possess modern hard and soft skills¹⁰². The interpretation of this category in this wording is most consistent with the methodological basis of constructing categories through elements, “content”, “essence”, “result”.

Youth entrepreneurship is at the stage of formation and requires further study, improvement of the conceptual and categorical apparatus, as well as clear legislative consolidation. In the light of inclusiveness, socially oriented youth entrepreneurship is becoming an important resource for the development of the state

¹⁰² Prushkivs'ka, E.V., Kovalenko, YE.V. (2023) Tendentsiyi rozvytku molodizhnoho pidpryyemnytstva v krayinakh YES ta Ukrayini. [Development trends of youth entrepreneurship in EU countries and Ukraine.] *Ekonomichnyy visnyk Dniprovs'koyi politekhniki*. № 1. (81). Pp. 164-171 <https://doi.org/10.33271/ebdut/81.164> (in Ukrainian)

and society, as it can significantly contribute to the elimination of youth unemployment by providing young people with opportunities for self-employment and job creation.

Youth entrepreneurship, like any economic phenomenon, has strengths and weaknesses. In our opinion, the positive aspects should be used and built upon, and the negative aspects should be transformed into advantages. For a modern employer, it is important for a potential employee to have soft skills and to improve their hard skills in line with the requirements of the times. Young people are the driving force that best meets these requirements.

In the context of the inclusiveness of youth entrepreneurship, it is important to take into account various factors of influence in the process of its development and functioning. Using the classical research tools, we distinguish between external and internal factors influencing the functioning of youth entrepreneurship. The external environment includes such elements as government policy, creditors, suppliers, and consumers¹⁰³, that can either facilitate or hinder the development of youth businesses. Instead, internal factors, such as management decisions of owners, managers and the contribution of employees, have a direct impact on the functioning of enterprises in terms of operations and development strategy. The influence of external and internal factors is demonstrated more clearly in Figure 90.

¹⁰³ Petrenko, V., Karnaushenko, A. (2017) Joint enterprises in foreign trade activity of Ukraine. *Baltic Journal of Economic Studies*. № 5. Pp. 203-207.

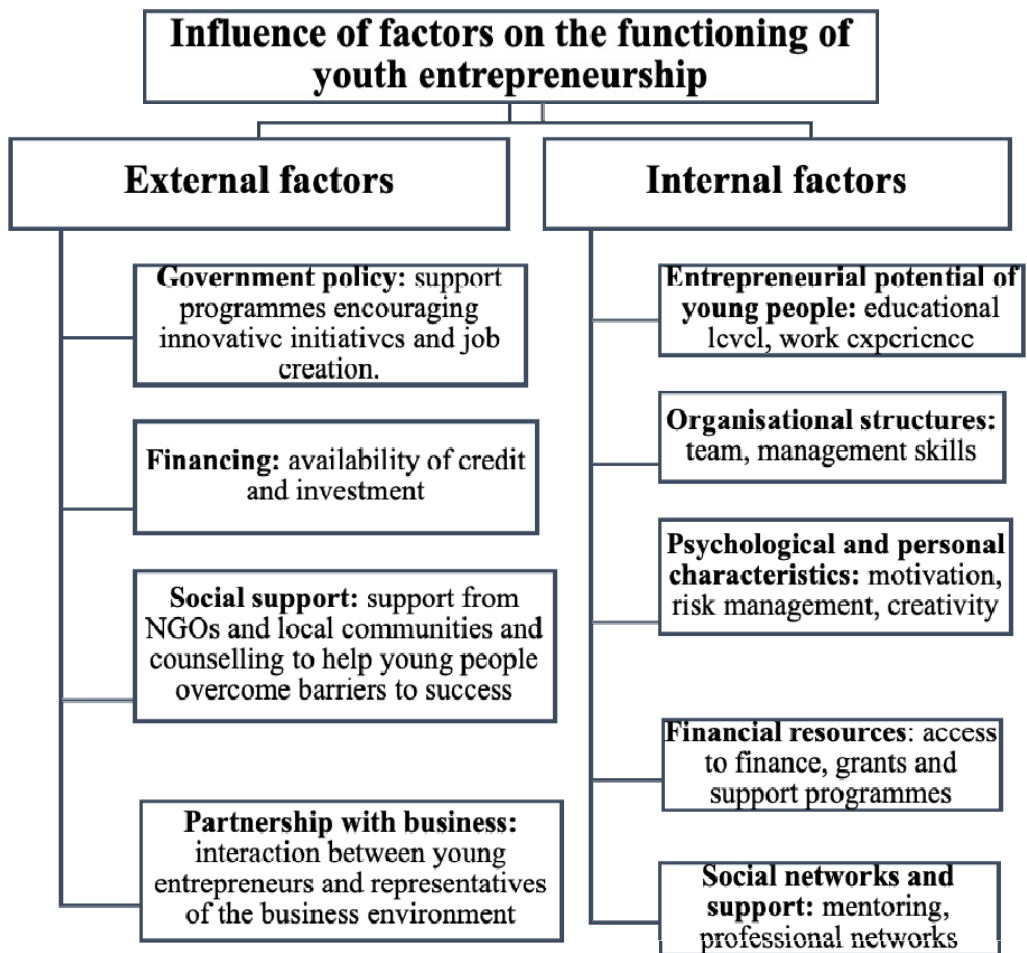


Figure 90. Influence of external and internal factors on the functioning of youth entrepreneurship

Source: compiled by the author

Based on the logical framework in Figure 90, external factors can have a significant impact on the development of youth entrepreneurship through the lens of inclusiveness by creating opportunities and resources that support young entrepreneurs in their quest for success. The creation of an inclusive business

environment is key to ensuring the sustainability of youth entrepreneurship, providing support and resources for young entrepreneurs, enabling them to adapt effectively to the changes taking place. The management of internal factors is key to the successful development of youth entrepreneurship in terms of functioning. Inclusiveness in this area can be manifested in the creation of favourable conditions for young people, including education, access to finance, the development of mentoring programmes and active support from the state and society.

Based on the above, youth entrepreneurship is an important component of the concept of an inclusive economy, as young people are the driving force behind social innovation and the generator of new approaches to addressing inclusion in economic activity. Such entrepreneurship allows not only to solve specific social problems, but also to stimulate the participation of young people in the processes of forming inclusive economic models.

In general, social and youth entrepreneurship plays a key role in building an inclusive national economy by addressing social problems and promoting equality of opportunity for all social groups. They create a platform for social innovations aimed at improving economic conditions and providing access to resources for socially vulnerable groups. An inclusive economy is an important condition for sustainable development, as it promotes social cohesion, equality and economic stability.

In Ukraine, under martial law, social and youth entrepreneurship is of particular importance as it contributes to the integration of vulnerable groups, including veterans, IDPs and people who have lost their livelihoods due to the war. Social enterprises can help rebuild devastated communities and contribute to job creation by focusing on providing psychological support, rehabilitation services and educational programmes. Ukraine's post-war recovery will require a significant socio-economic effort, where this type of entrepreneurship will help build new opportunities in education, healthcare, housing and the environment, supporting community resilience and stimulating long-term economic growth. The development of social entrepreneurship in Ukraine has the potential to build a more inclusive and resilient economy that meets modern challenges and ensures social justice for all categories of the population, contributing to national revival and economic stability.

3.6. Sustainable development as a tool for the balanced use of natural resources in agricultural regions

Sustainable Development as a Tool for the Balanced Use of Natural Resources in Agricultural Regions. Sustainable development is a key concept that ensures the balanced use of natural resources in agricultural regions, considering both current needs and the interests of future generations. The agri-food sector, being one of the most resource-intensive, requires a new approach to

resource management aimed at minimizing environmental impact, ensuring economic stability, and fostering social resilience. In this context, sustainable development serves as a tool to integrate environmental, economic, and social aspects to achieve harmony between economic activities and natural ecosystems.

Balanced use of natural resources is fundamental to sustainable development in agricultural regions. Rational management of land, water, and energy resources is essential for the long-term productivity of agricultural enterprises. Land resources, as the basis of agricultural production, endure significant pressure from intensive use, leading to soil degradation, reduced fertility, and loss of biodiversity. Sustainable development promotes practices that preserve soil fertility, such as organic farming, crop rotation, cover crops, and reduced chemical inputs. These methods not only improve agricultural production efficiency but also ensure the long-term conservation of soil resources for future generations.

Principles of Sustainable Development in the Agricultural Sector

Sustainable development in the agricultural sector involves integrating economic, social, and environmental interests. The main principles underlying sustainable development in agricultural regions include:

- Efficient management of natural resources, including land, water, biodiversity, and climate conditions;
- Support for social stability and well-being of rural populations;

- Utilization of innovative technologies and adoption of modern agricultural practices.

Implementing these principles requires collaboration among government agencies, agricultural enterprises, and local communities, facilitating a systematic approach to the management and use of natural resources (table 20, table 21).

Table 20. Natural Resource Management Scheme in Agricultural Regions Based on Sustainable Development Principles

Management level	Main objectives	Examples of measures
National	Development and implementation of national policies for natural resource conservation and support of the agricultural sector	Introduction of state support programs for sustainable agriculture and development of environmental protection legislation
Regional	Coordination between local authorities and agricultural producers on the use of land and water resources	Monitoring land conditions, developing programs for rational water use, and biodiversity protection
Local	Engagement of local communities in natural resource management and implementation of sustainable agrotechnologies	Conducting training programs for farmers, implementing organic farming practices, and preserving landscape diversity

Source: compiled by the authors

Table 21 illustrates a comparison of key natural resource utilization indicators before and after implementing sustainable development principles in the agricultural sector. Indicators such as water consumption, cultivated land area, carbon dioxide (CO₂)

Table 21. Key Impact Indicators of Sustainable Agriculture on Natural Resource Utilization

Indicator	Unit of measurement	Before sustainable development implementation	After sustainable development implementation
Water consumption per hectare	Cubic meters per hectare (m ³ /ha)	500	300
Cultivated land area	Hectares (ha)	1000	800
CO ₂ Emissions per Hectare	Tons per hectare (t/ha)	5	2,5
Grain crop yield	Quintals per hectare (q/ha)	40	45

Source: compiled by the authors

emissions, and grain yield demonstrate how sustainable development reduces environmental impact while simultaneously enhancing productivity. The reduction in water consumption and cultivated land area reflects more efficient resource use. A decrease in CO₂ emissions per hectare results from the adoption of eco-friendly technologies, which is also accompanied by increased yield due to optimized agricultural practices.

The following table 22 reflects the effectiveness of sustainable technology implementation through the example of three agricultural enterprises from different regions of Ukraine.

Table 22. Evaluation of the Effectiveness of Implementing Sustainable Technologies in Agricultural Enterprises

Enterprise	Region	Technology implementation level	Yield change (%)	Reduction in resource costs (%)
LLC “Agroprominvest”	Vinnytsia	High	+10	-25
Farm “Zelena dolyna”	Lviv	Medium	+5	-15
PE “EkoDzherelo”	Poltava	Low	+3	-10

Source: compiled by the authors

Each enterprise is assessed by the level of sustainable agritech adoption, illustrated by changes in yield and reductions in natural resource costs. Enterprises that actively implement modern practices demonstrate significant yield growth and cost reductions, confirming the effectiveness of sustainable development approaches. Enterprises with medium and low levels of technology adoption show less change, highlighting the need for further innovation integration and support from the government and local communities.

Descriptions of Implemented Technologies for Each Enterprise:

1. LLC “Agroprominvest” (Vinnytsia Region) - High Level:

- Implemented advanced precision agriculture technologies, including GPS-based field monitoring and automated irrigation systems, optimizing water and fertilizer use.

- Transitioned to organic crop protection methods and installed solar panels, reducing chemical usage and energy costs.
 - Adopted crop rotation and cover cropping to maintain soil health and enhance biodiversity.
2. Farm “Zelena Dolyna” (Lviv Region) - Medium Level:
- Implemented selective precision agriculture practices, such as targeted fertilizer application, reducing fertilizer costs while improving yield.
 - Introduced partial crop rotation practices and began integrating organic pest control in select fields.
 - Utilized rainwater collection systems for supplementary irrigation, reducing reliance on local water sources.
3. PE “EkoDzherelo” (Poltava Region) - Low Level:
- Introduced basic soil conservation practices, including reduced tillage, to prevent erosion and maintain soil fertility.
 - Experimented with organic fertilizers on limited plots to evaluate impact on soil health.
 - Initial steps towards energy efficiency, such as upgrading machinery to newer, more fuel-efficient models.

The factors influencing the development of agricultural enterprises in Ukraine are diverse and include both internal and external aspects that determine production efficiency, resource utilization, and adaptability to change. The main factors include:

1. Economic Conditions: Market prices, access to financing, and economic stability, which affect the profitability and investment potential of agricultural enterprises.

2. Technological Advancements: Availability and adoption of innovative agricultural technologies, such as precision farming, organic farming practices, and resource-efficient machinery.

3. Environmental Factors: Climate conditions, soil fertility, and water availability, which influence crop yields and sustainability.

4. Regulatory and Policy Support: Government policies, subsidies, and regulations related to agriculture and environmental protection, which can encourage or limit development.

5. Labor and Expertise: Availability of skilled labor, training, and knowledge in sustainable and efficient agricultural practices.

6. Market Access and Infrastructure: Proximity to markets, quality of transportation, and storage facilities, which impact the ease of product distribution and export potential.

7. Social and Community Support: Local community engagement, support for rural development, and collaboration with stakeholders, which enhance social stability and long-term sustainability.

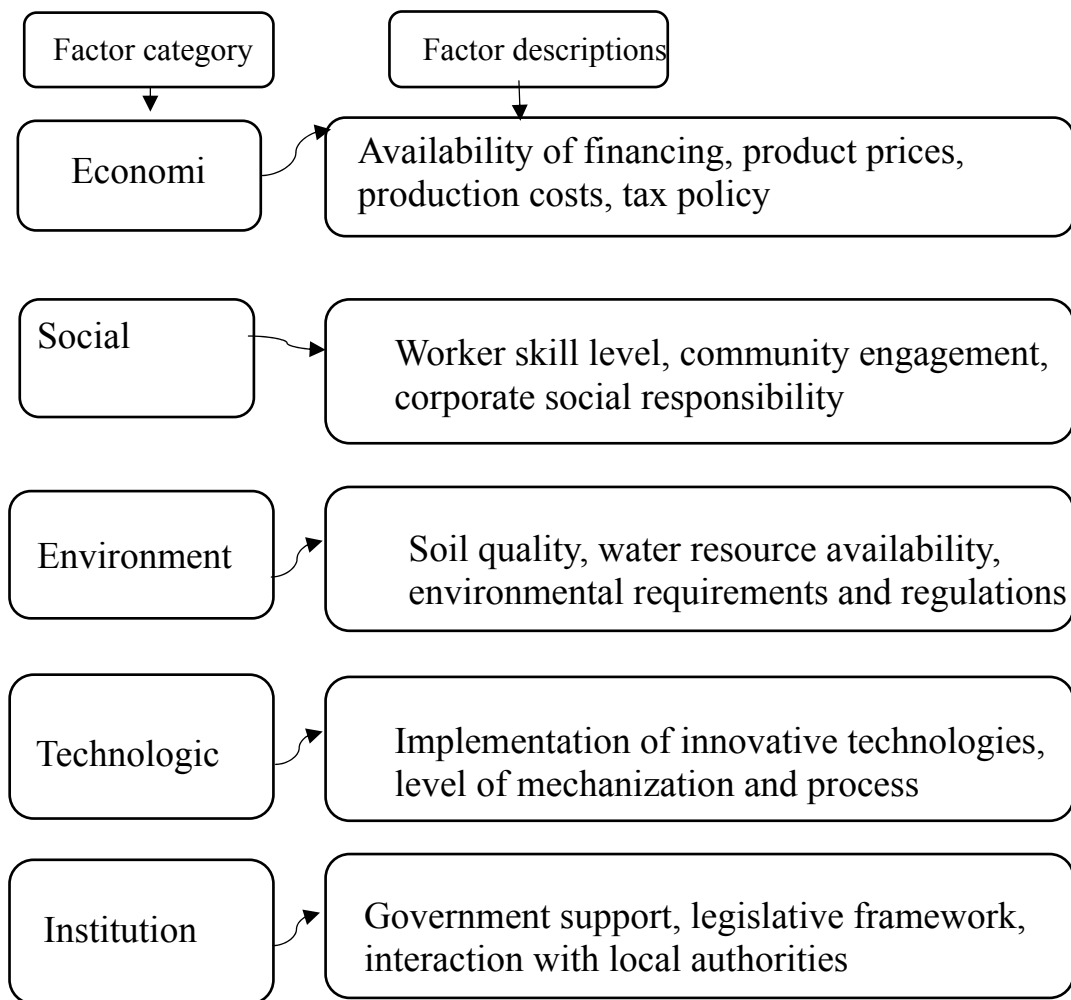


Figure 91. Factors Influencing the Development of Agricultural Enterprises in Ukraine

Source: compiled by the authors

Sustainable development in Ukraine's agricultural regions is a vital tool for conserving and rationally using natural resources. Implementing sustainable development principles not only enhances the efficiency of agricultural production but also reduces the negative impact on the environment. The use of modern

technologies and collaboration between government bodies, agricultural producers, and local communities are key factors for the successful implementation of sustainable development strategies.

Thus, sustainable development is an effective tool for the balanced use of natural resources in agricultural regions, aimed at environmental conservation, economic efficiency, and increased social resilience. It allows for the integration of economic, environmental, and social interests, ensuring harmonious development of agricultural regions and preserving their potential for future generations. To achieve these goals, it is essential to implement innovative technologies, promote the rational use of resources, and engage local communities in decision-making processes related to resource conservation and management.

3.7. Interaction between sustainable development and social responsibility of agricultural enterprises

Sustainable development and social responsibility are integral components of the modern agricultural sector, defining its long-term viability and societal impact. These concepts are closely intertwined and reflect the ambition of agricultural enterprises to pursue not only economic growth but also ecological balance and improved social conditions.

The social responsibility of agricultural enterprises encompasses responsible resource use and attention to the well-being of local

communities in which they operate. This is evident through job creation, support for local initiatives, provision of safe working conditions, and promotion of social integration. Agricultural enterprises that uphold social responsibility principles not only enhance their image but also generate additional value for society, raising the overall quality of life.

We will present in the table 22 definitions of social responsibility

Table 22. Definitions of “Social Responsibility” according to different approaches

Author	Definition
Carroll A. B. (1991)	Social responsibility is a multi-level concept that includes a company's economic, legal, ethical, and philanthropic obligations to society. The main objective is to meet the expectations of all stakeholders, ensuring stability and transparency in the company's activities.
Friedman M. (1970)	The sole social responsibility of business is to maximize profit for shareholders, while adhering to the basic rules of the game. Friedman argued that companies should not deviate from their primary objective—profit generation—as it conflicts with shareholder interests.
Elkington J. (1997)	A business must be accountable in three areas: economic, environmental, and social (the "Triple Bottom Line" concept). Elkington argued that a successful business should consider not only financial performance but also its environmental impact and social aspects.
Freeman R. (1984)	Social responsibility involves meeting the needs of all stakeholders, not just shareholders. Freeman developed the stakeholder management concept, where businesses should balance the interests of employees, customers, suppliers, local communities, and other groups.

Source: compiled by the authors

Social responsibility in agricultural enterprises is a critical factor in the sustainable development of rural areas. Social entrepreneurship serves as a modern tool for collaboration between business, government, and the community, focusing on socially innovative entrepreneurial endeavors. A significant portion of profits from such activities is directed toward solving social issues for various segments of the population. The social mission is the primary purpose of a social entrepreneur, distinguishing them from traditional and socially responsible businesspeople. Support for social business by agricultural enterprises depends on community needs, management's commitment, and government support.

According to the “Concept for Implementing State Policy to Promote Socially Responsible Business in Ukraine until 2030”, socially responsible business is defined as activities aimed at achieving social, economic, and environmental goals, considering the interests of all stakeholders and contributing to improved quality of life¹⁰⁴.

We can perform the “Model of Social Responsibility Management for an Agricultural Enterprise” in the figure 92.

The “Model of Social Responsibility Management for an Agricultural Enterprise” diagram represents a sequential process for integrating social responsibility into the operations of an agricultural

¹⁰⁴ Sapun, V. K., Selez'n'ova, V. R. (2018) Kontsepsiya inklyuzyvnoho zrostannya v ekonomitsi. [Concept of inclusive growth in the economy.] *Visnyk student-s'koho naukovoho tovarystva DonNU imeni Vasylya Stusa*. № 10. Pp. 177–181. (in Ukrainian)

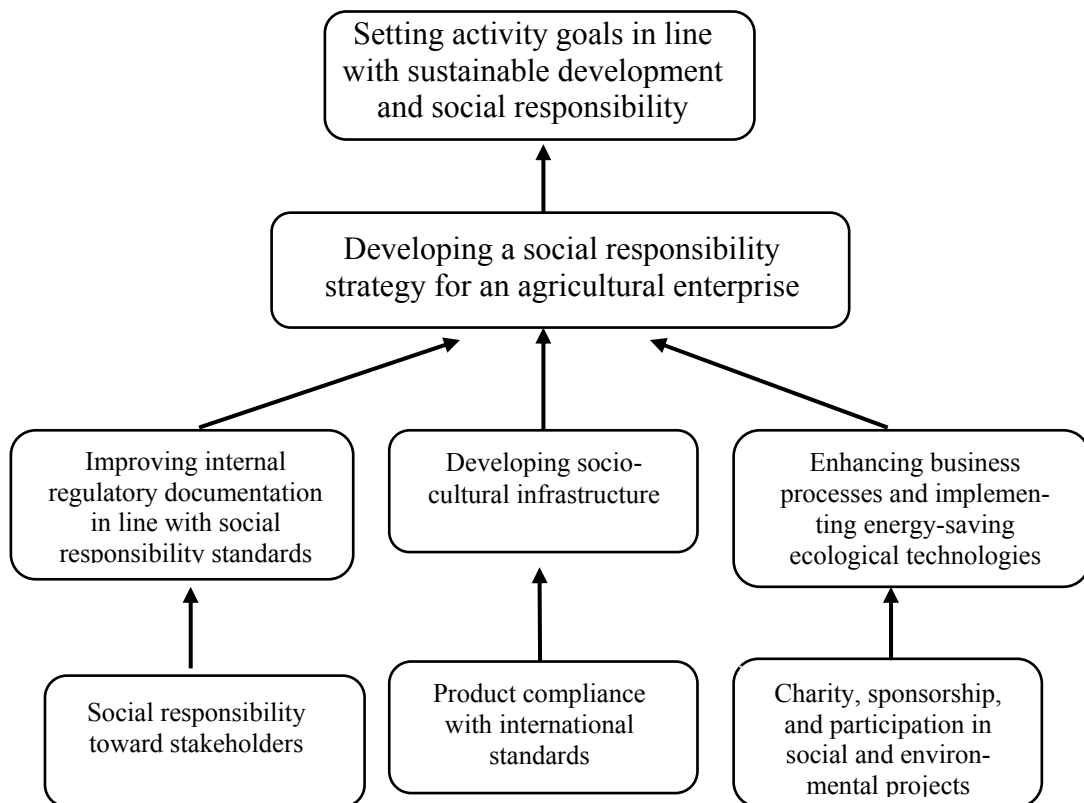


Figure 92. Model of Social Responsibility Management for an Agricultural Enterprise

Source: compiled by the authors

enterprise. In the first stage, activity goals are established that align with the principles of sustainable development and social responsibility. This foundation guides subsequent steps and enables the enterprise to develop a strategic vision of its responsibilities toward society and the environment. Next, a comprehensive social responsibility strategy is developed, defining the main directions for achieving these goals.

Implementing the strategy involves several key directions: improving regulatory documentation to meet social responsibility standards, developing sociocultural infrastructure to support employees and communities, and optimizing business processes through energy-saving technologies. At the practical level, this includes ensuring product compliance with international standards, upholding social responsibility toward stakeholders, and participating in charitable, social, and environmental projects.

Key Principles of Company Management and Adopted Policies in the Context of Sustainable Development and Social Responsibility for Agricultural Enterprises

Management of agricultural enterprises adhering to sustainable development and social responsibility principles is based on several key principles and policies that effectively integrate environmental, social, and economic goals:

1. **Sustainability Principle:** Companies should make decisions considering the long-term impact on the environment and society, including conserving natural resources, reducing harmful emissions, and optimizing water use.

2. **Transparency and Accountability Principle:** Enterprises are obligated to openly communicate their activities, publish sustainability reports, and disclose the results of socially responsible initiatives. This includes environmental reporting as well as reports on community impact and workplace safety.

3. **Stakeholder Engagement Principle:** It is essential to involve all stakeholders in the management process, including employees, the community, suppliers, and consumers. Interaction with these groups helps identify issues and opportunities to improve social and environmental impact.

4. **Ethical Business Conduct:** Company management should follow ethical standards and conduct business responsibly, balancing economic gain with the social welfare of local communities.

5. **Innovative Technologies:** Integrating modern innovative solutions that reduce environmental impact and improve working conditions is a critical component of sustainable development-oriented management.

6. **Support for Local Communities:** Agricultural enterprises actively participate in the lives of local communities, supporting educational, cultural, and social projects that improve the quality of life in rural areas.

7. **Zero Pollution Policy:** Agricultural companies implement policies aimed at minimizing harmful emissions, reducing production waste, and ensuring resource efficiency. This policy reduces environmental impact and supports biodiversity conservation.

8. **Equal Opportunity Policy:** Companies ensure equal opportunities for all employees, regardless of gender, age, religion, or nationality, fostering an inclusive work environment and promoting social stability.

These principles and policies collectively enhance the sustainable and socially responsible management of agricultural enterprises, aligning economic success with environmental stewardship and social well-being.

Figure 93 presents levels of social responsibility implementation for agricultural sector entities.

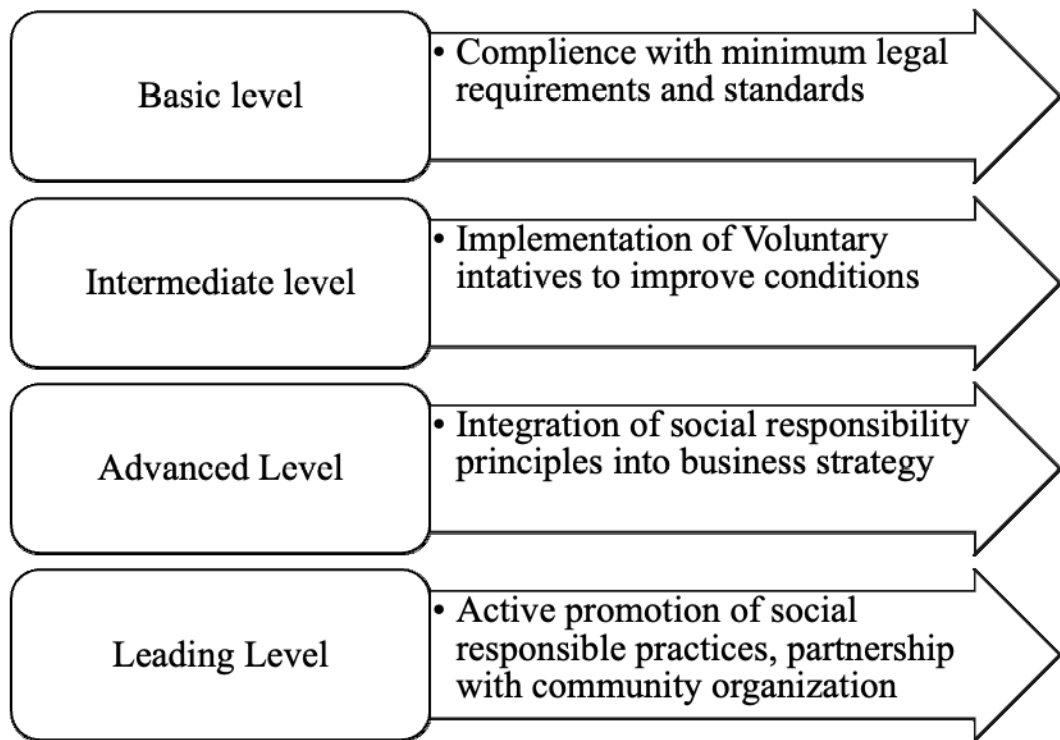


Figure 93. Levels of Social Responsibility Implementation for Agricultural Sector Entities

Source: compiled by the authors

At the basic level, social responsibility in agricultural enterprises is defined by compliance with minimum legal requirements and adherence to fundamental safety and labor standards. The intermediate level involves additional measures

aimed at improving working conditions, supporting social initiatives, and enhancing environmental performance.

At the advanced level, social responsibility becomes integrated into the company's strategy, with sustainable development forming an essential part of business processes. The leading level is characterized by the proactive promotion of socially responsible practices, participation in community projects, and collaboration with other organizations to maximize positive impacts on society and the environment.

The interaction between sustainable development and social responsibility in agricultural enterprises is realized through environmentally focused initiatives, such as biodiversity conservation, water use optimization, soil impact minimization, and the implementation of innovative technologies to reduce environmental footprint. Adopting sustainable practices allows enterprises to increase production efficiency and reduce resource dependency, supporting stable growth.

Thus, integrating sustainable development and social responsibility principles fosters the creation of more resilient agricultural enterprises, capable of adapting to climate change and market instability. It also enhances their competitiveness by balancing economic profit, environmental stability, and social development, forming the foundation for a robust and sustainable agricultural sector in Ukraine.

Sustainable development is a key factor in the inclusive development of the agri-food sector, requiring special attention due to its high dependency on natural resources, the social conditions in rural areas, and the economic risks associated with market instability and climate change. This approach allows agricultural enterprises not only to improve production efficiency but also to reduce environmental impacts, thereby supporting the well-being of local communities. An essential aspect of sustainable development is balancing resource use with ecosystem conservation, which contributes to the stability of agricultural production and its adaptability to changing conditions.

Successful implementation of sustainable development in the agricultural sector is based on several key principles: ecological sustainability, social responsibility, and economic efficiency. Ecological sustainability is achieved through practices that preserve soil fertility, reduce chemical usage, and minimize greenhouse gas emissions. Social responsibility for agricultural enterprises involves supporting local communities, creating jobs, ensuring safe working conditions, and investing in educational and cultural projects. Economic efficiency is attained by optimizing production processes, adopting advanced technologies, and reducing energy and resource costs, all of which enhance the competitiveness of enterprises in both domestic and international markets¹⁰⁵.

¹⁰⁵ Vdovichen, O. H. (2018) Inklyuzyvnyy rozvytok — suchasna paradyhma stiykoho ekonomichnoho zrostannya. [Inclusive development — a modern paradigm of sustainable

Thus, sustainable development serves as an integrative tool that unifies the economic, environmental, and social goals of agricultural enterprises. The use of innovative technologies, such as precision farming, organic cultivation methods, and energy-efficient practices, enables enterprises to minimize their environmental footprint while increasing productivity. Cooperation among agricultural businesses, the government, and local communities fosters a supportive environment for sustainable development and ensures the long-term potential of Ukraine's agri-food sector. This approach meets the needs of today's society while addressing future challenges, ensuring the harmonious coexistence of economic activity and natural resources in agricultural production.

Implementing sustainable practices in the agricultural sector is also essential for achieving the United Nations' global sustainable development goals. This approach includes addressing food security issues, reducing poverty levels in rural areas, preserving biodiversity, adapting to climate change, and supporting social resilience. Thus, integrating sustainable development and social responsibility principles in the agricultural sector contributes to the creation of resilient agricultural enterprises capable of adapting to contemporary challenges and promoting socio-economic growth within the sustainable limits of natural resources.

CONCLUSIONS

The conducted scientific research allows us to summarize the results obtained and determine that the inclusive development of the agro-industrial sector is one of the determining factors in modern conditions and in the conditions of the challenges that Ukraine has faced. Inclusive development involves balanced, full-fledged development that includes all members of society, takes into account their interests. The inclusiveness of the economy is measured not only by purely economic indicators, for example, GDP, but also by social indicators that reflect the quality of life in society. The development of the country on the basis of inclusiveness is important, which means that society develops taking into account the needs of all stakeholders and the opportunity to realize its potential. To the issues of inclusive development are already being paid attention at the global level, when inclusive growth indices and methods for their calculation are being formed. This study summarized the main methods for determining indices related to inclusiveness at the state level. They are based on both the state's GDP indicators and various social indicators - education, infrastructure, life expectancy, etc.

Under the full-scale war conditions Ukraine was faced with the need to ensure the functioning of the economy, physical and food security of the population. Also, the European integration path requires our state to take modern actions and take into consideration

the best practices of the EU. One of these is an inclusive path of development. Also important in this is the development in the paradigm of sustainable development, as well as the implementation of the Green Deal program in Ukrainian realities.

The “Green” course should become a component of the state environmental protection policy and development of the state. Certain actions are already being implemented by the Government in this direction, and research is being conducted by scientists. These investigations indicate that the implementation of this program in the Ukrainian nowadays reality will allow both to increase the productivity and quality of agriculture, and will allow us to achieve a new level of production and development of the country, which will make us an equal member of the European Community.

We also cannot but mention that the issue of security is very acute at the moment in our country, as there is a direct physical threat to the population from russia. The problem of food security in Ukraine is also getting worse. Military operations have led to the fact that a large amount of land has been occupied and remains so at the moment, or active military operations do not allow for agricultural activities. All of this leads to a shortage of agricultural products on the Ukrainian market. This situation has negative consequences in both the short and long term. On the one hand, the reduced ability to produce agricultural products reduces the cash flows of business entities, which consequently affects the welfare of

the families concerned and reduces the state budget revenues in the form of taxes. On the other hand, the lack of food increases food insecurity in the country, and, accordingly, the shortage of products causes prices to rise, which further exacerbates social problems in society and impoverishes the population. Also, we cannot but mention that the hostilities and the blockade of our ports made it impossible to export grain abroad. Ukraine was not able to fully fulfill its obligations under the contracts and for some time not at all. This reduces cash flows to the country and exacerbates the problem of food security around the world.

This is why it is necessary to stimulate agricultural development even in the current conditions and taking into account military realities. This development should be balanced and inclusive, i.e. aimed not only at increasing purely financial indicators, but also at improving the welfare of the population and improving social conditions. In this regard, we see that the state has already taken some steps in this direction and developed grant and loan programs to support small and medium-sized businesses as a layer of entrepreneurship that should create a solid foundation for the sustainable development of Ukraine's economy.

We emphasize the importance of supporting and stimulating the development of small and medium-sized businesses in these conditions. As part of the research topic, we studied the impact of various factors on the activities of SMEs. The data obtained show that the factor of full-scale invasion has the greatest impact, which is

assessed negatively by all enterprises that participated in the study. At the same time, the COVID-19 pandemic, for example, has had a positive impact on some businesses, which is manifested as a result of the spread of the trend of healthy eating and health care. It is becoming increasingly difficult for businesses to maintain the previous pace of development and hold their positions. Some of them are forced to cut staff, which has a negative impact on the labor market. At the same time, there are companies that are expanding and hiring new staff and see opportunities for development in light of current global trends in the agricultural sector. Businesses positively assess the government's financial support policy in terms of developing various areas, such as horticulture or greenhouses. All of this leads to the conclusion that the inclusive development of the agro-industrial sector requires the creation of a state mechanism that will take into account both the interests of the state as a whole and focus on SME development, stimulate the participation of enterprises in the implementation of the Green Deal, and implement this course at the state level.

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APPENDICES

Statistics of agriculture in Ukraine

The number of employees at economic entities by types of economic activity with distribution by the number of employees in 2016-2022

Years	In total									
	2016	2017	2018	2019	2020	2021	2022			
business entities with the number of employees up to 9 persons, persons	1094595	1231427	1359530	1350951	1343427	1363551	1014092			
in % to the total indicator of the subjects of business entity of the corresponding type of activity	16.9	18.7	19.5	18.5	18.5	18.8	17			
business entities with the number of employees from 10 to 49 persons	1124511	1161555	1248837	1248140	1221220	1247780	1000473			
in % to the total indicator of the subjects of business entity of the corresponding type of activity	17.4	17.7	18	17.1	16.8	17.2	16.7			
business entities with the number of employees from 50 to 249 persons	1228156	1229307	1329927	1445726	1436819	1423050	1209402			
in % to the total indicator of the subjects of business entity of the corresponding type of activity	19	18.7	19.1	19.8	19.8	19.6	20.2			
business entities with 250 or more employees, persons	3014633	2953609	3021547	3246320	3252920	3214406	2760447			
in % to the total indicator of the subjects of business entity of the corresponding type of activity	46.7	44.9	43.4	44.6	44.9	44.4	46.1			

	Agriculture, forestry and fish farming household									
business entities with the number of employees up to 9 persons, persons	73412	77648	77928	76206	78976	81332	64629			
in % to the total indicator of the subjects of business entity of the corresponding type of activity	12.3	13.5	13.8	13.8	15.1	15.6	14.4			
business entities with the number of employees from 10 to 49 persons	125865	129880	127258	129897	126463	131324	115693			
in % to the total indicator of the subjects of business entity of the corresponding type of activity	21	22.6	22.5	23.5	24.1	25.2	25.8			
business entities with the number of employees from 50 to 249 persons	228581	k	k	210428	198590	195375	154495			
in % to the total indicator of the subjects of business entity of the corresponding type of activity	38.2	k	k	38	37.9	37.6	34.5			
business entities with 250 or more employees, persons	170405	k	k	136714	119753	112231	113576			
in % to the total indicator of the subjects of business entity of the corresponding type of activity	28.5	k	k	24.7	22.9	21.6	25.3			
	agriculture, hunting and providing related to them services									
business entities with the number of employees up to 9 persons, persons	68132	72309	72308	70686	73599	75834	60134			
in % to the total indicator of the subjects of business entity of the corresponding type of activity	13	14.4	14.6	14.5	15.9	16.5	15.1			
business entities with the number of employees from 10 to 49 persons	k	119611	117696	k	118128	k	109056			

in % to the total indicator of the subjects of business entity of the corresponding type of activity	k	23.9	23.8	k	25.5	k	27.5
business entities with the number of employees from 50 to 249 persons	k	186090	k	k	163426	k	k
in % to the total indicator of the subjects of business entity of the corresponding type of activity	k	37.1	k	k	35.3	k	k
business entities with 250 or more employees, persons	145450	123023	k	118845	107823	100884	93526
in % to the total indicator of the subjects of business entity of the corresponding type of activity	27.8	24.6	k	24.5	23.3	21.9	23.5
forestry and logging							
business entities with the number of employees up to 9 persons, persons	3492	3342	3580	3574	3471	3641	3267
in % to the total indicator of the subjects of business entity of the corresponding type of activity	5.1	5	5.5	5.8	6.2	6.5	6.8
business entities with the number of employees from 10 to 49 persons	k	7818	k	k	6763	k	5523
in % to the total indicator of the subjects of business entity of the corresponding type of activity	k	11.6	k	k	12.1	k	11.5
business entities with the number of employees from 50 to 249 persons	32984	32795	33058	k	33840	k	k
in % to the total indicator of the subjects of business entity of the corresponding type of activity	48.6	48.8	50.5	k	60.4	k	k

	k	23254	k	17869	11930	11347	20050
business entities with 250 or more employees, persons	k						
in % to the total indicator of the subjects of business entity of the corresponding type of activity	k	34.6	k	28.9	21.3	20.3	41.6
business entities with the number of employees up to 9 persons, persons	1788	1997	2040	1946	1906	1857	1228
in % to the total indicator of the subjects of business entity of the corresponding type of activity	27.5	33	35.2	35.1	39.7	41.4	41
business entities with the number of employees from 10 to 49 persons	2887	2451	k	2220	1572	1540	1114
in % to the total indicator of the subjects of business entity of the corresponding type of activity	44.5	40.5	k	40.1	32.7	34.3	37.2
business entities with the number of employees from 50 to 249 persons	k	k	1239	1376	1324	1090	654
in % to the total indicator of the subjects of business entity of the corresponding type of activity	k	k	21.4	24.8	27.6	24.3	21.8
business entities with 250 or more employees, persons	k	k	k	–	–	–	–
in % to the total indicator of the subjects of business entity of the corresponding type of activity	k	k	k	–	–	–	–

Symbol (k) - the data are not made public in order to fulfill the requirements of the Law of Ukraine "On Official Statistics" regarding the provision of guarantees of the state statistics bodies regarding statistical confidentiality.

Source: compiled by the authors based on the materials of the State Statistics Service of Ukraine. URL : <https://ukrstat.gov.ua>

Indices of agricultural products ¹ (in constant 2016 prices; % to the previous year										
Years	Farms of all categories				enterprises				Including	
	agricultural products	products from it		agricultural products	products from it		agricultural products	economy of the population		
Crop production		Livestock	Crop production		Livestock	Crop production		Livestock		
2010	98.6	96.4	104.3	97.5	94.6	109.8	99.9	99.4	100.8	
2011	120.2	128.7	99.8	128.3	134.9	104.5	110.4	119.2	96.6	
2012	96.1	93.3	104.9	94.1	91.0	108.1	99.0	97.2	102.5	
2013	113.6	117.1	103.9	120.5	123.6	108.6	104.3	106.4	100.3	
2014	102.2	103.1	99.5	103.8	103.9	103.4	99.7	101.4	96.3	
2015	95.2	94.8	96.4	94.8	94.5	96.5	95.8	95.5	96.3	
2016	106.3	109.1	97.3	109.7	112.4	97.5	100.9	102.8	97.2	
2017	97.8	97.1	100.2	97.0	96.2	101.0	99.3	99.1	99.6	
2018	108.2	110.2	101.2	112.0	113.6	104.5	101.7	103.3	98.1	
2019	101.4	101.8	100.2	102.7	102.5	103.8	99.1	100.2	96.7	
2020	89.9	87.9	97.5	88.0	85.8	99.3	93.6	92.8	95.6	
2021	116.4	122.6	95.4	122.3	127.8	98.0	105.6	111.4	92.4	
2022 ²	75.0	72.0	88.0	72.0	68.5	91.8	81.4	80.6	83.6	

¹The data are given without taking into account the temporarily occupied territory of the Autonomous Republic of Crimea, the city of Sevastopol, and part of the temporarily occupied territories in the Donetsk and Luhansk regions.

²The data for 2022 are given without taking into account the territories temporarily occupied by the Russian Federation and part of the territories where hostilities are (were) taking place. The data can be specified.

Source: compiled by the authors based on the materials of the State Statistics Service of Ukraine. URL : <https://ukrstat.gov.ua>

Average prices of agricultural products sold by enterprises (1996-2022) (UAH per ton)

	Cereal and leguminous crops	Oilseeds	Factory sugar beet	Potato	Vegetable crops	Fruit and berry crops	Farm animals (in live weight)	Milk	Eggs, per thousand pcs
1996	168.4	265.4	64.6	274.3	326.4	238.1	973.4	191.5	114.6
1997	176.1	246.8	69.8	245.0	352.1	169.0	1040.4	239.5	122.6
1998	154.2	321.0	68.2	273.2	333.0	252.2	1496.0	284.1	124.9
1999	200.4	509.6	79.2	492.4	447.8	483.5	1767.3	360.4	141.9
2000	443.8	525.7	121.5	517.1	572.1	394.9	2358.0	536.4	191.7
2001	381.3	779.6	139.1	449.8	748.9	575.8	4175.5	603.7	210.0
2002	312.5	850.3	128.1	555.8	864.8	509.6	3644.0	541.0	168.1
2003	535.1	873.7	140.3	623.3	1012.7	434.0	3480.7	696.9	193.2
2004	453.1	1153.4	135.7	530.4	1225.0	740.1	5092.7	835.3	238.3
2005	417.8	981.5	177.0	685.2	1462.1	987.8	6909.9	1126.9	251.8
2006	515.2	1007.5	186.0	1070.3	1547.4	1446.1	6307.7	1070.2	192.7
2007	833.5	1866.8	157.6	1032.0	1995.4	1528.4	6466.5	1660.6	274.4
2008	778.6	1734.6	218.9	1154.3	2059.9	1877.4	10184.3	2065.1	377.4
2009	799.0	2086.2	409.9	1298.6	1790.0	1892.4	10362.9	1888.8	403.9
2010	1120.9	2942.6	478.5	2131.0	2551.6	2419.8	10797.1	2938.7	470.6
2011	1374.2	3312.0	516.0	2032.8	2139.1	3175.9	11967.2	3041.6	521.5
2012	1547.1	3584.0	426.8	1139.6	1956.6	2707.1	13456.9	2662.2	627.0
2013	1299.8	3087.5	397.8	1860.9	2354.0	3010.8	12901.3	3364.0	656.7
2014 ²	1801.4	4062.8	494.2	2173.6	2514.3	2429.1	15736.9	3588.4	782.4

2015 ²	2912.1	7531.5	788.6	2436.3	3903.4	5894.5	21966.2	4347.3	1333.2
2016 ²	3414.0	8656.1	848.6	2631.8	3924.2	5863.8	22468.0	5461.8	1108.7
2017 ²	3771.6	9132.0	825.3	3296.3	4136.1	8766.6	31838.4	7234.0	1145.9
2018 ²	4315.0	9318.3	749.0	3746.0	4448.0	5054.0	33331.2	7602.4	1600.3
2019 ²	3867.5	8321.2	753.7	5474.7	4497.0	6494.4	32679.8	8198.2	1206.1
2020 ²	4794.1	10852.9	871.5	5103.4	4437.1	9140.2	32490.6	8839.9	1258.6
2021 ²	6296.1	16418.5	1164.1	4993.4	4679.6	8177.1	37380.5	10300.7	1877.3
2022 ^{2,3}	6399.7	15036.9	1572.2	4519.5	14025.0	8126.4	45676.7	10969.0	2328.3

¹ Without VAT, subsidies, transport, expeditionary and overhead costs; for 1996-2011 - taking into account subsidies.

² Data for 2014-2021 are given without taking into account the temporarily occupied territory of the Autonomous Republic of Crimea, the city of Sevastopol and part of the temporarily occupied territories in the Donetsk and Luhansk regions, for 2022 - without taking into account the territories temporarily occupied by the Russian Federation and part of the territories in which hostilities are (were) taking place.

³ The information is formed on the basis of the reports actually submitted by the enterprises (the level of reporting was 96%) and the conducted additional assessments of indicators. Data can be refined

Source: compiled by the authors based on the materials of the State Statistics Service of Ukraine. URL : <https://ukrstat.gov.ua>

Employed population by professional group and sex in 2010-2021, thousands of people

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Number of employed population aged 15-70, total	19180.2	19231.1	19261.4	19314.2	18073.3	16443.2	16276.9	16156.4	16360.9	16578.3	15915.3	15610.0
including qualified workers in agriculture and forestry, fish farming and fishing	199.6	186.7	175.3	165.2	173.7	155.8	138.7	135.8	120.9	160.7	192.7	220.1
Share in the total number of employed population	1.04	0.97	0.91	0.86	0.96	0.95	0.85	0.84	0.74	0.97	1.21	1.41
Women	9442.0	9362.3	9335.2	9329.5	8718.9	7872.4	7827.4	7771.2	7910.7	7923.1	7605.8	7406.6
including qualified workers in agriculture and forestry, fish farming and fishing	85.0	79.9	74.3	69.3	65.0	59.2	50.5	55.6	48.3	68.2	91.0	112.3
Share in the total number of employed population	0.90	0.85	0.80	0.74	0.75	0.75	0.65	0.72	0.61	0.86	1.20	1.52

Men	9738.2	9868.8	9926.2	9984.7	9354.4	8570.8	8449.5	8385.2	8450.2	8655.2	8309.5	8203.4
including qualified workers in agriculture and forestry, fish farming and fishing	114.6	106.8	101.0	95.9	108.7	96.6	88.2	80.2	72.6	92.5	101.7	107.8
Share in the total number of employed population	1.18	1.08	1.02	0.96	1.16	1.13	1.04	0.96	0.86	1.07	1.22	1.31

Source: compiled by the authors based on the materials of the State Statistics Service of Ukraine. URL : <https://ukrstat.gov.ua>

The volume of sold products (goods, services) of economic entities by types of economic activity with distribution by the number of employed workers in 2016-2022

Years	2016	2017	2018	2019	2020	2021	2022
In total							
business entities with up to 9 employees, thousand hryvnias	1055943245.4	1418227256.2	1820216530.6	1958980119.8	2255712862.3	3173063395.9	1552838926.6
in % to the total indicator of the subjects of business entity of the corresponding type of activity	15.7	17.1	18.3	18.6	20.4	21.2	14.0
business entities with 10 to 49 employees, thousand hryvnias	1129591686.3	1364980708.1	1645025162.0	1889449392.0	1872272124.4	2715519587.8	1957140564.8
in % to the total indicator of the subjects of business entity of the corresponding type of activity	16.8	16.4	16.5	18.0	16.9	18.1	17.6

business entities with the number of employees from 50 to 249 people, thousand hryvnias	1491282580.0	1823736930.6	2083103586.0	2126683633.5	2315290878.3	2886523703.2	2598679723.6
in % to the total indicator of the subjects of business entity of the corresponding type of activity	22.2	21.9	20.9	20.2	20.9	19.3	23.4
business entities with 250 or more employees, thousand hryvnias	3049922343.8	3705327063.3	4418459351.0	4548999694.4	4619021281.3	6214705248.9	5011216346.7
in % to the total indicator of the subjects of business entity of the corresponding type of activity	45.3	44.6	44.3	43.2	41.8	41.4	45.0
Agriculture, forestry and fisheries							
business entities with up to 9 employees, thousand hryvnias	53965931.7	66346548.6	76735206.3	87279837.9	104824991.7	254985916.4	91868352.3

in % to the total indicator of the subjects of the business entity corresponding to the type of activity	13.0	14.2	14.2	15.3	16.8	27.0	13.5
business entities with 10 to 49 employees, thousand hryvnias	108642695.3	127156370.0	143169788.4	147391474.2	166888900.0	230819679.7	182556114.9
in % to the total indicator of the subjects of business entity of the corresponding type of activity	26.2	27.2	26.5	25.7	26.7	24.5	26.7
business entities with the number of employees from 50 to 249 people, thousand hryvnias	128067749.2	k	k	186200269.1	197231745.1	266727879.9	214992402.7
in % to the total indicator of the subjects of business entity of the corresponding type of activity	30.9	k	k	32.5	31.6	28.3	31.5

business entities with 250 or more employees, thousand hryvnias	124123527.8	k	151876688.8	155124495.5	190955871.1	192995265.5
in % to the total indicator of the subjects of business entity of the corresponding type of activity	29.9	k	26.5	24.9	20.2	28.3
agriculture, hunting and related services						
business entities with up to 9 employees, thousand hryvnias	51579820.7	63108666.4	73257578.0	83061754.8	100684530.4	249276649.6
in % to the total indicator of the subjects of business entity of the corresponding type of activity	13.0	14.1	14.2	15.1	16.7	27.4
business entities with 10 to 49 employees, thousand hryvnias	k	125114040.2	140331893.2	k	164447140.0	k
						179277453.8

in % to the total indicator of the subjects of business entity of the corresponding type of activity	k	28.0	27.2	k	27.3	k	27.5
business entities with the number of employees from 50 to 249 people, thousand hryvnias	k	148054447.0	k	k	185451546.6	k	k
in % to the total indicator of the subjects of business entity of the corresponding type of activity	k	33.1	k	k	30.8	k	k
business entities with 250 or more employees, thousand hryvnias	118201959.4	111182110.9	k	146525339.4	151389254.1	185514868.2	181336389.5
in % to the total indicator of the subjects of business entity of the corresponding type of activity	29.8	24.8	k	26.6	25.2	20.4	27.8

forestry and logging									
business entities with up to 9 employees, thousand hryvnias	1902571.1	2656819.9	2780978.4	3007178.8	3384890.9	4582418.6	1103244.8		
in % to the total indicator of the subjects of the business entity corresponding to the type of activity	11.7	14.2	12.3	14.5	16.4	14.7	4.0		
business entities with 10 to 49 employees, thousand hryvnias	k	1788630.1	k	k	2184994.4	k	2762504,1		
in % to the total indicator of the subjects of business entity of the corresponding type of activity	k	9.6	k	k	10.6	k	9.9		
business entities with the number of employees from 50 to 249 people, thousand hryvnias	7168283.3	8359357.4	10830678.2	k	11284291.6	k	k		

in % to the total indicator of the subjects of business entity of the corresponding type of activity	44.2	44.6	47.9	k	54.8	k	k
business entities with 250 or more employees, thousand hryvnias	k	5913049.3	k	5351349.4	3735241.4	5441002.9	11658876.0
in % to the total indicator of the subjects of business entity of the corresponding type of activity	k	31.6	k	25.8	18.2	17.4	42.0
fish farming							
business entities with up to 9 employees, thousand hryvnias	483539.9	581062.3	696649.9	1210904,3	755570.4	1126848.2	855296.5
in % to the total indicator of the subjects of business entity of the corresponding type of activity	37.2	39.8	41.7	64.8	50.1	58.3	52.1

business entities with the number of employees from 10 to 49 people, thousand hryvnias	448694.5	253699.7	k	408793.3	256765.6	474298.4	516157.0
in % to the total indicator of the subjects of business entity of the corresponding type of activity	34.5	17.4	k	21.9	17.0	24.6	31.5
business entities with the number of employees from 50 to 249 people, thousand hryvnias	k	k	220559.8	248457.6	495906.9	330408,2	269350.8
in % to the total indicator of the subjects of business entity of the corresponding type of activity	k	k	13.2	13.3	32.9	17.1	16.4
business entities with 250 or more employees, thousand hryvnias	k	k	k	–	–	–	–

in % to the total indicator of the subjects of business entity of the corresponding type of activity	k	k	k	-	-	-	-
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Symbol (k) - the data are not made public in order to fulfill the requirements of the Law of Ukraine "On Official Statistics" regarding the provision of guarantees of the state statistics bodies regarding statistical confidentiality.

Source: compiled by the authors based on the materials of the State Statistics Service of Ukraine. URL : <https://ukrstat.gov.ua>

Grouping of enterprises by the size of the harvested area of the main agricultural crops in 2020 ¹

Grouping of enterprises by the size of the harvested area of the main agricultural crops in 2020 ¹						
	Number of enterprises		Volume of production		Productivity, centner from 1 ha	
	units	in % to the total amount	thousand tons	in % to the total volume of production		
Cereal and leguminous crops ²						
Enterprises	32513	100.0	51718.0	100.0	46.4	
of them with an area, ha						
up to 100.00	19026	58.5	1934.0	3.7	30.2	
100.01-200.00	3559	10.9	1899.5	3.7	36.6	
200.01-500.00	4213	13.0	5410.0	10.5	40.0	
500.01-1000.00	2765	8.5	8300.4	16.1	42.2	
1000.01-2000.00	1880	5.8	11694.6	22.6	46.3	
2000.01-3000.00	566	1.7	6694.1	12.9	48.6	
more than 3000.00	504	1.6	15785.4	30.5	56.6	

including					
wheat²					
Enterprises	23375	100.0	19683.1	100.0	39.8
of them with an area, ha					
up to 100.00	14730	63.0	1543.0	7.8	31.7
100.01-200.00	2867	12.3	1550.1	7.9	36.4
200.01-500.00	3132	13.4	3948.2	20.0	38.8
500.01-1000.00	1613	6.9	4580.4	23.3	40.5
1000.01-2000.00	775	3.3	4558.7	23.2	42.0
2000.01-3000.00	161	0.7	1666.2	8.5	42.9
more than 3000.00	97	0.4	1836.5	9.3	44.0
corn for grain²					
Enterprises	15115	100.0	26280.2	100.0	60.9
of them with an area, ha					
up to 100.00	8988	59.4	1324.7	5.0	41.6
100.01-200.00	2049	13.6	1467.8	5.6	48.9
200.01-500.00	2155	14.3	3805.4	14.5	55.4
500.01-1000.00	984	6.5	4083.1	15.5	58.9

1000.01-2000.00	554	3.7	4652.6	17.7	62.9
2000.01-3000.00	168	1.1	2788.8	10.6	67.1
more than 3000.00	217	1.4	8157.8	31.1	68.9
barley²					
Enterprises	13935	100.0	4281.0	100.0	34.8
of them with an area, ha					
up to 100.00	10844	77.9	1011.5	23.6	31.0
100.01-200.00	1553	11.1	817.7	19.1	36.1
200.01-500.00	1175	8.4	1203.0	28.1	35.6
500.01-1000.00	261	1.9	642.5	15.0	36.7
more than 1000.00	102	0.7	606.3	14.2	36.4
Soy					
Enterprises	8795	100.0	2511.3	100.0	21.3
of them with an area, ha					
up to 100.00	6464	73.6	352.3	14.0	17.1
100.01-200.00	1079	12.3	302.4	12.0	19.3
200.01-500.00	804	9.1	518.9	20.7	21.0
500.01-1000.00	249	2.8	394.1	15.7	22.9
1000.01-2000.00	136	1.5	474.0	18.9	25.2

more than 2000.00	63	0.7	469.6	18.7	21.5
Winter rapeseed and rapeseed (spring rapeseed)					
Enterprises	5006	100.0	2529.8	100.0	23.0
of them with an area, ha					
up to 100.00	2459	49.1	251.3	9.9	21.7
100.01-200.00	957	19.1	328.8	13.0	23.1
200.01-500.00	1059	21.2	776.0	30.7	23.4
500.01-1000.00	367	7.3	598.1	23.6	23.6
more than 1000.00	164	3.3	575.6	22.8	22.4
Sunflower²					
Enterprises	21856	100.0	11492.9	100.0	21.4
of them with an area, ha					
up to 100.00	12692	58.1	771.2	6,7	16.4
100.01-200.00	2894	13.2	829.3	7.2	19.6
200.01-500.00	3424	15.7	2267.4	19.8	20.7
500.01-1000.00	1704	7,8	2496.8	21.7	20.8
1000.01-2000.00	824	3.8	2458.9	21.4	22.1
2000.01-3000.00	181	0.8	1070.9	9.3	24.7
more than 3000.00	137	0.6	1598.4	13.9	24.6

Factory sugar beet					
Enterprises	506	100.0	8627.1	100.0	421.0
of them with an area, ha					
up to 100.00	253	50.0	473.4	5.5	450.4
100.01-200.00	86	17.0	581.9	6.8	458.6
200.01-500.00	80	15.8	1096.8	12.7	435.8
500.01-1000.00	31	6.1	882.3	10.2	421.7
more than 1000.00	56	11.1	5592.7	64.8	412.4

¹ The data are given without taking into account the temporarily occupied territory of the Autonomous Republic of Crimea, the city of Sevastopol, and part of the temporarily occupied territories in the Donetsk and Luhansk regions.

² The volume of production is given in mass after completion.

Source: compiled by the authors based on the materials of the State Statistics Service of Ukraine. URL : <https://ukrstat.gov.ua>

Grouping of enterprises by the size of the harvested area of the main agricultural crops in 2021¹

	Number of enterprises		Production volume (gross collection)		Yield, centner from 1 ha of harvested area
	units	in % to the total amount	thousand tons	in % to the total volume of production (gross collection)	
Cereal and leguminous crops²					
Enterprises	32403	100.0	69689.1	100.0	59.3
of them with an area, ha					
up to 100.00	18361	56.7	2699.1	3.9	41.3
100.01-200.00	3745	11.5	2717.7	3.9	49.8
200.01-500.00	4380	13.5	7596.6	10.9	53.5
500.01-1000.00	2833	8.7	11352.0	16.3	56.0
1000.01-2000.00	1938	6.0	15567.4	22.3	57.9
2000.01-3000.00	604	1.9	8977.9	12.9	61.5
more than 3000.00	542	1.7	20778.4	29.8	70.4
including wheat²					
Enterprises	24016	100.0	25687.2	100.0	47.4

of them with an area, ha								
up to 100.00	14789	61.6	1986.0	7.7				39.2
100.01-200.00	3005	12.5	2010.3	7,8				45.2
200.01-500.00	3310	13.8	5044.5	19.6				47.0
500.01-1000.00	1768	7.4	6000.8	23.4				48.3
1000.01-2000.00	854	3.5	5806.4	22.6				49.4
2000.01-3000.00	167	0.7	1987.1	7,8				49.6
more than 3000.00	123	0.5	2852.1	11.1				49.1
corn²								
Enterprises	15667	100.0	36790.7	100.0				83.7
of them with an area, ha								
up to 100.00	9357	59.7	2301.5	6.3				67.6
100.01-200.00	2250	14.4	2541.5	6.9				76.7
200.01-500.00	2158	13.8	5600.1	15.2				80.4
500.01-1000.00	1016	6.5	5878.3	16.0				83.1
1000.01-2000.00	493	3.1	5783.7	15.7				83.7
2000.01-3000.00	183	1,2	3930.4	10.7				87.7
more than 3000.00	210	1.3	10755.2	29.2				90.9
barley²								

Enterprises	13858	100.0	5592.5	100.0	42.3
of them with an area, ha					
up to 100.00	10546	76.1	1156.5	20.7	36.0
100.01-200.00	1640	11.8	1018.5	18.2	42.5
200.01-500.00	1225	8,9	1654.4	29.6	43.6
500.01-1000.00	348	2.5	1071.0	19.1	45.5
more than 1000.00	99	0.7	692.1	12.4	47.3
Soy					
Enterprises	8538	100.0	3130.4	100.0	27.5
of them with an area, ha					
up to 100.00	6291	73.7	469.1	15.0	23.7
100.01-200.00	1049	12.3	405.3	12.9	26.5
200.01-500.00	770	9.0	649.1	20.7	27.4
500.01-1000.00	229	2.7	452.7	14.5	28.1
1000.01-2000.00	145	1.7	610.6	19.5	30.4
more than 2000.00	54	0.6	543.6	17.4	28.5
Winter rapeseed and rapeseed (spring rapeseed)					
Enterprises	4740	100.0	2907.4	100.0	29.3
of them with an area, ha					

up to 100.00	2420	51.0	311.2	10.7	27.2
100.01-200.00	961	20.3	409.5	14.1	28.6
200.01-500.00	900	19.0	838.2	28.8	29.5
500.01-1000.00	307	6.5	633.0	21.8	29.7
more than 1000.00	152	3.2	715.5	24.6	30.3
Sunflower²					
Enterprises	22700	100.0	14214.0	100.0	25.6
of them with an area, ha					
up to 100.00	13346	58.8	1060.2	7.5	21.6
100.01-200.00	3120	13.7	1136.8	8.0	25.0
200.01-500.00	3447	15.2	2797.5	19.7	25.4
500.01-1000.00	1635	7.2	2940.4	20.7	25.7
1000.01-2000.00	792	3.5	2873.1	20.2	26.3
2000.01-3000.00	211	0.9	1386.9	9.7	26.8
more than 3000.00	149	0.7	2019.1	14.2	26.7
Factory sugar beet					
Enterprises	553	100.0	10353.7	100.0	486.6
of them with an area, ha					

up to 100.00	273	49.4	562.3	5.4	512.0
100.01-200.00	89	16.1	695.4	6,7	550.1
200.01-500.00	96	17.4	1534.1	14.8	503.6
500.01-1000.00	45	8.1	1519.2	14.7	495.6
more than 1000.00	50	9.0	6042.7	58.4	472.0

¹ The data are given without taking into account the temporarily occupied territory of the Autonomous Republic of Crimea, the city of Sevastopol, and part of the temporarily occupied territories in the Donetsk and Luhansk regions.

² The volume of production is given in mass after completion.

Source: compiled by the authors based on the materials of the State Statistics Service of Ukraine. URL : <https://ukrstat.gov.ua>

Grouping of enterprises according to the size of the harvested area of the main agricultural crops in 2022^{1,2}

	Number of enterprises		Production volume (gross collection)		Crop capacity, centner from 1 ha of collected area
	units	in % to the total amount	thousand tons	in % to the total volume of production (gross collection)	
Cereal and leguminous crops³					
Enterprises	24379	100	42315.2	100.00	50.3
of them with an area, ha					
up to 100.00	13624	55.9	1792.0	4.2	36.4
100.01-200.00	3003	12.3	1828.9	4.3	42.1
200.01-500.00	3446	14.2	4957.7	11.7	44.3
500.01-1000.00	2154	8.8	7210.8	17.0	47.0
1000.01-2000.00	1391	5.7	9469.2	22.4	49.1
2000.01-3000.00	392	1.6	5055.9	12.0	53.2
more than 3000.00	369	1.5	12000.7	28.4	61.2
including wheat³					
Enterprises	18604	100.0	16261.5	100.00	40.9
of them with an area, ha					

up to 100.00	11482	61.7	1362.6	8.4	34.2
100.01-200.00	2432	13.1	1354.1	8.3	37.4
200.01-500.00	2609	14.0	3325.2	20.5	39.5
500.01-1000.00	1299	7.0	3763.4	23.1	41.2
1000.01-2000.00	579	3.1	3459.2	21.3	43.1
2000.01-3000.00	121	0.7	1337.1	8.2	46.0
more than 3000.00	82	0.4	1659.9	10.2	45.4
corn ³					
Enterprises	12760	100.0	22301.0	100.0	69.1
of them with an area, ha					
up to 100.00	7856	61.6	1602.7	7.2	55.5
100.01-200.00	1777	13.9	1585.2	7.1	61.1
200.01-500.00	1726	13.6	3586.6	16.1	65.2
500.01-1000.00	770	6.0	3755.5	16.8	70.3
1000.01-2000.00	361	2.8	3620.3	16.2	73.6
2000.01-3000.00	118	0.9	2114.7	9.5	74.2
more than 3000.00	152	1,2	6036.0	27.1	73.9
barley ³					

Enterprises	9041	100.0	2949.8	100.0	35.1
of them with an area, ha					
up to 100.00	6967	77.1	660.9	22.4	31.0
100.01-200.00	1007	11.1	524.6	17.8	35.7
200.01-500.00	801	8,9	874.5	29.7	35.4
500.01-1000.00	201	2,2	488.0	16.5	36.2
more than 1000.00	65	0.7	401.8	13.6	41.1
Soy					
Enterprises	8677	100.0	3129.2	100.0	23.1
of them with an area, ha					
up to 100.00	6310	72.7	403.2	12.9	19.5
100.01-200.00	1093	12.6	336.3	10.7	21.4
200.01-500.00	797	9.2	549.2	17.5	22.2
500.01-1000.00	238	2.7	402.2	12.9	24.1
1000.01-2000.00	139	1.6	485.2	15.5	25.2
more than 2000.00	100	1,2	953.1	30.5	24.9
Winter rapeseed and rapeseed (spring rapeseed)					
Enterprises	5178	100.0	3301.2	100.0	28.7
of them with an area, ha					

up to 100.00	2467	47.6	301.4	9.1	25.8
100.01-200.00	1111	21.5	455.5	13.8	27.7
200.01-500.00	1084	20.9	985.4	29.9	28.7
500.01-1000.00	346	6,7	691.1	20.9	29.3
more than 1000.00	170	3.3	867.8	26.3	30.2
Sunflower³					
Enterprises	18182	100.0	9988.8	100.0	22.4
of them with an area, ha					
up to 100.00	10546	58.0	733.0	7.3	18.2
100.01-200.00	2631	14.5	762.4	7.7	19.9
200.01-500.00	2842	15.6	1901.8	19.0	20.9
500.01-1000.00	1262	7.0	1866.8	18.7	21.2
1000.01-2000.00	607	3.3	1836.6	18.4	22.3
2000.01-3000.00	153	0.8	938.1	9.4	25.4
more than 3000.00	141	0.8	1950.1	19.5	27.6
Factory sugar beet					
Enterprises	486	100.0	9508.0	100.0	553.6
of them with an area, ha					

up to 100.00	287	59.1	676.6	7.1	569.2
100.01-200.00	73	15.0	621.4	6.5	577.9
200.01-500.00	64	13.2	1185.7	12.5	623.2
500.01-1000.00	26	5.3	1072.3	11.3	572.1
more than 1000.00	36	7.4	5952.0	62.6	517.9

¹ The data are given without taking into account the territories temporarily occupied by the Russian Federation and part of the territories where hostilities are (were) taking place

² The information was formed on the basis of reports actually submitted by enterprises (the level of reporting was 82%) and additional assessments of indicators. Data can be refined

³ The volume of production is given in mass after completion

Source: compiled by the authors based on the materials of the State Statistics Service of Ukraine. URL: <https://ukrstat.gov.ua>

Agricultural production by species (in constant prices of 2016)

	2010	2015	2019	2020	2021	2022
Millions of hryvnias						
Product rural economy	467474.7	596832.8	680982.4	612121.5	712566.3	534380.3
product crop production	329646.3	453016.9	538705.6	473377.0	580267.7	417907.6
grain crops and leguminous	126803.3	193390.3	239728.2	207778.6	274271.9	172463.5
technical cultures	98164.6	149263.1	194847.6	162374.8	199836.0	160400.4
potatoes, vegetable and melon food crops	67679.7	77346.2	77753.1	78861.4	80747.7	69413.6
fruit and berry crops, grapes	12757.9	14799.3	14564.1	13410.0	14366.9	13011.5
fodder crops	11048.0	10103.6	8618.2	8128.9	8064.4	7045.0
other plant products	13192.8	8114.4	3194.4	2823.3	2980.8	-4426.4
Product livestock	137828.4	143815.9	142276.8	138744.5	132298.6	116472.7
farm animals (breeding)	64717.5	70153.8	74165.4	73409.7	71663.4	63767.1
milk	50104.2	47320.7	42978.0	41199.6	38766.3	34543.9
eggs	19797.5	19498.0	19362.7	18770.2	16337.0	13841.3
wool	103.0	55.0	42.6	38.8	36.7	30.4
other livestock products	3106.2	6788.4	5728.1	5326.2	5495.2	4290.0
As a percentage of the total						
Product rural economy	100.0	100.0	100.0	100.0	100.0	100.0
product crop production	70.5	75.9	79.1	77.3	81.4	78.2
grain crops and legumes	27.1	32.4	35.2	33.9	38.5	32.3

technical cultures	21.0	25.0	28.6	26.5	28.0	30.0
potatoes, vegetable and melon food crops	14.5	13.0	11.4	12.9	11.3	13.0
fruit and berry crops, grapes	2.7	2.5	2.1	2.2	2.0	2.4
fodder crops	2.4	1.7	1.3	1.3	1.1	1.3
other products crop production	2.8	1.3	0.5	0.5	0.5	-0.8
Product livestock	29.5	24.1	20.9	22.7	18.6	21.8
farm animals (breeding)	13.8	11.8	10.9	12.0	10.1	11.9
milk	10.7	7.9	6.3	6.7	5.4	6.5
eggs	4.2	3.3	2.8	3.1	2.3	2.6
wool	0.0	0.0	0.0	0.0	0.0	0.0
other products animal husbandry	0.8	1.1	0.9	0.9	0.8	0.8

Source: Statistical collection "Agriculture of Ukraine". 2022. URL:
https://ukrstat.gov.ua/druk/publicat/kat_u/2023/zb/09/S_gos_22.pdf

Production of agricultural crops by categories of farms and regions in 2022 (thousand tons)

	Enterprises						
	grain and leguminous crops	factory sugar beet	sunflower	potato	vegetable crops	fruit and berry crops	
Ukraine	42315.2	9508.0	9988.8	433.5	444.5	352.6	
oblasts							
Vinnytsya	2930.0	2164.5	717.6	3.5	6.9	95.9	
Volyn	911.0	282.2	85.9	7.0	14.9	7.9	
Dnipropetrovsk	2286.5	–	916.5	41.8	75.6	26.3	
Donetsk	419.4	–	186.5	k	k	1.0	
Zhytomyr	1629.5	148.1	354.4	43.3	4.6	3.0	
Zakarpattya	79.6	–	7.2	0.4	k	15.0	
Zaporizhya	376.4	–	150.7	k	0.5	0.1	
Ivano-Frankivsk	544.0	k	113.6	2.7	5.2	4.2	
Kyiv	2633.0	196.8	463.1	31.3	25.2	19.4	
Kirovohrad	2948.1	502.0	968.8	0.2	3.9	1.2	
Luhansk	8.2	–	0.7	–	–	–	
Lviv	1426.4	1109.2	108.8	115.9	35.6	25.6	
Mykolayiv	1532.6	–	455.8	0.4	21.2	2.4	
Odesa	2155.5	–	481.3	3.1	106.2	5.8	
Poltava	4105.8	1019.5	1127.4	9.1	3.2	5.2	
Rivne	948.2	973.6	123.2	3.3	11.0	0.3	

Sumy	3198.2	–	857.7	10.4	2.1	1.0
Ternopil	2047.9	1188.1	335.3	21.2	17.3	42.8
Kharkiv	1872.5	–	628.0	1.8	7.4	1.8
Kherson	145.4	–	16.1	k	k	k
Khmelnytskyi	3044.3	1259.7	574.9	6.8	14.5	23.2
Cherkasy	3078.3	455.3	609.5	25.3	78.4	9.6
Chernivtsi	237.3	k	37.9	1.4	1.0	59.6
Chernihiv	3757.1	99.1	667.9	100.3	3.3	1.3

<i>Including farms</i>						
	grain and leguminous crops	factory sugar beet	sunflower	potato	vegetable crops	fruit and berry crops
Ukraine	8407.1	550.2	2078.8	107.6	101.1	140.8
oblasts						
Vinnytsya	695.1	138.3	175.4	1.4	2.3	2.0
Volyn	223.0	95.5	21.6	3.7	13.8	1.5
Dnipropetrovsk	741.4	–	314.7	5.2	17.4	5.0
Donetsk	85.2	–	33.5	–	–	k
Zhytomyr	199.2	1.3	30.7	13.7	0.4	1.9
Zakarpattya	15.6	–	2.1	0.4	0.1	12.8
Zaporizhya	125.1	–	55.1	k	0.4	k
Ivano-Frankivsk	104.1	k	9.0	2.4	3.9	2.8
Kyiv	337.0	18.5	62.9	4.4	17.8	14.8
Kirovohrad	890.2	k	337.3	k	0.3	0.2
Luhansk	2.5	–	0.5	–	–	–
Lviv	263.5	14.4	14.1	17.7	12.2	3.7
Mykolayiv	467.5	–	144.9	k	1.9	0.9
Odesa	665.3	–	138.2	0.1	4.4	2.7
Poltava	843.9	k	183.4	k	0.7	1.0
Rivne	109.6	3.7	7.8	1.3	1.6	0.1
Sumy	481.9	–	100.2	k	0.0	k
Ternopil	295.1	76.9	34.2	7.6	10.1	31.7

Kharkiv	401.4	–	139.9	k	1.8	k
Kherson	31.6	–	4.5	k	–	–
Khmelnytskyi	500.1	100.1	75.2	1.9	9.2	2.1
Cherkasy	455.2	39.9	95.0	0.4	1.9	2.7
Chernivtsi	50.9	–	10.6	1.3	0.8	35.7
Chernihiv	423.1	k	88.0	41.4	0.1	k

Households							
	grain and leguminous crops	factory sugar beet	sunflower	potato	vegetable crops	fruit and berry crops	
Ukraine	11548.5	433.5	1340.0	20465.7	7067.1	1642.2	
oblasts							
Vinnytsya	633.7	188.4	33.3	1743.7	493.5	133.7	
Volyn	447.6	99.0	–	1359.0	276.6	33.5	
Dnipropetrovsk	984.8	–	175.0	752.8	598.5	106.3	
Donetsk	124.9	2.4	41.7	k	k	36.5	
Zhytomyr	357.2	12.5	22.4	1853.6	345.6	47.3	
Zakarpattya	226.7	–	1.1	514.8	k	91.1	
Zaporizhya	393.1	–	77.9	k	106.3	27.3	
Ivano-Frankivsk	299.7	2.4	0.3	1043.5	193.0	53.3	
Kyiv	345.3	4.1	6.0	1527.1	643.5	62.7	
Kirovohrad	938.6	–	342.8	504.2	251.7	27.4	
Luhansk	244.8	–	122.1	207.5	146.7	56.1	
Lviv	478.1	–	–	1715.1	811.8	116.8	
Mykolayiv	601.1	–	167.5	175.8	127.2	15.0	
Odesa	906.7	–	89.6	294.0	170.8	92.4	
Poltava	990.7	52.8	115.6	1252.9	553.9	118.6	
Rivne	455.1	24.4	–	1311.7	263.4	92.6	
Sumy	273.9	–	15.5	881.2	210.5	16.6	
Ternopil	594.7	15.9	–	943.3	264.1	58.5	
Kharkiv	572.4	–	68.7	336.3	271.5	21.5	

Kherson	...	...	...	...	...	...	...
Khmelnytskyi	471.2	28.6	1.7	1172.1	215.1	...	181.3
Cherkasy	580.8	–	48.1	925.8	318.3	...	38.1
Chernivtsi	428.1	–	10.3	624.8	237.3	...	198.1
Chernihiv	199.3	3.1	0.4	1040.9	190.4	...	17.5

Source: Statistical collection “Agriculture of Ukraine”. 2022. URL:
https://ukrstat.gov.ua/druk/publicat/kat_u/2023/zb/09/S_gos_22.pdf

The structure of production of agricultural crops by categories of farms (as a percentage of the total volume)

	2000	2005	2010	2015	2019	2020	2021	2022
	Enterprises							
Cereal and leguminous crops	81.6	75.7	75.8	77.3	79.8	79.6	81.0	78.6
Factory sugar beet	87.8	78.5	92.1	92.5	94.6	94.3	95.4	95.6
Sunflower	87.5	78.8	82.5	85.4	85.8	87.7	86.7	88.2
Potato	1.4	1.2	2.6	2.2	1.8	1.9	2.3	2.1
Vegetable crops	16.9	10.7	11.9	13.9	14.7	15.4	14.1	5.9
Fruit and berry crops	18.2	11.8	16.4	19.1	16.6	16.8	20.8	17.7
	including farms							
Cereal and leguminous crops	5.1	10.7	12.0	12.7	15.3	14.9	16.5	15.6
Factory sugar beet	5.7	8.9	8.4	6.0	4.5	4.6	4.8	5.5
Sunflower	10.0	15.6	17.8	19.4	20.3	18.8	20.2	18.3
Potato	0.3	0.4	0.9	0.6	0.5	0.5	0.6	0.5
Vegetable crops	1.4	2.1	2.6	3.1	3.0	3.0	2.4	1.3
Fruit and berry crops	0.3	0.6	2.1	3.2	4.7	4.5	7.2	7.1
	households							
Cereal and leguminous crops	18.4	24.3	24.2	22.7	20.2	20.4	19.0	21.4
Factory sugar beet	12.2	21.5	7.9	7.5	5.4	5.7	4.6	4.4
Sunflower	12.5	21.2	17.5	14.6	14.2	12.3	13.3	11.8
Potato	98.6	98.8	97.4	97.8	98.2	98.1	97.7	97.9
Vegetable crops	83.1	89.3	88.1	86.1	85.3	84.6	85.9	94.1
Fruit and berry crops	81.8	88.2	83.6	80.9	83.4	83.2	79.2	82.3

Source: Statistical collection "Agriculture of Ukraine". 2022. URL: https://ukrstat.gov.ua/druk/publicat/kat_u/2023/zb/09/S_gos_22.pdf

The structure of production of agricultural crops
by categories of farms by regions in 2022 (as a percentage of the total volume)

	Enterprises						
	grain and leguminous crops	factory sugar beet	sunflower	potato	vegetable crops	fruit and berry crops	
Ukraine	78,6	95.6	88.2	2.1	5.9	17.7	
oblasts							
Vinnitsya	82.2	92.0	95.6	0.2	1.4	41.8	
Volyn	67.1	74.0	100.0	0.5	5.1	19.1	
Dnipropetrovsk	69.9	–	84.0	5.3	11.2	19.8	
Donetsk	77.1	–	81.7	k	k	2.7	
Zhytomyr	82.0	92.2	94.1	2,3	1.3	6.0	
Zakarpattya	26.0	–	86.7	0.1	k	14.1	
Zaporizhya	48.9	–	65.9	k	0.5	0.4	
Ivano-Frankivsk	64.5	k	99.7	0.3	2.6	7.3	
Kyiv	88.4	98.0	98.7	2.0	3.8	23.5	
Kirovohrad	75.9	100.0	73.9	0.0	1.5	4.2	
Luhansk	3.2	–	0.6	–	–	–	
Lviv	74.9	100.0	100.0	6.3	4.2	18.0	
Mykolayiv	71.8	–	73.1	0.2	14.3	13.8	
Odesa	70.4	–	84.3	1.0	38.3	5.9	
Poltava	80.6	95.1	90.7	0.7	0.6	4.2	
Rivne	67.6	97.6	100.0	0.3	4.0	0.3	

Sumy	92.1	–	98.2	1,2	1.0	5.7
Ternopil	77.5	98.7	100.0	2,2	6.1	42.3
Kharkiv	76.6	–	90.1	0.5	2.7	7.7
Kherson	...	–	...	...	...	...
Khmelnytskyi	86.6	97.8	99.7	0.6	6.3	11.4
Cherkasy	84.1	100.0	92.7	2.7	19.8	20.1
Chernivtsi	35.7	k	78.6	0.2	0.4	23.1
Chernihiv	95.0	97.0	99.9	8.8	1.7	6.9

<i>Including farms</i>							
	grain and leguminous crops	factory sugar beet	sunflower	potato	vegetable crops	fruit and berry crops	
Ukraine	15.6	5.5	18.3	0.5	1.3	7.1	
oblasts							
Vinnytsya	19.5	1.4	23.4	0.1	0.5	0.9	
Volyn	16.4	1.0	25.1	0.3	4.7	3.6	
Dnipropetrovsk	22.7	–	28.8	0.7	2.6	3.8	
Donetsk	15.6	–	14.7	–	–	k	
Zhytomyr	10.0	0.0	8.1	0.7	0.1	3.8	
Zakarpattya	5.1	–	25.3	0.1	0.0	12.1	
Zaporizhyya	16.3	–	24.1	k	0.4	k	
Ivano-Frankivsk	12.3	k	7.9	0.2	2.0	4.9	
Kyiv	11.3	0.2	13.4	0.3	2.7	18.0	
Kirovohrad	22.9	k	25.7	k	0.1	0.7	
Luhansk	1.0	–	0.4	–	–	–	
Lviv	13.8	0.1	13.0	1.0	1.4	2.6	
Mykolayiv	21.9	–	23.2	k	1.3	5.2	
Odesa	21.7	–	24.2	0.0	1.6	2.7	
Poltava	16.6	k	14.8	k	0.1	0.8	
Rivne	7.8	0.0	6.3	0.1	0.6	0.1	
Sumy	13.9	–	11.5	k	0.0	k	
Ternopil	11.2	0.8	10.2	0.8	3.6	31.3	

Kharkiv	16.4	-	20.1	k	0.6	k
Kherson	...	-	...	...	-	-
Khmelnytskyi	14.2	1.0	13.0	0.2	4.0	1.0
Cherkasy	12.4	0.4	14.4	0.0	0.5	5.7
Chernivtsi	7.6	-	22.0	0.2	0.3	13.9
Chernihiv	10.7	k	13.2	3.6	0.1	k

Households							
	grain and leguminous crops	factory sugar beet	sunflower	potato	vegetable crops	fruit and berry crops	
Ukraine	21, 4	4.4	11.8	97.9	94.1	82.3	
oblasts							
Vinnytsya	17.8	8.0	4.4	99.8	98.6	58.2	
Volyn	32.9	26.0	–	99.5	94.9	80.9	
Dnipropetrovsk	30.1	–	16.0	94.7	88.8	80.2	
Donetsk	22.9	100.0	18.3	k	k	97.3	
Zhytomyr	18.0	7.8	5.9	97.7	98.7	94.0	
Zakarpattya	74.0	–	13.3	99.9	k	85.9	
Zaporizhyya	51.1	–	34.1	k	99.5	99.6	
Ivano-Frankivsk	35.5	k	0.3	99.7	97.4	92.7	
Kyiv	11.6	2.0	1.3	98.0	96.2	76.5	
Kirovohrad	24.1	–	26.1	100.0	98.5	95.8	
Luhansk	96.8	–	99.4	100.0	100.0	100.0	
Lviv	25.1	–	–	93.7	95.8	82.0	
Mykolayiv	28.2	–	26.9	99.8	85.7	86.2	
Odesa	29.6	–	15.7	99.0	61.7	94.1	
Poltava	19.4	4.9	9.3	99.3	99.4	95.8	
Rivne	32.4	2.4	–	99.7	96.0	99.7	
Sumy	7.9	–	1.8	98.8	99.0	94.3	
Ternopil	22.5	1.3	–	97.8	93.9	57.7	
Kharkiv	23.4	–	9.9	99.5	97.3	92.3	

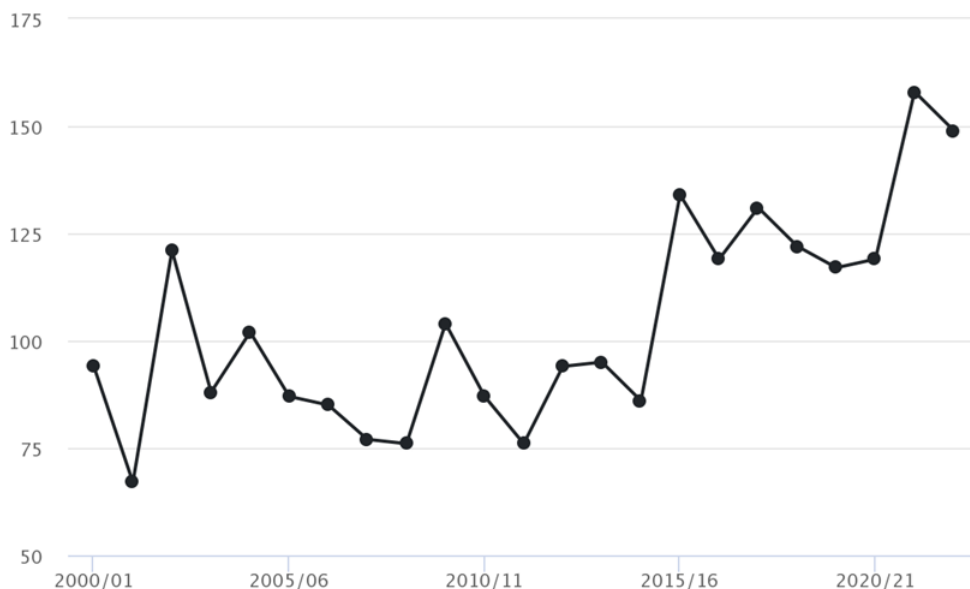
Kherson	...	...	...	...	...	...	...	...
Khmelnyskiy	13.4	2.2	0.3	99.4	93.7	88.6	...	...
Cherkasy	15.9	–	7.3	97.3	80.2	79.9	...	...
Chernivtsi	64.3	–	21.4	99.8	99.6	76.9	...	...
Chernihiv	5.0	3.0	0.1	91.2	98.3	93.1	...	...

Source: Statistical collection “Agriculture of Ukraine”. 2022. URL:
https://ukrstat.gov.ua/druk/publicat/kat_u/2023/zb/09/S_gos_22.pdf

Cereals: Walnut
World

Indicator	2022/23	+/-
Initial stocks	149	-9 (-5.7%)
Imports	976	+48 (+5.2%)
Production	2604	+289 (+12.5%)
Export	1047	+48 (+4.8%)
Offer	3729	+328 (+9.6%)
Consumption	2565	+311 (+13.8%)
Ending stocks	117	-32 (-21.5%)

Walnut. Initial stocks

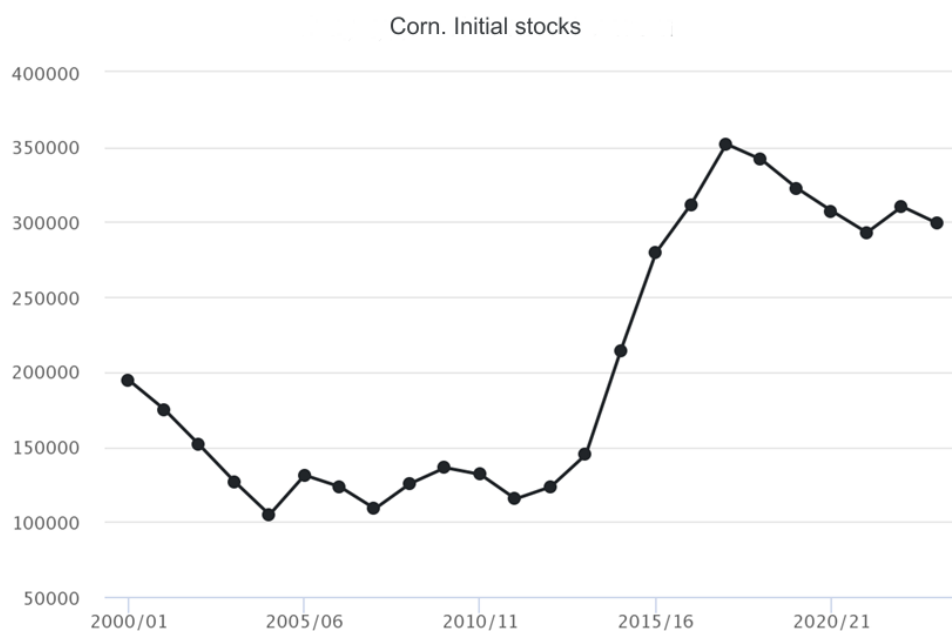


No	Share	Geo	2022/23	+/-
1	36.9%	USA	55	-34 (-38.2%)
2	26.8%	EU	40	0 (0.0%)
3	24.2%	Ukraine	36	+25 (+227.3%)
4	9.4%	India	14	0 (0.0%)
5	2.0%	Chile	3	0 (0.0%)
6	0.7%	Turkey	1	0 (0.0%)

Source: GrainUkraine - agricultural market statistics. URL:
<https://bogdantymkiv.com/country/UA/>

Crops : Corn World

Indicator	2023/24	+/-
Initial stocks	299223	-11117 (-3.6%)
Imports	189873	+17661 (+10.3%)
Import TR	191003	+18209 (+10.5%)
Production	1220794	+63713 (+5.5%)
Export	199624	+18680 (+10.3%)
Export TR	197367	+16787 (+9.3%)
Collected area	203761	+3210 (+1.6%)
Offer	1709890	+70257 (+4.3%)
Consumption	1195278	+35812 (+3.1%)
Feed consumption	759777	+29141 (+4.0%)
Consumption of CHN	435501	+6671 (+1.6%)
Ending stocks	314988	+15765 (+5.3%)



No	Share	Geo	2023/24	+/-
1	68.9%	China	206040	-3097 (-1.5%)
2	11.6%	USA	34579	-396 (-1.1%)
3	3.4%	Brazil	10271	+6300 (+158.7%)
4	2.4%	EU	7182	-4208 (-36.9%)
5	1.4%	Mexico	4140	+977 (+30.9%)
6	0.8%	India	2480	+85 (+3.5%)
7	0.8%	Ukraine	2413	-5180 (-68.2%)
8	0.8%	South Africa	2254	+300 (+15.4%)
9	0.6%	South Korea	1897	-159 (-7.7%)
10	0.6%	Paraguay	1653	+25 (+1.5%)
11	0.5%	Canada	1628	-1118 (-40.7%)
12	0.5%	Egypt	1496	-61 (-3.9%)
13	0.5%	Nigeria	1347	-115 (-7.9%)
14	0.4%	Japan	1298	-62 (-4.6%)
15	0.4%	Iran	1256	-200 (-13.7%)
16	0.4%	Indonesia	1221	-146 (-10.7%)
17	0.4%	Argentina	1108	-690 (-38.4%)
18	0.4%	Tanzania	1103	-310 (-21.9%)
19	0.3%	Ethiopia	973	+203 (+26.4%)
20	0.3%	Pakistan	937	-591 (-38.7%)
21	0.3%	russia	908	-18 (-1.9%)
22	0.3%	Vietnam	813	-127 (-13.5%)
23	0.3%	Angola	768	-162 (-17.4%)
24	0.2%	Serbia	663	-187 (-22.0%)
25	0.2%	Ghana	634	+44 (+7.5%)
26	0.2%	Taiwan	549	-130 (-19.1%)
27	0.2%	Philippines	484	+75 (+18.3%)
28	0.2%	Turkey	479	-168 (-26.0%)
29	0.2%	Zambia	465	-1036 (-69.0%)
30	0.1%	Saudi Arabia	430	+15 (+3.6%)
31	0.1%	Thailand	391	+55 (+16.4%)
32	0.1%	Mali	378	+33 (+9.6%)
33	0.1%	Algeria	320	+91 (+39.7%)
34	0.1%	Colombia	297	-101 (-25.4%)
35	0.1%	Malawi	268	-173 (-39.2%)
36	0.1%	Guatemala	260	+13 (+5.3%)
37	0.1%	Uganda	243	+5 (+2.1%)
38	0.1%	Burkina Faso	242	-5 (-2.0%)
39	0.1%	Peru	239	+15 (+6.7%)
40	0.1%	Congo-Kinshasa	231	-30 (-11.5%)
41	0.1%	Malaysia	194	-50 (-20.5%)
42	0.1%	Senegal	190	-12 (-5.9%)
43	0.1%	Moldova	186	-307 (-62.3%)
44	0.1%	El Salvador	184	-8 (-4.2%)

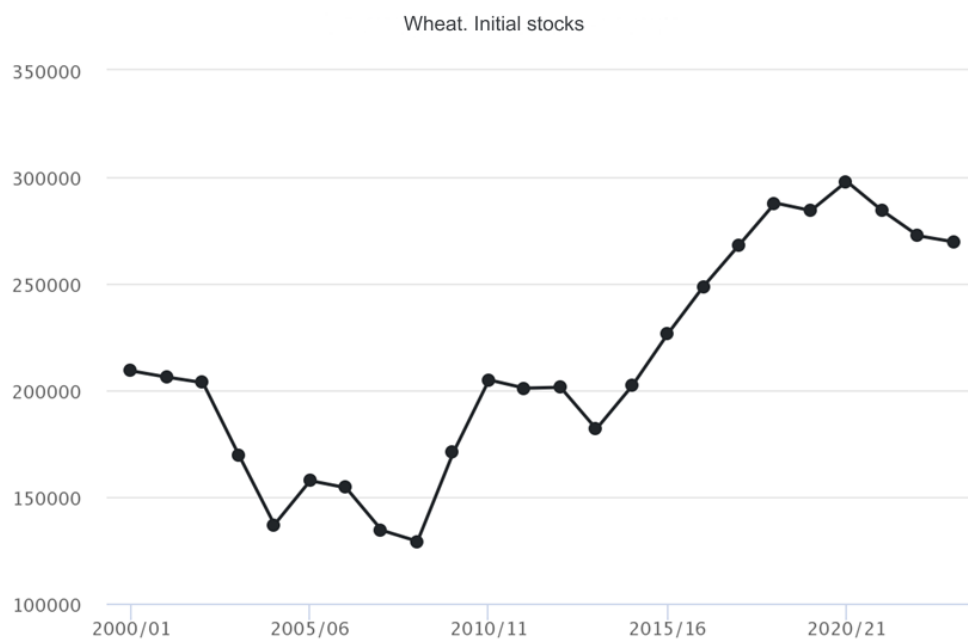
45	0.1%	Cameroon	182	+25 (+15.9%)
46	0.1%	Benin	179	-4 (-2.2%)
47	0.1%	Bangladesh	177	-12 (-6.3%)
48	0.1%	Mozambique	170	+50 (+41.7%)
49	0.1%	Honduras	161	-18 (-10.1%)
50	0.1%	Kazakhstan	160	+11 (+7.4%)
51	0.1%	Nepal	153	-80 (-34.3%)
52	0.0%	Zimbabwe	128	+23 (+21.9%)
53	0.0%	Great Britain	126	-122 (-49.2%)
54	0.0%	Kenya	123	-133 (-52.0%)
55	0.0%	Myanmar	121	+60 (+98.4%)
56	0.0%	Israel	120	-10 (-7.7%)
57	0.0%	Bolivia	119	0 (0.0%)
58	0.0%	Iraq	119	-22 (-15.6%)
59	0.0%	Bosnia-Herzegovina	116	-33 (-22.1%)
60	0.0%	Chile	114	-45 (-28.3%)
61	0.0%	Cambodia	113	+6 (+5.6%)
62	0.0%	Kyrgyzstan	105	+9 (+9.4%)
63	0.0%	Ivory Coast	93	-15 (-13.9%)
64	0.0%	Belarus	89	+15 (+20.3%)
65	0.0%	Ecuador	88	+44 (+100.0%)
66	0.0%	Dominican Republic	84	-9 (-9.7%)
67	0.0%	Laos	78	-10 (-11.4%)
68	0.0%	Venezuela	77	0 (0.0%)
69	0.0%	Togo	73	-3 (-3.9%)
70	0.0%	Rwanda	70	-10 (-12.5%)
71	0.0%	Uzbekistan	70	+12 (+20.7%)
72	0.0%	Guinea	69	-5 (-6.8%)
73	0.0%	Morocco	66	-28 (-29.8%)
74	0.0%	Nicaragua	58	-25 (-30.1%)
75	0.0%	Panama	53	-12 (-18.5%)
76	0.0%	Tunisia	53	-14 (-20.9%)
77	0.0%	Libya	52	0 (0.0%)
78	0.0%	Tajikistan	45	+5 (+12.5%)
79	0.0%	Costa Rica	43	+11 (+34.4%)
80	0.0%	Australia	42	+7 (+20.0%)
81	0.0%	Georgia	41	-6 (-12.8%)
82	0.0%	Uruguay	41	-84 (-67.2%)
83	0.0%	Namibia	32	-11 (-25.6%)
84	0.0%	New Zealand	32	-28 (-46.7%)
85	0.0%	Chad	27	+9 (+50.0%)
86	0.0%	Yemen	26	-5 (-16.1%)
87	0.0%	Jordan	25	0 (0.0%)
88	0.0%	Switzerland	25	0 (0.0%)
89	0.0%	Azerbaijan	23	-1 (-4.2%)

90	0.0%	Sri Lanka	23	-7 (-23.3%)
91	0.0%	Jamaica	22	+3 (+15.8%)
92	0.0%	Syria	21	-24 (-53.3%)
93	0.0%	Lebanon	18	+3 (+20.0%)
94	0.0%	Oman	18	-14 (-43.8%)
95	0.0%	UAE	16	0 (0.0%)
96	0.0%	Trinidad and Tobago	14	-6 (-30.0%)
97	0.0%	Macedonia	12	0 (0.0%)
98	0.0%	Cuba	11	-2 (-15.4%)
99	0.0%	Kuwait	10	0 (0.0%)
100	0.0%	Madagascar	5	-1 (-16.7%)

Source: GrainUkraine - agricultural market statistics. URL: <https://bogdantymkiv.com/country/UA/>

Crops : Wheat World

Indicator	2023/24	+/-
Initial stocks	269547	-2864 (-1.1%)
Imports	204704	-7268 (-3.4%)
Import TR	204608	-6390 (-3.0%)
Production	781980	-7513 (-1.0%)
Export	205010	-15414 (-7.0%)
Export TR	208969	-7350 (-3.4%)
Collected area	223046	+2439 (+1.1%)
Offer	1256231	-17645 (-1.4%)
Consumption	792536	+8631 (+1.1%)
Feed consumption	157791	+2683 (+1.7%)
Consumption of CHN	634745	+5948 (+0.9%)
Ending stocks	258685	-10862 (-4.0%)



No	Share	Geo	2023/24	+/-
1	51.5%	China	138818	+2059 (+1.5%)
2	6.1%	EU	16519	+3209 (+24.1%)
3	5.9%	USA	15828	-3180 (-16.7%)
4	5.4%	russia	14638	+2550 (+21.1%)
5	3.5%	India	9500	-10000 (-51.3%)
6	1.8%	Egypt	4840	-490 (-9.2%)
7	1.8%	Algeria	4776	+371 (+8.4%)
8	1.7%	Iran	4486	-600 (-11.8%)
9	1.5%	Turkey	4084	+1847 (+82.6%)
10	1.5%	Argentina	3931	+2005 (+104.1%)
11	1.4%	Pakistan	3830	-700 (-15.5%)
12	1.4%	Canada	3658	-5 (-0.1%)
13	1.3%	Australia	3513	+59 (+1.7%)
14	1.2%	Saudi Arabia	3349	+1302 (+63.6%)
15	1.2%	Kazakhstan	3271	+1780 (+119.4%)
16	0.9%	Great Britain	2496	+650 (+35.2%)
17	0.7%	Brazil	1822	+639 (+54.0%)
18	0.6%	South Korea	1618	+36 (+2.3%)
19	0.6%	Uzbekistan	1584	+720 (+83.3%)
20	0.6%	Morocco	1533	-852 (-35.7%)
21	0.6%	Syria	1489	-150 (-9.2%)
22	0.5%	Ukraine	1302	-3963 (-75.3%)
23	0.5%	Indonesia	1253	-405 (-24.4%)
24	0.4%	Japan	1125	-51 (-4.3%)
25	0.4%	Philippines	1096	-279 (-20.3%)
26	0.4%	Afghanistan	1084	+250 (+30.0%)
27	0.3%	Iraq	909	+286 (+45.9%)
28	0.3%	Bangladesh	833	-480 (-36.6%)
29	0.3%	Serbia	823	+268 (+48.3%)
30	0.3%	Ethiopia	819	-154 (-15.8%)
31	0.3%	Mexico	789	+269 (+51.7%)
32	0.3%	Tunisia	706	+56 (+8.6%)
33	0.2%	Thailand	596	+230 (+62.8%)
34	0.2%	UAE	591	+194 (+48.9%)
35	0.2%	Israel	528	-12 (-2.2%)
36	0.2%	Colombia	515	+76 (+17.3%)
37	0.2%	Yemen	503	+204 (+68.2%)
38	0.2%	Jordan	485	-54 (-10.0%)
39	0.2%	Malaysia	420	-81 (-16.2%)
40	0.2%	Belarus	413	-86 (-17.2%)
41	0.1%	Kenya	376	+78 (+26.2%)
42	0.1%	Turkmenistan	368	+52 (+16.5%)
43	0.1%	Nigeria	360	-258 (-41.7%)
44	0.1%	Oman	359	+101 (+39.1%)

45	0.1%	South Africa	313	-140 (-30.9%)
46	0.1%	Venezuela	312	-4 (-1.3%)
47	0.1%	Vietnam	311	-429 (-58.0%)
48	0.1%	Sudan	310	-48 (-13.4%)
49	0.1%	Azerbaijan	299	+41 (+15.9%)
50	0.1%	Ecuador	285	+103 (+56.6%)
51	0.1%	Libya	285	+178 (+166.4%)
52	0.1%	Tajikistan	283	-54 (-16.0%)
53	0.1%	Chile	272	+120 (+78.9%)
54	0.1%	Dominican Republic	270	+81 (+42.9%)
55	0.1%	Paraguay	268	-155 (-36.6%)
56	0.1%	New Zealand	263	-23 (-8.0%)
57	0.1%	El Salvador	253	+78 (+44.6%)
58	0.1%	Peru	234	-112 (-32.4%)
59	0.1%	Norway	233	-107 (-31.5%)
60	0.1%	Kyrgyzstan	222	+118 (+113.5%)
61	0.1%	Switzerland	217	+78 (+56.1%)
62	0.1%	Ghana	216	-156 (-41.9%)
63	0.1%	Angola	183	+22 (+13.7%)
64	0.1%	Armenia	182	+83 (+83.8%)
65	0.1%	Senegal	181	+71 (+64.5%)
66	0.1%	Ivory Coast	160	+30 (+23.1%)
67	0.1%	Moldova	157	-15 (-8.7%)
68	0.1%	Uruguay	139	+93 (+202.2%)
69	0.0%	Bolivia	122	-36 (-22.8%)
70	0.0%	Sri Lanka	120	-48 (-28.6%)
71	0.0%	Tanzania	114	+45 (+65.2%)
72	0.0%	Taiwan	109	-90 (-45.2%)
73	0.0%	Mozambique	106	+39 (+58.2%)
74	0.0%	Guatemala	101	-56 (-35.7%)
75	0.0%	Bosnia-Herzegovina	98	-13 (-11.7%)
76	0.0%	Zimbabwe	88	+23 (+35.4%)
77	0.0%	Guinea	86	+12 (+16.2%)
78	0.0%	Georgia	80	+38 (+90.5%)
79	0.0%	Myanmar	77	+12 (+18.5%)
80	0.0%	Costa Rica	65	-30 (-31.6%)
81	0.0%	Mali	61	+35 (+134.6%)
82	0.0%	Zambia	59	+24 (+68.6%)
83	0.0%	Mauritania	52	-2 (-3.7%)
84	0.0%	Nicaragua	45	0 (0.0%)
85	0.0%	Papua New Guinea	44	-22 (-33.3%)
86	0.0%	Congo-Kinshasa	43	-32 (-42.7%)
87	0.0%	Lebanon	43	-5 (-10.4%)

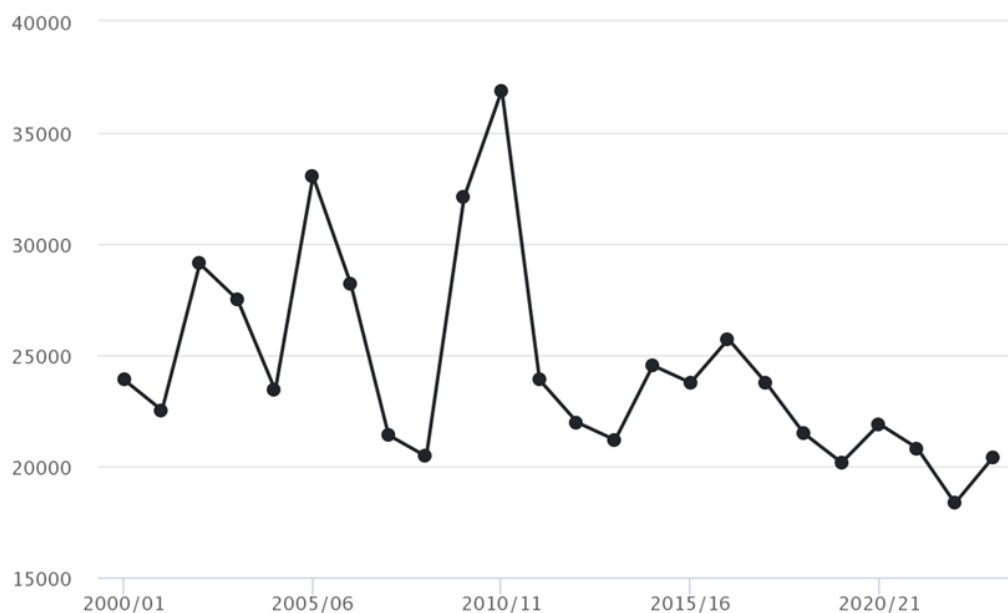
88	0.0%	Macedonia	36	+7 (+24.1%)
89	0.0%	Rwanda	35	-16 (-31.4%)
90	0.0%	Uganda	34	-19 (-35.8%)
91	0.0%	Namibia	33	+23 (+230.0%)
92	0.0%	Togo	30	-5 (-14.3%)
93	0.0%	Albania	29	+2 (+7.4%)
94	0.0%	Bahrain	23	-2 (-8.0%)
95	0.0%	Mauritius	20	-17 (-45.9%)
96	0.0%	Haiti	19	-20 (-51.3%)
97	0.0%	Honduras	18	-15 (-45.5%)
98	0.0%	Fiji	17	-5 (-22.7%)
99	0.0%	Cameroon	11	+6 (+120.0%)
100	0.0%	Singapore	11	-40 (-78.4%)
101	0.0%	Guyana	9	0 (0.0%)
102	0.0%	Burkina Faso	8	-2 (-20.0%)
103	0.0%	Malawi	8	+1 (+14.3%)
104	0.0%	Panama	6	0 (0.0%)
105	0.0%	Trinidad and Tobago	3	0 (0.0%)

Source: GrainUkraine - agricultural market statistics. URL: <https://bogdantymkiv.com/country/UA/>

Crop : Barley World

Indicator	2023/24	+/-
Initial stocks	20375	+2045 (+11.2%)
Imports	26916	-4723 (-14.9%)
Import TR	26180	-4112 (-13.6%)
Production	142284	-9252 (-6.1%)
Export	27173	-2920 (-9.7%)
Export TR	26946	-3558 (-11.7%)
Collected area	47365	+129 (+0.3%)
Offer	189575	-11930 (-5.9%)
Consumption	144300	-6737 (-4.5%)
Feed consumption	98355	-7048 (-6.7%)
Consumption of CHN	45945	+311 (+0.7%)
Ending stocks	18102	-2273 (-11.2%)

Barley. Initial stocks



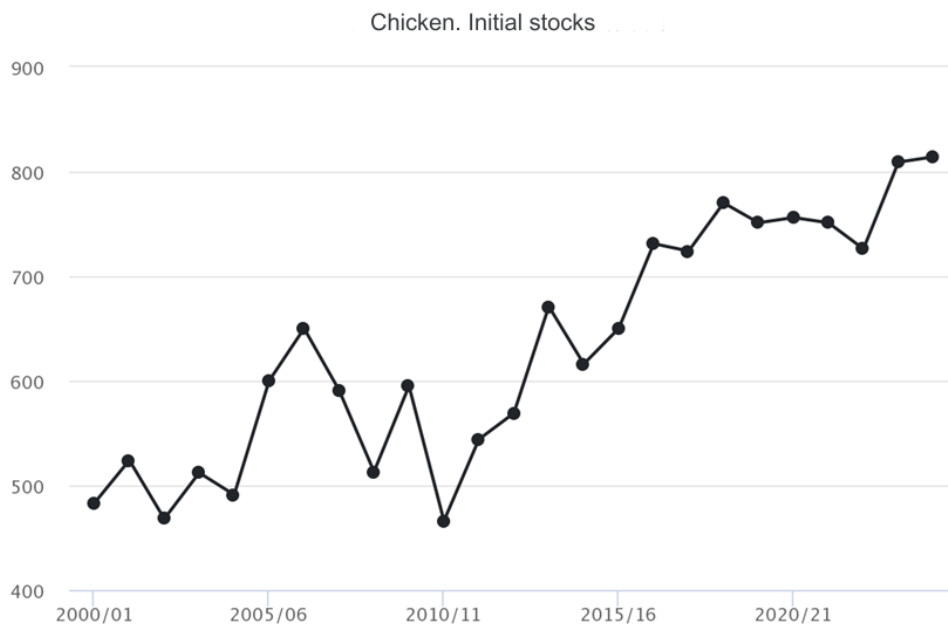
No	Share	Geo	2023/24	+/-
1	27.4%	EU	5576	+346 (+6.6%)
2	18.6%	Australia	3785	+937 (+32.9%)
3	6.3%	Great Britain	1280	+316 (+32.8%)
4	6.2%	USA	1264	+346 (+37.7%)
5	5.2%	russia	1062	+350 (+49.2%)
6	4.8%	Saudi Arabia	980	-11 (-1.1%)
7	3.6%	Turkey	732	+416 (+131.6%)

8	3.5%	Canada	709	+166 (+30.6%)
9	3.3%	Ukraine	670	-210 (-23.9%)
10	2.1%	Argentina	438	-100 (-18.6%)
11	2.1%	Mexico	418	-32 (-7.1%)
12	2.0%	Kazakhstan	413	+100 (+31.9%)
13	1.9%	Iran	382	0 (0.0%)
14	1.4%	Jordan	283	+44 (+18.4%)
15	1.2%	South Africa	251	-33 (-11.6%)
16	1.2%	China	238	-18 (-7.0%)
17	0.9%	Algeria	181	+50 (+38.2%)
18	0.8%	Uruguay	163	+27 (+19.9%)
19	0.8%	Tunisia	157	-55 (-25.9%)
20	0.6%	Japan	124	-47 (-27.5%)
21	0.6%	Ethiopia	123	+19 (+18.3%)
22	0.6%	India	118	+3 (+2.6%)
23	0.5%	Brazil	111	-18 (-14.0%)
24	0.5%	Azerbaijan	106	+3 (+2.9%)
25	0.5%	Belarus	94	+9 (+10.6%)
26	0.3%	Morocco	65	-544 (-89.3%)
27	0.3%	Libya	63	0 (0.0%)
28	0.3%	Norway	62	+2 (+3.3%)
29	0.3%	New Zealand	60	+10 (+20.0%)
30	0.3%	Serbia	58	+30 (+107.1%)
31	0.2%	Kyrgyzstan	43	+30 (+230.8%)
32	0.2%	Syria	41	-50 (-54.9%)
33	0.2%	Colombia	35	+2 (+6.1%)
34	0.2%	Peru	32	+3 (+10.3%)
35	0.1%	Israel	30	0 (0.0%)
36	0.1%	Uzbekistan	30	+13 (+76.5%)
37	0.1%	Iraq	29	-50 (-63.3%)
38	0.1%	Moldova	26	+7 (+36.8%)
39	0.1%	Bosnia-Herzegovina	25	0 (0.0%)
40	0.1%	Armenia	22	+6 (+37.5%)
41	0.1%	Chile	22	-10 (-31.3%)
42	0.1%	South Korea	16	-1 (-5.9%)
43	0.1%	Macedonia	14	-12 (-46.2%)
44	0.1%	Switzerland	13	-1 (-7.1%)
45	0.0%	Afghanistan	10	+3 (+42.9%)
46	0.0%	Vietnam	9	0 (0.0%)
47	0.0%	Pakistan	7	0 (0.0%)
48	0.0%	Zimbabwe	4	0 (0.0%)
49	0.0%	Lebanon	1	-1 (-50.0%)

Source: GrainUkraine - agricultural market statistics. URL: <https://bogdantymkiv.com/country/UA/>

Meat: Chicken World

Indicator	2024/25	+/-
Initial stocks	814	+5 (+0.6%)
Imports	11498	+266 (+2.4%)
Production	103301	+1042 (+1.0%)
Export	14002	+396 (+2.9%)
Offer	115613	+1313 (+1.1%)
Consumption	100820	+940 (+0.9%)
Ending stocks	791	-23 (-2.8%)

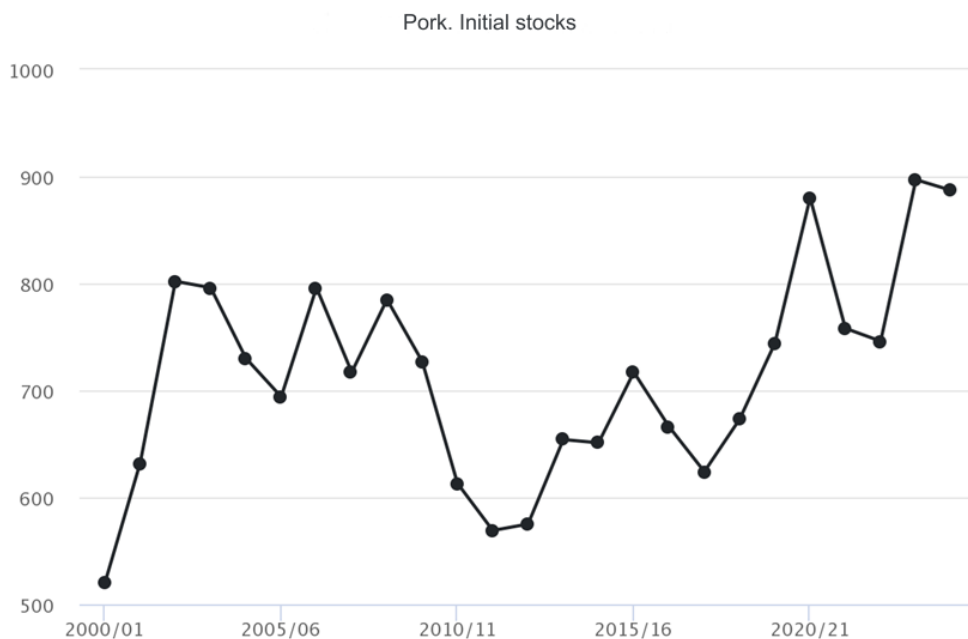


No	Share	Geo	2024/25	+/-
1	48.8%	USA	397	-10 (-2.5%)
2	16.0%	Japan	130	-19 (-12.8%)
3	10.4%	South Korea	85	+15 (+21.4%)
4	8.5%	Thailand	69	+21 (+43.8%)
5	8.0%	Canada	65	+3 (+4.8%)
6	5.3%	Philippines	43	-5 (-10.4%)
7	3.1%	russia	25	0 (0.0%)

Source: GrainUkraine - agricultural market statistics. URL:
<https://bogdantymkiv.com/country/UA/>

Meat: Pork World

Indicator	2024/25	+/-
Initial stocks	887	-10 (-1.1%)
Imports	9749	+108 (+1.1%)
Production	115492	-6 (0.0%)
Export	10365	+221 (+2.2%)
Offer	126128	+92 (+0.1%)
Consumption	114925	-80 (-0.1%)
Ending stocks	838	-49 (-5.5%)

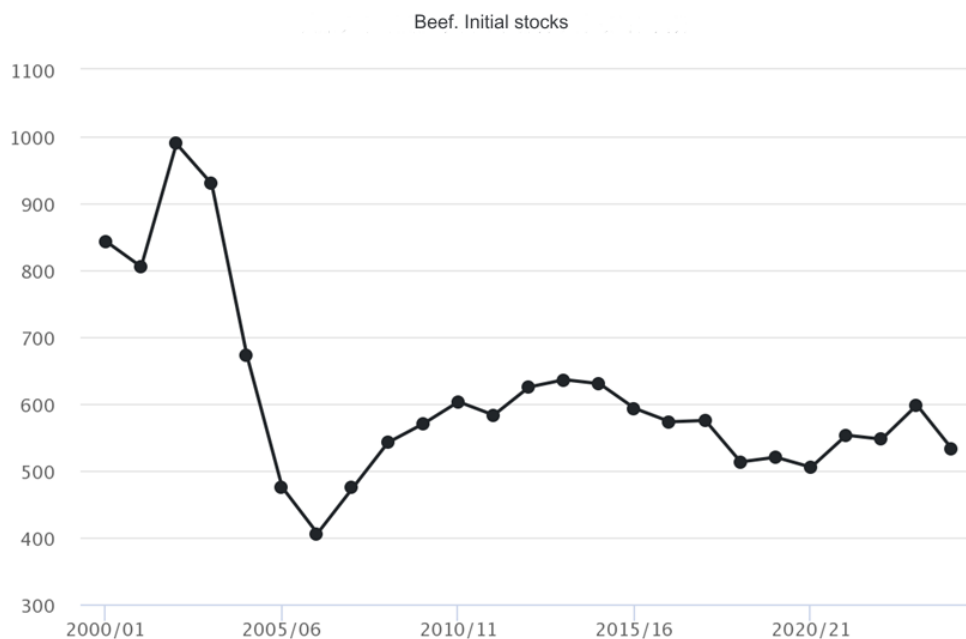


No	Share	Geo	2024/25	+/-
1	32.7%	Japan	290	+23 (+8.6%)
2	24.8%	South Korea	220	-3 (-1.3%)
3	24.6%	USA	218	-11 (-4.8%)
4	9.6%	Philippines	85	-14 (-14.1%)
5	8.3%	Canada	74	-5 (-6.3%)

Source: GrainUkraine - agricultural market statistics. URL: <https://bogdantymkiv.com/country/UA/>

Meat: Beef World

Indicator	2024/25	+/-
Initial stocks	532	-66 (-11.0%)
Imports	10212	-139 (-1.3%)
Production	59133	-180 (-0.3%)
Export	11910	+175 (+1.5%)
Offer	69877	-385 (-0.5%)
Consumption	57445	-550 (-0.9%)
Ending stocks	522	-10 (-1.9%)

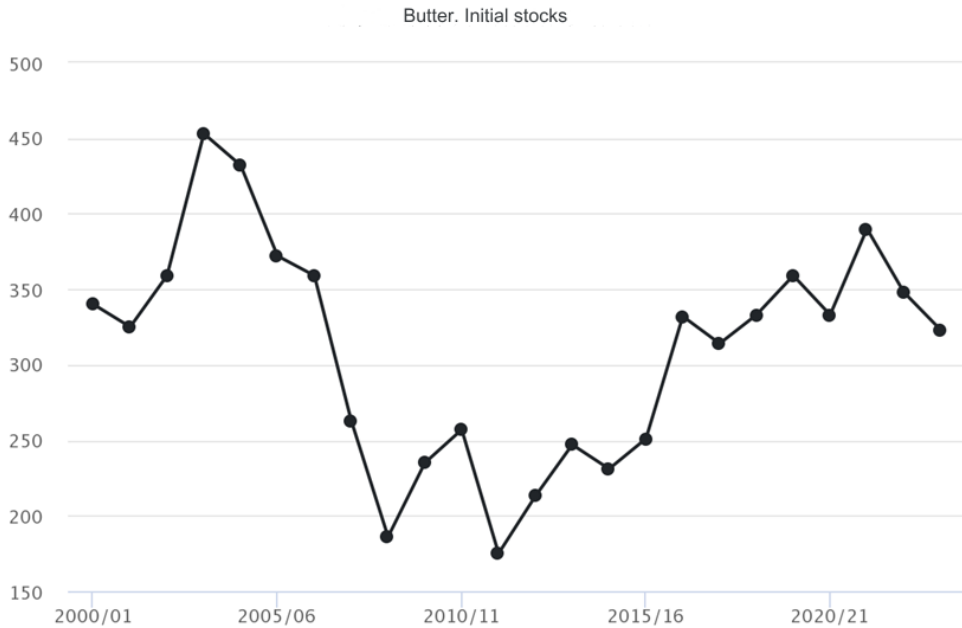


No	Share	Geo	2024/25	+/-
1	51.3%	USA	273	-56 (-17.0%)
2	39.3%	Japan	209	-3 (-1.4%)
3	6.6%	Canada	35	-7 (-16.7%)
4	2.8%	South Korea	15	0 (0.0%)

Source: GrainUkraine - agricultural market statistics. URL: <https://bogdantymkiv.com/country/UA/>

Milk: Butter World

Indicator	2023/24	+/-
Initial stocks	323	-25 (-7.2%)
Imports	624	+14 (+2.3%)
Production	11659	+273 (+2.4%)
Export	1053	-15 (-1.4%)
Offer	12606	+262 (+2.1%)
Consumption	11248	+295 (+2.7%)
Ending stocks	305	-18 (-5.6%)

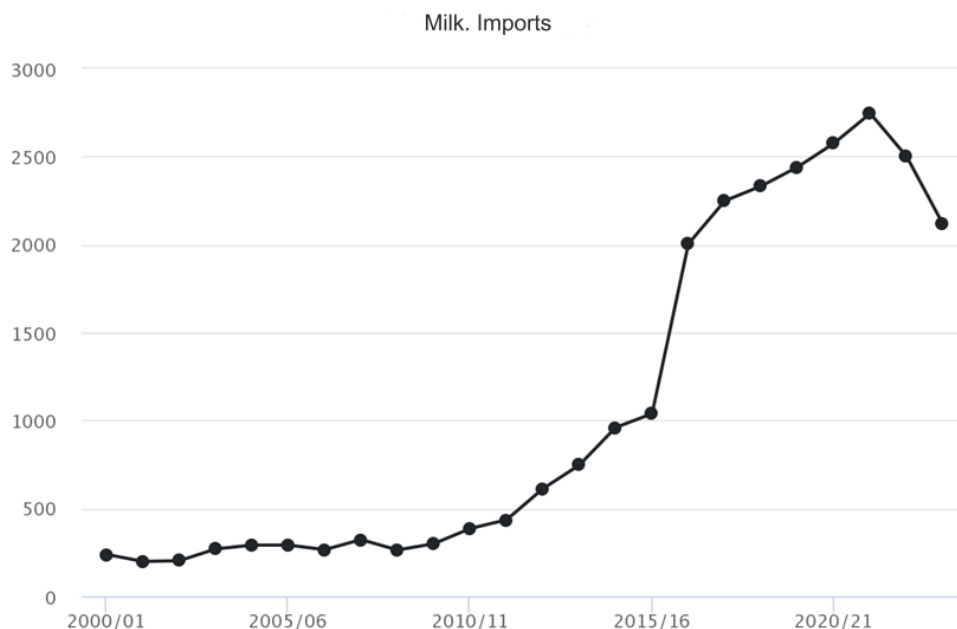


No	Share	Geo	2023/24	+/-
1	30.3%	USA	98	+8 (+8.9%)
2	23.2%	New Zealand	75	-24 (-24.2%)
3	17.6%	Australia	57	-10 (-14.9%)
4	11.5%	Japan	37	0 (0.0%)
5	8.4%	Canada	27	+2 (+8.0%)
6	5.6%	russia	18	+3 (+20.0%)
7	3.1%	Ukraine	10	-4 (-28.6%)
8	0.3%	Argentina	1	0 (0.0%)

Source: GrainUkraine - agricultural market statistics. URL: <https://bogdantymkiv.com/country/UA/>

Milk: milk World

Indicator	2023/24	+/-
Imports	2115	-385 (-15.4%)
Production	667283	+8523 (+1.3%)
Export	3163	-111 (-3.4%)
Offer	669398	+8138 (+1.2%)
Consumption	666235	+8249 (+1.3%)



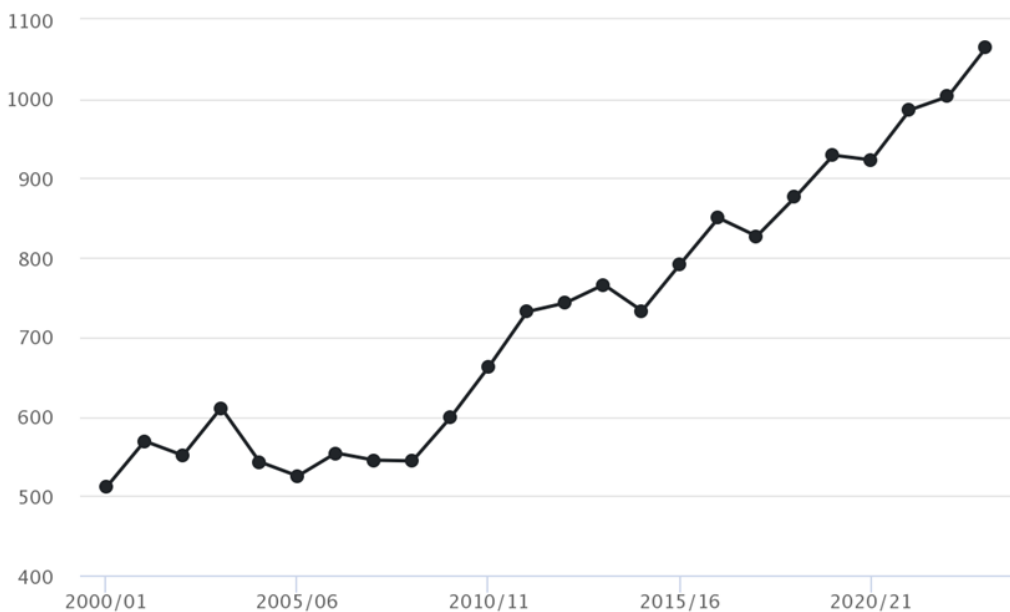
No	Share	Geo	2023/24	+/-
1	33.1%	China	700	-277 (-28.4%)
2	33.1%	EU	700	+26 (+3.9%)
3	9.5%	Great Britain	200	-106 (-34.6%)
4	9.0%	russia	190	-10 (-5.0%)
5	5.0%	Philippines	105	-17 (-13.9%)
6	3.3%	Taiwan	70	+8 (+12.9%)
7	3.1%	Canada	65	0 (0.0%)
8	2.4%	USA	50	+4 (+8.7%)
9	0.5%	South Korea	10	0 (0.0%)
10	0.2%	Australia	5	-2 (-28.6%)
11	0.2%	Belarus	5	+3 (+150.0%)
12	0.2%	Mexico	5	-10 (-66.7%)
13	0.2%	New Zealand	5	0 (0.0%)
14	0.2%	Ukraine	5	-4 (-44.4%)

Source: GrainUkraine - agricultural market statistics. URL: <https://bogdantymkiv.com/country/UA/>

Milk: cheese World

Indicator	2023/24	+/-
Initial stocks	1065	+62 (+6.2%)
Imports	2193	+57 (+2.7%)
Production	22427	+271 (+1.2%)
Export	2974	+56 (+1.9%)
Offer	25685	+390 (+1.5%)
Consumption	21673	+361 (+1.7%)
Ending stocks	1038	-27 (-2.5%)

Cheese. Initial stocks

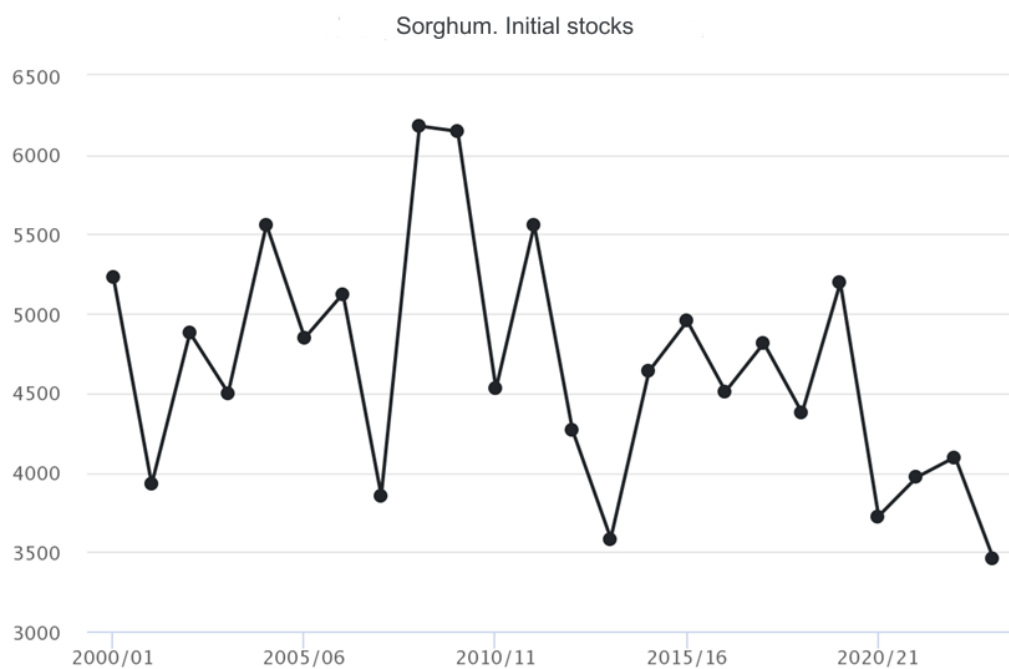


No	Share	Geo	2023/24	+/-
1	62.9%	USA	670	+16 (+2.4%)
2	9.1%	Australia	97	+21 (+27.6%)
3	8.0%	Canada	85	+2 (+2.4%)
4	6.6%	New Zealand	70	+6 (+9.4%)
5	5.0%	Argentina	53	+23 (+76.7%)
6	3.8%	russia	40	0 (0.0%)
7	2.4%	South Korea	26	+3 (+13.0%)
8	0.9%	Japan	10	-5 (-33.3%)
9	0.7%	Belarus	7	-4 (-36.4%)
10	0.7%	Ukraine	7	0 (0.0%)

Source: GrainUkraine - agricultural market statistics. URL: <https://bogdantymkiv.com/country/UA/>

Niches: sorghum World

Indicator	2023/24	+/-
Initial stocks	3458	-639 (-15.6%)
Imports	8488	+2385 (+39.1%)
Import TR	8483	+2374 (+38.9%)
Production	59920	+4832 (+8.8%)
Export	8676	+2283 (+35.7%)
Export TR	9083	+2177 (+31.5%)
Collected area	41745	+2084 (+5.3%)
Offer	71866	+6578 (+10.1%)
Consumption	59488	+4051 (+7.3%)
Feed consumption	22478	+3592 (+19.0%)
Consumption of CHN	37010	+459 (+1.3%)
Ending stocks	3702	+244 (+7.1%)



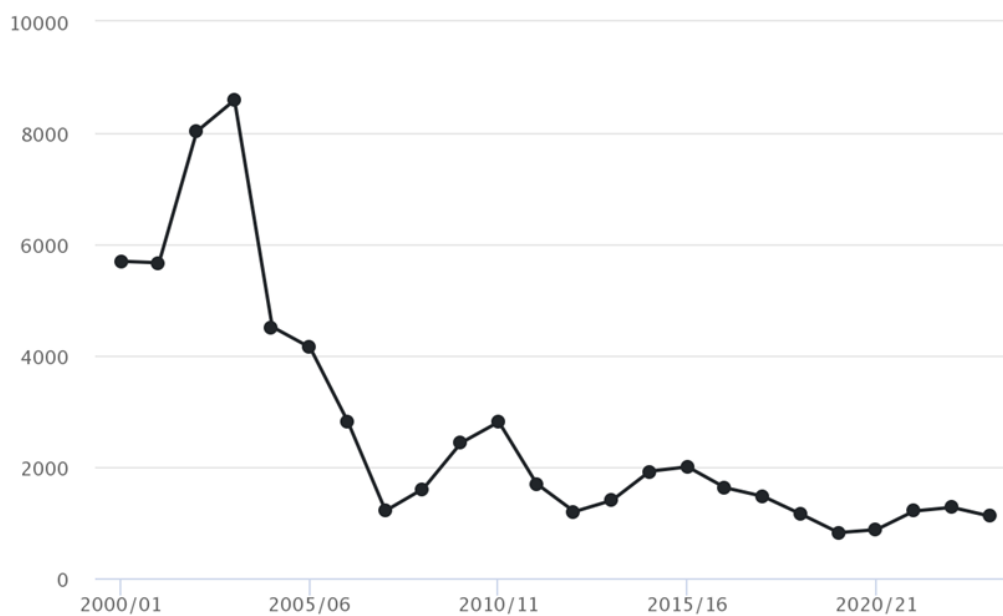
No	Share	Geo	2023/24	+/-
1	17.8%	USA	616	-585 (-48.7%)
2	10.1%	Brazil	348	+36 (+11.5%)
3	8.7%	Sudan	302	+154 (+104.1%)
4	8.3%	China	288	+33 (+12.9%)
5	7.8%	Mexico	270	-33 (-10.9%)
6	5.2%	Argentina	181	-40 (-18.1%)
7	5.1%	Niger	178	+125 (+235.8%)
8	5.1%	Mali	176	+32 (+22.2%)
9	5.0%	Nigeria	174	+42 (+31.8%)
10	4.7%	Bolivia	164	+53 (+47.7%)
11	4.7%	Burkina Faso	163	+59 (+56.7%)
12	3.6%	Australia	126	-205 (-61.9%)
13	3.6%	India	123	-136 (-52.5%)
14	2.6%	Chad	89	+17 (+23.6%)
15	2.1%	Ethiopia	73	-98 (-57.3%)
16	1.5%	Tanzania	51	-30 (-37.0%)
17	0.7%	Japan	24	0 (0.0%)
18	0.6%	Kenya	21	+2 (+10.5%)
19	0.5%	South Africa	19	-13 (-40.6%)
20	0.4%	South Sudan	15	0 (0.0%)
21	0.4%	Uganda	15	-5 (-25.0%)
22	0.4%	EU	14	-3 (-17.6%)
23	0.3%	Egypt	11	0 (0.0%)
24	0.2%	Ukraine	8	-40 (-83.3%)
25	0.1%	Uruguay	5	-4 (-44.4%)
26	0.1%	Guatemala	4	0 (0.0%)

Source: GrainUkraine - agricultural market statistics. URL: <https://bogdantymkiv.com/country/UA/>

Niches: rye World

Indicator	2023/24	+/-
Initial stocks	1116	-156 (-12.3%)
Imports	482	+21 (+4.6%)
Import TR	452	+8 (+1.8%)
Production	11688	-600 (-4.9%)
Export	456	-24 (-5.0%)
Export TR	456	-13 (-2.8%)
Collected area	3607	-94 (-2.5%)
Offer	13286	-735 (-5.2%)
Consumption	11849	-576 (-4.6%)
Feed consumption	5622	-239 (-4.1%)
Consumption of CHN	6227	-337 (-5.1%)
Ending stocks	981	-135 (-12.1%)

Rye. Initial stocks



No	Share	Geo	2023/24	+/-
1	62.8%	EU	701	-201 (-22.3%)
2	16.0%	russia	179	+86 (+92.5%)
3	9.4%	Canada	105	+21 (+25.0%)
4	3.9%	Ukraine	44	-70 (-61.4%)
5	3.3%	Belarus	37	+3 (+8.8%)
6	2.8%	USA	31	+15 (+93.8%)
7	1.3%	Turkey	14	-10 (-41.7%)
8	0.4%	Kazakhstan	4	0 (0.0%)
9	0.1%	Japan	1	0 (0.0%)

Source: GrainUkraine - agricultural market statistics. URL: <https://bogdantymkiv.com/country/UA/>

Niches: oat World

Indicator	2023/24	+/-
Initial stocks	3444	+1005 (+41.2%)
Imports	2462	-290 (-10.5%)
Import TR	2291	-592 (-20.5%)
Production	20425	-4702 (-18.7%)
Export	2365	-411 (-14.8%)
Export TR	2366	-564 (-19.2%)
Collected area	8391	-940 (-10.1%)
Offer	26331	-3987 (-13.2%)
Consumption	21876	-2222 (-9.2%)
Feed consumption	14192	-2130 (-13.0%)
Consumption of CHN	7684	-92 (-1.2%)
Ending stocks	2090	-1354 (-39.3%)

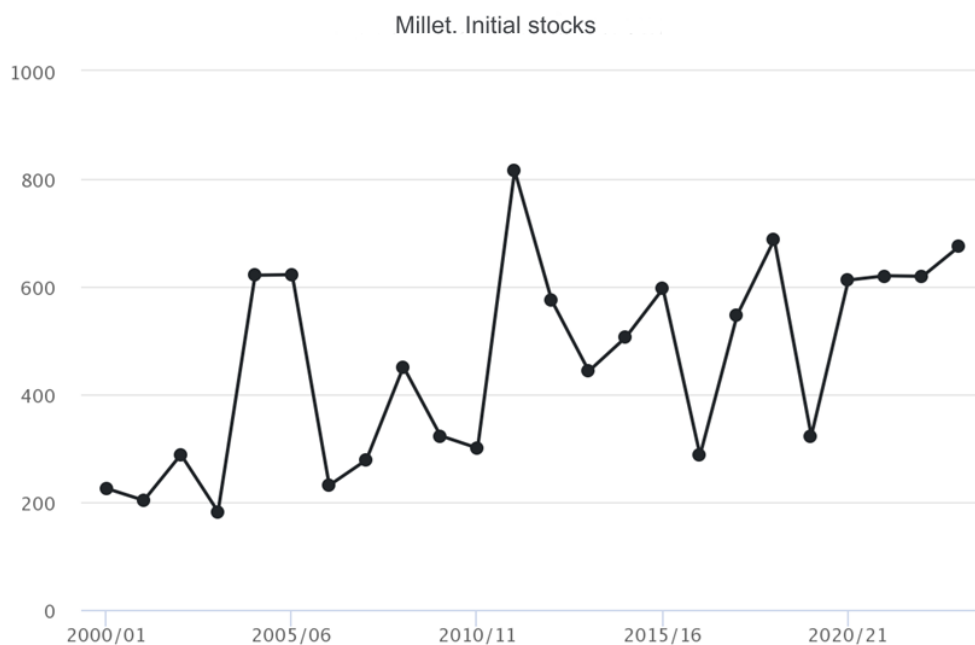


No	Share	Geo	2023/24	+/-
1	37.0%	Canada	1275	+942 (+282.9%)
2	14.7%	USA	505	+31 (+6.5%)
3	14.5%	EU	498	+103 (+26.1%)
4	9.3%	Australia	322	-73 (-18.5%)
5	5.0%	russia	173	+51 (+41.8%)
6	4.1%	Great Britain	140	-17 (-10.8%)
7	4.0%	China	138	+13 (+10.4%)
8	2.3%	Brazil	78	-5 (-6.0%)
9	2.2%	Kazakhstan	75	+19 (+33.9%)
10	1.6%	Argentina	54	-21 (-28.0%)
11	1.0%	Chile	34	0 (0.0%)
12	0.9%	Norway	30	0 (0.0%)
13	0.7%	Ukraine	24	-30 (-55.6%)
14	0.6%	Turkey	22	-1 (-4.3%)
15	0.6%	Belarus	21	0 (0.0%)
16	0.6%	South Africa	21	-2 (-8.7%)
17	0.4%	Mexico	14	-2 (-12.5%)
18	0.3%	Switzerland	10	-3 (-23.1%)
19	0.2%	Bosnia- Herzegovina	6	0 (0.0%)
20	0.1%	New Zealand	3	0 (0.0%)
21	0.0%	Japan	1	0 (0.0%)

Source: GrainUkraine - agricultural market statistics. URL: <https://bogdantymkiv.com/country/UA/>

Niches: millet World

Indicator	2023/24	+/-
Initial stocks	675	+56 (+9.0%)
Production	30752	-1342 (-4.2%)
Collected area	31279	+584 (+1.9%)
Offer	31427	-1286 (-3.9%)
Consumption	30752	-1286 (-4.0%)
Feed consumption	1814	+78 (+4.5%)
Consumption of CHN	28938	-1364 (-4.5%)
Ending stocks	675	0 (0.0%)



No	Share	Geo	2023/24	+/-
1	39.7%	India	12200	-1306 (-9.7%)
2	11.1%	Niger	3400	-257 (-7.0%)
3	8.8%	China	2700	0 (0.0%)
4	6.5%	Nigeria	2000	-30 (-1.5%)
5	5.9%	Mali	1800	-33 (-1.8%)
6	5.2%	Sudan	1600	-75 (-4.5%)
7	3.6%	Ethiopia	1100	+158 (+16.8%)
8	3.3%	Burkina Faso	1000	+92 (+10.1%)

9	3.3%	Senegal	1000	-97 (-8.8%)
10	2.3%	Chad	700	+6 (+0.9%)
11	1.3%	russia	400	+100 (+33.3%)
12	1.1%	Pakistan	350	+5 (+1.4%)
13	1.1%	Tanzania	325	0 (0.0%)
14	1.0%	Nepal	314	0 (0.0%)
15	0.8%	Myanmar	240	0 (0.0%)
16	0.7%	Guinea	220	0 (0.0%)
17	0.7%	Ghana	210	+15 (+7.7%)
18	0.3%	Cameroon	100	0 (0.0%)
19	0.3%	Kenya	100	0 (0.0%)
20	0.3%	Ukraine	100	+10 (+11.1%)
21	0.3%	Uzbekistan	100	+22 (+28.2%)
22	0.3%	Zimbabwe	90	+41 (+83.7%)
23	0.2%	Ivory Coast	70	0 (0.0%)
24	0.2%	Uganda	70	0 (0.0%)
25	0.2%	Yemen	50	0 (0.0%)
26	0.2%	Zambia	47	+15 (+46.9%)
27	0.1%	Kazakhstan	45	+8 (+21.6%)
28	0.1%	South Sudan	45	0 (0.0%)
29	0.1%	Angola	40	0 (0.0%)
30	0.1%	Congo-Kinshasa	40	0 (0.0%)
31	0.1%	The Gambia	40	+3 (+8.1%)
32	0.1%	Sierra Leone	40	+2 (+5.3%)
33	0.1%	Australia	37	0 (0.0%)
34	0.1%	Togo	30	+2 (+7.1%)
35	0.1%	Benin	25	+1 (+4.2%)
36	0.1%	Eritrea	25	0 (0.0%)
37	0.1%	Mozambique	25	0 (0.0%)
38	0.1%	Guinea-Bissau	20	-9 (-31.0%)
39	0.0%	Burundi	11	0 (0.0%)
40	0.0%	CAR	10	0 (0.0%)
41	0.0%	Botswana	8	+5 (+166.7%)
42	0.0%	Bangladesh	7	0 (0.0%)
43	0.0%	Sri Lanka	7	0 (0.0%)
44	0.0%	Argentina	4	+3 (+300.0%)
45	0.0%	Rwanda	4	0 (0.0%)
46	0.0%	Mauritania	3	0 (0.0%)

Source: GrainUkraine - agricultural market statistics. URL: <https://bogdantymkiv.com/country/UA/>

Niches: rice World

Indicator	2023/24	+/-
Initial stocks	174784	-8031 (-4.4%)
Imports	49805	-4172 (-7.7%)
Import TR	50587	-267 (-0.5%)
Production	517796	+4441 (+0.9%)
Export	52679	-1254 (-2.3%)
Export TR	52848	-460 (-0.9%)
Collected area	165786	+178 (+0.1%)
Offer	742385	-7762 (-1.0%)
Consumption	522286	+856 (+0.2%)
Ending stocks	167420	-7364 (-4.2%)



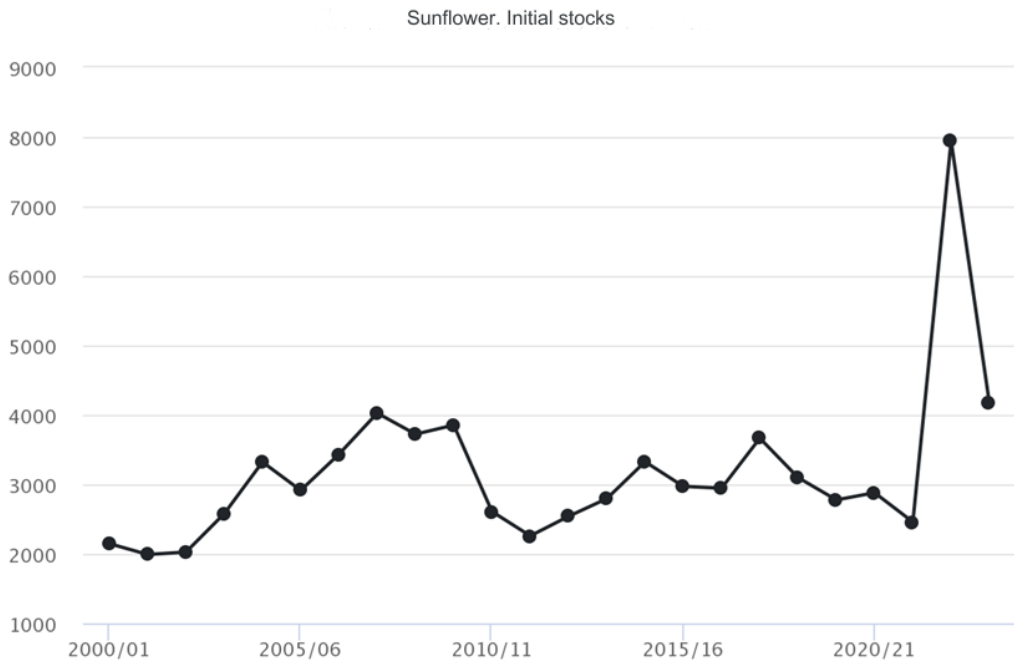
No	Share	Geo	2023/24	+/-
1	61.0%	China	106600	-6400 (-5.7%)
2	20.0%	India	35000	+1000 (+2.9%)
3	2.3%	Indonesia	4000	+1100 (+37.9%)
4	2.0%	Philippines	3478	+375 (+12.1%)
5	1.9%	Thailand	3285	-241 (-6.8%)
6	1.2%	Nigeria	2150	+105 (+5.1%)
7	1.2%	Bangladesh	2111	+20 (+1.0%)
8	1.0%	Japan	1795	-155 (-7.9%)
9	0.9%	Vietnam	1595	-1060 (-39.9%)
10	0.8%	South Korea	1393	+59 (+4.4%)
11	0.6%	Myanmar	1083	+202 (+22.9%)
12	0.5%	USA	961	-300 (-23.8%)
13	0.5%	Pakistan	957	-1693 (-63.9%)
14	0.5%	EU	809	-100 (-11.0%)
15	0.4%	Iraq	709	+220 (+45.0%)
16	0.4%	Brazil	703	-196 (-21.8%)
17	0.3%	Senegal	605	+49 (+8.8%)
18	0.3%	Egypt	600	-13 (-2.1%)
19	0.3%	Sri Lanka	533	-289 (-35.2%)
20	0.3%	Taiwan	440	-47 (-9.7%)
21	0.3%	Guinea	438	+65 (+17.4%)
22	0.2%	Ecuador	401	+39 (+10.8%)
23	0.2%	Saudi Arabia	364	0 (0.0%)
24	0.2%	Peru	344	-66 (-16.1%)
25	0.2%	Dominican Republic	336	+47 (+16.3%)
26	0.2%	Colombia	303	-94 (-23.7%)
27	0.2%	Ghana	286	-139 (-32.7%)
28	0.2%	Ivory Coast	267	-16 (-5.7%)
29	0.1%	Cambodia	241	+33 (+15.9%)
30	0.1%	UAE	225	-100 (-30.8%)
31	0.1%	Kenya	213	+100 (+88.5%)
32	0.1%	Australia	184	-56 (-23.3%)
33	0.1%	Iran	178	-175 (-49.6%)
34	0.1%	Laos	168	+50 (+42.4%)
35	0.1%	Venezuela	164	-53 (-24.4%)
36	0.1%	Malaysia	146	-150 (-50.7%)
37	0.1%	Turkey	145	+67 (+85.9%)
38	0.1%	Mali	139	-2 (-1.4%)
39	0.1%	russia	123	-74 (-37.6%)
40	0.1%	Guyana	116	+83 (+251.5%)
41	0.1%	Nicaragua	103	-6 (-5.5%)
42	0.1%	Costa Rica	102	+58 (+131.8%)
43	0.1%	Mexico	96	-47 (-32.9%)
44	0.0%	Uzbekistan	85	+24 (+39.3%)

45	0.0%	Oman	82	+5 (+6.5%)
46	0.0%	Uruguay	81	+10 (+14.1%)
47	0.0%	Argentina	74	-89 (-54.6%)
48	0.0%	Liberia	71	+20 (+39.2%)
49	0.0%	South Africa	65	-15 (-18.8%)
50	0.0%	Chile	56	+6 (+12.0%)
51	0.0%	The Gambia	51	+34 (+200.0%)
52	0.0%	Panama	47	+24 (+104.3%)
53	0.0%	Syria	39	+5 (+14.7%)
54	0.0%	Paraguay	35	-147 (-80.8%)
55	0.0%	Haiti	31	-20 (-39.2%)
56	0.0%	Mauritania	31	-3 (-8.8%)
57	0.0%	Honduras	30	-10 (-25.0%)
58	0.0%	Israel	23	0 (0.0%)
59	0.0%	Burkina Faso	18	-54 (-75.0%)
60	0.0%	Guinea-Bissau	17	+9 (+112.5%)
61	0.0%	Great Britain	17	-16 (-48.5%)
62	0.0%	Jordan	16	0 (0.0%)
63	0.0%	Switzerland	15	0 (0.0%)
64	0.0%	Azerbaijan	8	+3 (+60.0%)
65	0.0%	El Salvador	3	-11 (-78.6%)

Source: GrainUkraine - agricultural market statistics. URL: <https://bogdantymkiv.com/country/UA/>

Oilseeds: Sunflower World

Indicator	2023/24	+/-
Initial stocks	4172	-3771 (-47.5%)
Imports	2906	-1154 (-28.4%)
Production	56983	+4600 (+8.8%)
Export	3094	-1120 (-26.6%)
Collected area	28473	+462 (+1.6%)
Processing	52379	+1071 (+2.1%)
Offer	64061	-325 (-0.5%)
Consumption	56826	+826 (+1.5%)
Feed consumption	2339	-228 (-8.9%)
Food consumption	2108	-17 (-0.8%)
Ending stocks	4141	-31 (-0.7%)

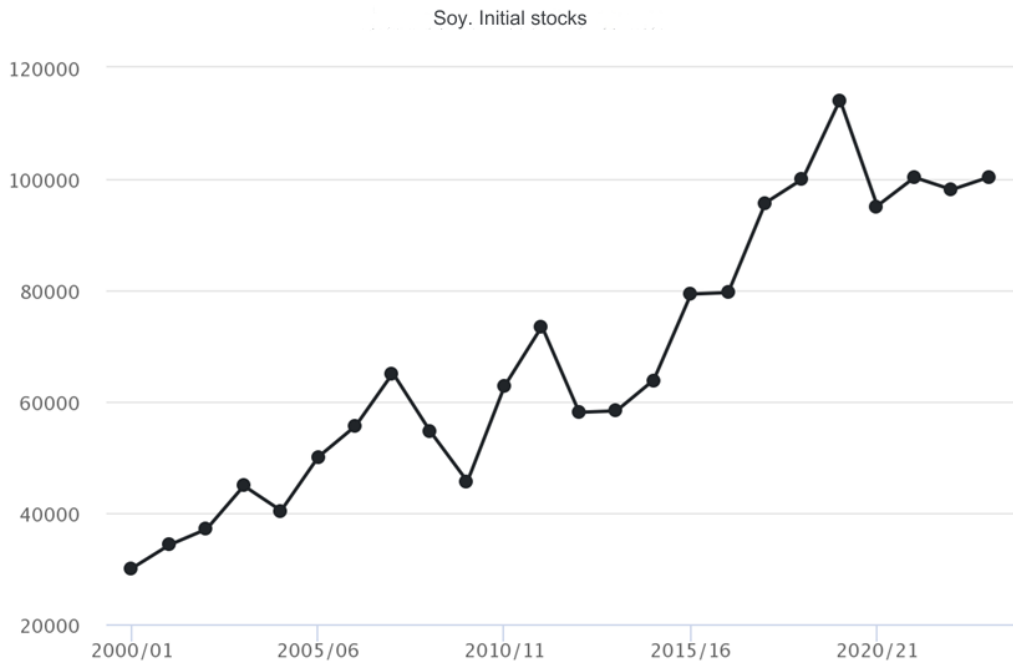


No	Share	Geo	2023/24	+/-
1	26.1%	Argentina	1089	+374 (+52.3%)
2	24.1%	russia	1007	+49 (+5.1%)
3	19.5%	Ukraine	815	-3875 (-82.6%)
4	6.4%	EU	268	-424 (-61.3%)
5	6.4%	China	265	+17 (+6.9%)
6	4.0%	USA	167	+33 (+24.6%)
7	3.8%	Turkey	159	+58 (+57.4%)
8	2.1%	Kazakhstan	87	+24 (+38.1%)
9	1.9%	Moldova	79	-27 (-25.5%)
10	1.3%	Canada	56	+18 (+47.4%)
11	1.1%	Serbia	47	+6 (+14.6%)
12	0.8%	Uzbekistan	32	+12 (+60.0%)
13	0.7%	South Africa	31	-43 (-58.1%)
14	0.5%	Egypt	20	+10 (+100.0%)
15	0.3%	Pakistan	13	+3 (+30.0%)
16	0.2%	Iran	9	-4 (-30.8%)
17	0.2%	Australia	8	+7 (+700.0%)
18	0.1%	Mexico	5	+2 (+66.7%)
19	0.1%	Bosnia- Herzegovina	3	-1 (-25.0%)
20	0.0%	Bolivia	2	-10 (-83.3%)
21	0.0%	Brazil	2	0 (0.0%)
22	0.0%	Chile	2	0 (0.0%)
23	0.0%	Israel	2	+1 (+100.0%)
24	0.0%	Myanmar	1	-2 (-66.7%)
25	0.0%	Macedonia	1	0 (0.0%)
26	0.0%	Paraguay	1	- (-%)
27	0.0%	Uruguay	1	0 (0.0%)

Source: GrainUkraine - agricultural market statistics. URL: <https://bogdantymkiv.com/country/UA/>

Oil: Soy World

Indicator	2023/24	+/-
Initial stocks	100311	+2248 (+2.3%)
Imports	165748	+641 (+0.4%)
Production	400423	+28185 (+7.6%)
Export	168291	-2658 (-1.6%)
Collected area	139049	+2823 (+2.1%)
Processing	329466	+16035 (+5.1%)
Offer	666482	+31074 (+4.9%)
Consumption	383677	+19529 (+5.4%)
Feed consumption	30283	+2450 (+8.8%)
Food consumption	23928	+1044 (+4.6%)
Ending stocks	114514	+14203 (+14.2%)



No	Share	Geo	2023/24	+/-
1	33.7%	China	33786	+4536 (+15.5%)
2	33.3%	Brazil	33442	+5844 (+21.2%)
3	17.2%	Argentina	17209	-6694 (-28.0%)
4	7.3%	USA	7299	-169 (-2.3%)
5	1.6%	India	1579	+86 (+5.8%)
6	1.4%	EU	1425	-256 (-15.2%)
7	0.6%	Canada	646	+218 (+50.9%)
8	0.6%	russia	612	+36 (+6.3%)
9	0.5%	Iran	546	-185 (-25.3%)
10	0.4%	South Africa	362	+190 (+110.5%)
11	0.3%	Vietnam	343	+38 (+12.5%)
12	0.3%	Paraguay	262	+85 (+48.0%)
13	0.2%	Turkey	235	+13 (+5.9%)
14	0.2%	Ukraine	221	-746 (-77.1%)
15	0.2%	Mexico	218	-86 (-28.3%)
16	0.2%	Egypt	199	-210 (-51.3%)
17	0.2%	Thailand	194	+69 (+55.2%)
18	0.2%	Taiwan	186	+56 (+43.1%)
19	0.2%	Japan	178	-65 (-26.7%)
20	0.1%	Bolivia	123	+2 (+1.7%)
21	0.1%	Algeria	122	+25 (+25.8%)
22	0.1%	Bangladesh	116	-317 (-73.2%)
23	0.1%	Serbia	111	-26 (-19.0%)
24	0.1%	Nigeria	102	+6 (+6.3%)
25	0.1%	Indonesia	100	+6 (+6.4%)
26	0.1%	Colombia	99	-8 (-7.5%)
27	0.1%	South Korea	98	+2 (+2.1%)
28	0.1%	Malaysia	77	-2 (-2.5%)
29	0.1%	Uruguay	68	-180 (-72.6%)
30	0.0%	Benin	40	+25 (+166.7%)
31	0.0%	Great Britain	32	-1 (-3.0%)
32	0.0%	Tunisia	31	+15 (+93.8%)
33	0.0%	Zambia	31	+6 (+24.0%)
34	0.0%	North Korea	25	0 (0.0%)
35	0.0%	Zimbabwe	19	+8 (+72.7%)
36	0.0%	Philippines	18	-14 (-43.8%)
37	0.0%	Israel	16	-7 (-30.4%)
38	0.0%	Ghana	14	-5 (-26.3%)
39	0.0%	Lebanon	14	0 (0.0%)
40	0.0%	Saudi Arabia	13	-7 (-35.0%)
41	0.0%	Kazakhstan	12	+1 (+9.1%)
42	0.0%	Peru	12	+1 (+9.1%)
43	0.0%	Norway	11	0 (0.0%)
44	0.0%	Venezuela	11	+2 (+22.2%)

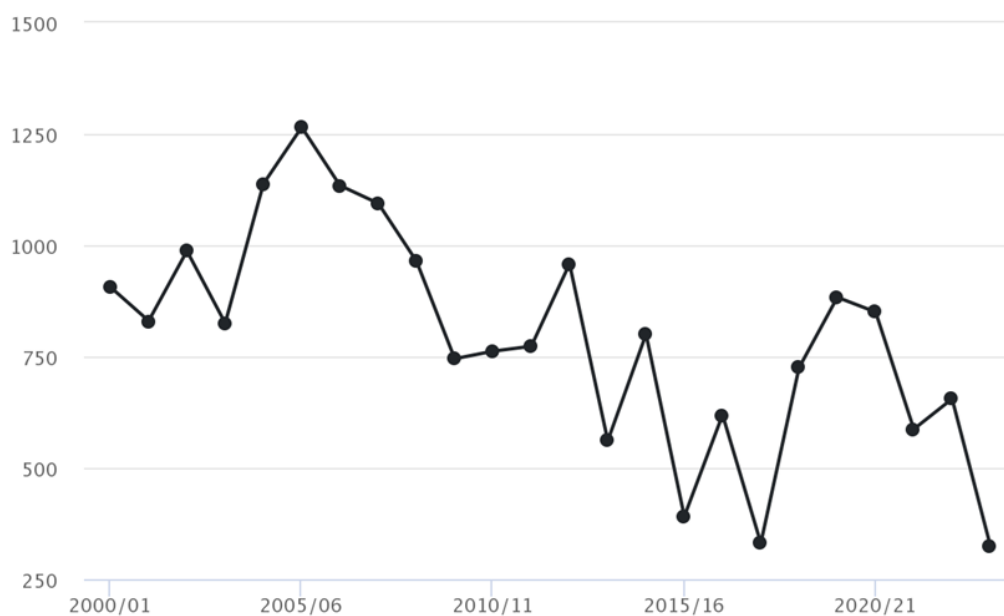
45	0.0%	Costa Rica	9	0 (0.0%)
46	0.0%	Ethiopia	9	-33 (-78.6%)
47	0.0%	UAE	9	-2 (-18.2%)
48	0.0%	Belarus	8	-1 (-11.1%)
49	0.0%	Chile	6	+1 (+20.0%)
50	0.0%	Pakistan	5	-8 (-61.5%)
51	0.0%	Uzbekistan	3	0 (0.0%)
52	0.0%	Barbados	2	0 (0.0%)
53	0.0%	Panama	2	0 (0.0%)
54	0.0%	Bosnia-Herzegovina	1	0 (0.0%)

Source: GrainUkraine - agricultural market statistics. URL: <https://bogdantymkiv.com/country/UA/>

Oil: Olive oil World

Indicator	2023/24	+/-
Initial stocks	325	-330 (-50.4%)
Imports	1063	-9 (-0.8%)
Production	2889	+395 (+15.8%)
Export	1143	-13 (-1.1%)
Offer	4277	+56 (+1.3%)
Consumption	2812	+72 (+2.6%)
Industrial consumption	21	+5 (+31.3%)
Food consumption	2791	+67 (+2.5%)
Ending stocks	322	-3 (-0.9%)

Olive oil. Initial stocks



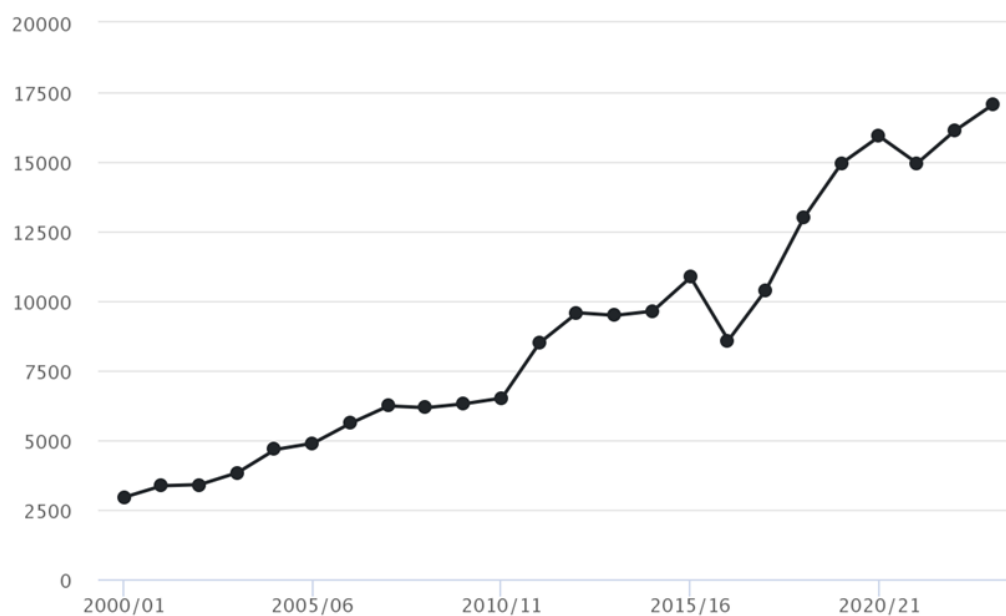
No	Share	Geo	2023/24	+/-
1	26.5%	EU	86	-325 (-79.1%)
2	19.7%	Turkey	64	+45 (+236.8%)
3	12.3%	Tunisia	40	-3 (-7.0%)
4	8.0%	Morocco	26	-14 (-35.0%)
5	5.5%	Syria	18	0 (0.0%)
6	4.3%	Australia	14	0 (0.0%)
7	4.3%	Chile	14	-2 (-12.5%)
8	3.7%	Algeria	12	-10 (-45.5%)
9	3.4%	Argentina	11	-2 (-15.4%)
10	3.1%	Libya	10	0 (0.0%)
11	1.8%	Israel	6	-3 (-33.3%)
12	1.8%	Lebanon	6	0 (0.0%)
13	1.5%	Saudi Arabia	5	-2 (-28.6%)
14	1.2%	Mexico	4	-7 (-63.6%)
15	0.9%	Great Britain	3	-6 (-66.7%)
16	0.6%	Brazil	2	0 (0.0%)
17	0.6%	Canada	2	0 (0.0%)
18	0.3%	Japan	1	-1 (-50.0%)
19	0.3%	Jordan	1	0 (0.0%)

Source: GrainUkraine - agricultural market statistics. URL: <https://bogdantymkiv.com/country/UA/>

Oil: Palm oil World

Indicator	2023/24	+/-
Initial stocks	17045	+928 (+5.8%)
Imports	48561	+1134 (+2.4%)
Production	79464	+1901 (+2.5%)
Export	50713	+1295 (+2.6%)
Collected area	27117	+598 (+2.3%)
Offer	145070	+3963 (+2.8%)
Consumption	78283	+3639 (+4.9%)
Feed consumption	712	-11 (-1.5%)
Industrial consumption	27143	+1308 (+5.1%)
Food consumption	50428	+2342 (+4.9%)
Ending stocks	16074	-971 (-5.7%)

Palm oil. Initial stocks



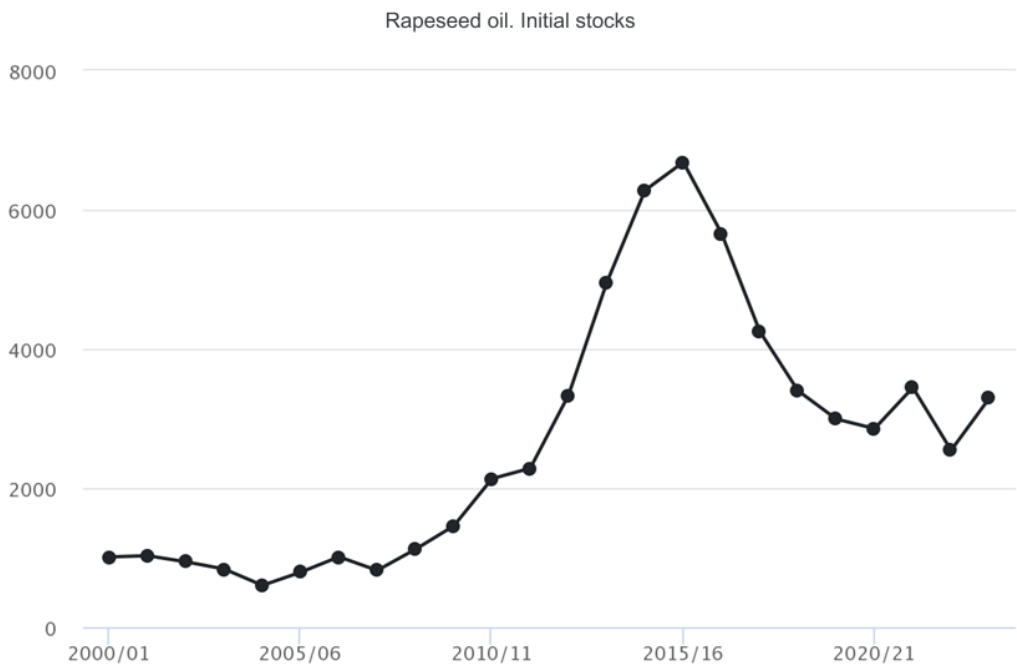
No	Share	Geo	2023/24	+/-
1	36.0%	Indonesia	6137	-1167 (-16.0%)
2	13.6%	India	2324	+1352 (+139.1%)
3	13.6%	Malaysia	2314	-4 (-0.2%)
4	5.8%	China	986	+565 (+134.2%)
5	4.8%	Colombia	821	-15 (-1.8%)
6	4.3%	EU	740	+200 (+37.0%)
7	1.8%	Thailand	308	-168 (-35.3%)
8	1.4%	russia	232	-90 (-28.0%)
9	1.3%	Guatemala	219	+5 (+2.3%)
10	1.1%	Pakistan	195	+105 (+116.7%)
11	1.0%	Ivory Coast	176	+135 (+329.3%)
12	0.9%	Iran	161	-23 (-12.5%)
13	0.9%	USA	161	+1 (+0.6%)
14	0.9%	Mexico	157	-10 (-6.0%)
15	0.9%	Turkey	152	-20 (-11.6%)
16	0.7%	Benin	122	+35 (+40.2%)
17	0.6%	Kenya	98	+50 (+104.2%)
18	0.6%	Mozambique	96	+5 (+5.5%)
19	0.5%	Tanzania	90	+15 (+20.0%)
20	0.5%	Myanmar	88	-35 (-28.5%)
21	0.5%	Egypt	88	0 (0.0%)
22	0.5%	UAE	88	0 (0.0%)
23	0.5%	Iraq	77	+25 (+48.1%)
24	0.4%	Nigeria	76	-8 (-9.5%)
25	0.4%	Philippines	76	-46 (-37.7%)
26	0.4%	Angola	69	0 (0.0%)
27	0.4%	Papua New Guinea	66	+7 (+11.9%)
28	0.4%	South Korea	62	-3 (-4.6%)
29	0.4%	Saudi Arabia	60	-15 (-20.0%)
30	0.3%	Bangladesh	58	+7 (+13.7%)
31	0.3%	Cameroon	55	+15 (+37.5%)
32	0.3%	Honduras	52	+3 (+6.1%)
33	0.3%	Togo	48	-1 (-2.0%)
34	0.3%	Oman	46	0 (0.0%)
35	0.3%	Ecuador	45	-10 (-18.2%)
36	0.3%	Afghanistan	43	+5 (+13.2%)
37	0.2%	Vietnam	41	-27 (-39.7%)
38	0.2%	Costa Rica	40	-12 (-23.1%)
39	0.2%	Brazil	35	0 (0.0%)
40	0.2%	Dominican Republic	34	+4 (+13.3%)
41	0.2%	Sri Lanka	30	+25 (+500.0%)
42	0.2%	Senegal	27	+9 (+50.0%)
43	0.1%	Great Britain	23	0 (0.0%)
44	0.1%	Algeria	20	-5 (-20.0%)

45	0.1%	Ghana	19	+5 (+35.7%)
46	0.1%	Guinea	18	+10 (+125.0%)
47	0.1%	South Africa	17	-5 (-22.7%)
48	0.1%	Congo-Kinshasa	16	0 (0.0%)
49	0.1%	Haiti	15	+10 (+200.0%)
50	0.1%	Peru	15	+12 (+400.0%)
51	0.1%	North Korea	14	+5 (+55.6%)
52	0.1%	Djibouti	10	+5 (+100.0%)
53	0.1%	Mauritania	10	+5 (+100.0%)
54	0.1%	Ukraine	10	-6 (-37.5%)
55	0.1%	El Salvador	9	-4 (-30.8%)
56	0.0%	Japan	8	0 (0.0%)
57	0.0%	Yemen	8	0 (0.0%)
58	0.0%	Tunisia	7	-5 (-41.7%)
59	0.0%	Singapore	6	-10 (-62.5%)
60	0.0%	Australia	5	0 (0.0%)
61	0.0%	Jordan	5	0 (0.0%)
62	0.0%	Rwanda	5	0 (0.0%)
63	0.0%	Taiwan	5	-5 (-50.0%)
64	0.0%	Liberia	4	+2 (+100.0%)
65	0.0%	Kuwait	2	0 (0.0%)
66	0.0%	New Zealand	1	0 (0.0%)

Source: GrainUkraine - agricultural market statistics. URL: <https://bogdantymkiv.com/country/UA/>

Oil: rapeseed oil World

Indicator	2023/24	+/-
Initial stocks	3292	+750 (+29.5%)
Imports	6732	-113 (-1.7%)
Production	33064	+260 (+0.8%)
Export	6965	+510 (+7.9%)
Offer	43088	+897 (+2.1%)
Consumption	32596	+152 (+0.5%)
Feed consumption	51	0 (0.0%)
Industrial consumption	9467	+351 (+3.9%)
Food consumption	23078	-199 (-0.9%)
Ending stocks	3527	+235 (+7.1%)



No	Share	Geo	2023/24	+/-
1	37.3%	China	1228	+387 (+46.0%)
2	19.1%	Canada	630	+105 (+20.0%)
3	13.1%	EU	431	+33 (+8.3%)
4	12.2%	India	402	+155 (+62.8%)
5	2.7%	Great Britain	89	+48 (+117.1%)
6	2.2%	USA	74	-3 (-3.9%)
7	1.7%	Norway	57	+6 (+11.8%)
8	1.7%	Mexico	55	-26 (-32.1%)
9	1.5%	Belarus	51	+37 (+264.3%)
10	1.3%	Bangladesh	44	+8 (+22.2%)
11	1.3%	Turkey	43	+26 (+152.9%)
12	1.1%	UAE	37	+32 (+640.0%)
13	0.9%	Pakistan	31	+20 (+181.8%)
14	0.9%	russia	30	-45 (-60.0%)
15	0.6%	Iran	20	-1 (-4.8%)
16	0.6%	Japan	19	-27 (-58.7%)
17	0.5%	Chile	18	+11 (+157.1%)
18	0.3%	South Korea	9	-3 (-25.0%)
19	0.2%	South Africa	8	+1 (+14.3%)
20	0.2%	Tunisia	5	+4 (+400.0%)
21	0.1%	Switzerland	4	+3 (+300.0%)
22	0.1%	Australia	2	-6 (-75.0%)
23	0.0%	Kazakhstan	1	-2 (-66.7%)
24	0.0%	Paraguay	1	- (-%)
25	0.0%	Ukraine	1	-13 (-92.9%)
26	0.0%	Uruguay	1	-2 (-66.7%)
27	0.0%	Vietnam	1	- (-%)

Source: GrainUkraine - agricultural market statistics. URL: <https://bogdantymkiv.com/country/UA/>

Oil: Rapeseed World

Indicator	2024/25	+/-
Initial stocks	3485	+372 (+11.9%)
Imports	7334	-323 (-4.2%)
Production	33922	-170 (-0.5%)
Export	7561	-172 (-2.2%)
Consumption	85737	+499 (+0.6%)
Feed consumption	3411	-160 (-4.5%)
Food consumption	51	0 (0.0%)
Ending stocks	2994	-491 (-14.1%)

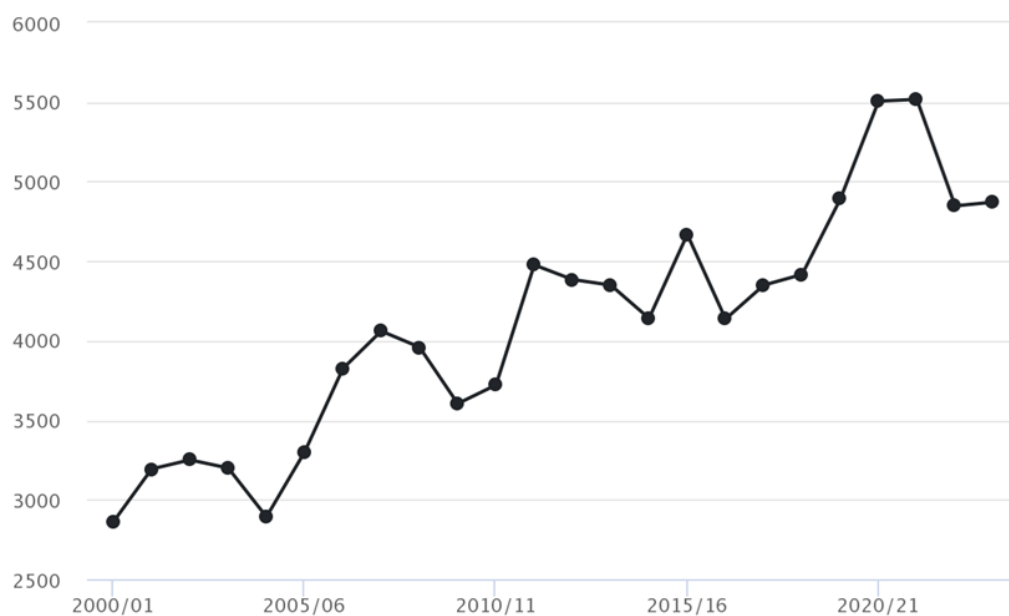
No	Share	Geo	2024/25	+/-
1	47.7%	China	1661	+511 (+44.4%)
2	14.9%	Canada	520	-110 (-17.5%)
3	11.2%	India	392	-10 (-2.5%)
4	11.2%	European Union	391	+48 (+14.0%)
5	2.2%	Norway	77	+20 (+35.1%)
6	2.2%	USA	75	+3 (+4.2%)
7	1.2%	russia	43	-58 (-57.4%)
8	1.2%	Bangladesh	41	-4 (-8.9%)
9	1.0%	Australia	34	+20 (+142.9%)
10	1.0%	UK	34	+10 (+41.7%)
11	0.9%	Mexico	32	-30 (-48.4%)
12	0.9%	Turkey	32	-14 (-30.4%)
13	0.8%	Pakistan	28	-3 (-9.7%)
14	0.8%	Japan	27	+10 (+58.8%)
15	0.6%	Belarus	22	+8 (+57.1%)
16	0.5%	Chile	17	+8 (+88.9%)
17	0.5%	Iran	16	-4 (-20.0%)
18	0.4%	Korea, South	13	+4 (+44.4%)
19	0.4%	UAE	13	-40 (-75.5%)
20	0.2%	South Africa	7	+1 (+16.7%)
21	0.2%	Uruguay	6	- (-%)
22	0.1%	Tunisia	2	-3 (-60.0%)
23	0.1%	Ukraine	2	0 (0.0%)

Source: GrainUkraine - agricultural market statistics. URL: <https://bogdantymkiv.com/country/UA/>

Oil: Soybean oil World

Indicator	2023/24	+/-
Initial stocks	4871	+24 (+0.5%)
Imports	10790	+159 (+1.5%)
Production	61928	+2897 (+4.9%)
Export	11503	+113 (+1.0%)
Offer	77589	+3080 (+4.1%)
Consumption	60851	+2603 (+4.5%)
Feed consumption	70	+5 (+7.7%)
Industrial consumption	13756	+1353 (+10.9%)
Food consumption	47025	+1245 (+2.7%)
Ending stocks	5235	+364 (+7.5%)

Soybean oil. Initial stocks



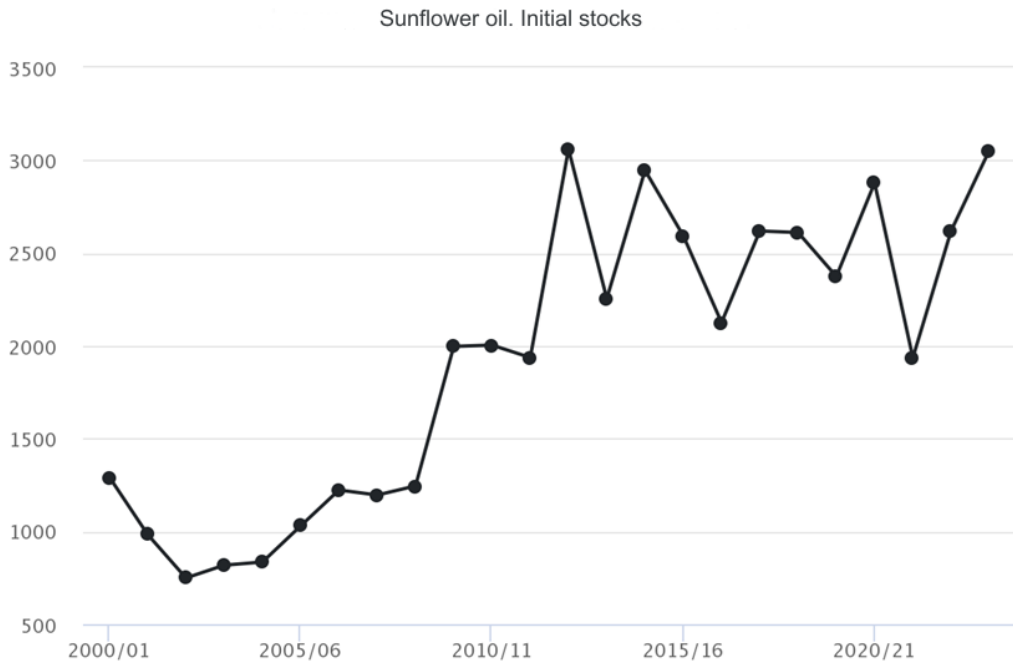
No	Share	Geo	2023/24	+/-
1	18.9%	China	920	+567 (+160.6%)
2	14.9%	USA	727	-176 (-19.5%)
3	12.1%	EU	591	+42 (+7.7%)
4	10.8%	India	525	+339 (+182.3%)
5	6.7%	Argentina	327	-196 (-37.5%)
6	5.7%	Brazil	277	-128 (-31.6%)
7	4.0%	Algeria	196	-42 (-17.6%)
8	3.2%	Iran	157	-150 (-48.9%)
9	2.8%	Mexico	138	-53 (-27.7%)
10	2.8%	russia	135	-22 (-14.0%)
11	2.1%	Canada	104	+76 (+271.4%)
12	1.3%	South Korea	64	-5 (-7.2%)
13	1.2%	Pakistan	57	+3 (+5.6%)
14	1.1%	Serbia	53	+2 (+3.9%)
15	0.8%	Dominican Republic	40	-10 (-20.0%)
16	0.7%	Great Britain	34	+1 (+3.0%)
17	0.7%	Ukraine	33	-2 (-5.7%)
18	0.6%	Thailand	31	-3 (-8.8%)
19	0.5%	Chile	26	+8 (+44.4%)
20	0.5%	Vietnam	26	-28 (-51.9%)
21	0.5%	Nigeria	25	-21 (-45.7%)
22	0.5%	Paraguay	23	+6 (+35.3%)
23	0.4%	Colombia	21	-37 (-63.8%)
24	0.4%	Taiwan	21	-4 (-16.0%)
25	0.4%	Peru	20	-15 (-42.9%)
26	0.4%	South Africa	19	-5 (-20.8%)
27	0.3%	Angola	17	0 (0.0%)
28	0.3%	Egypt	17	-17 (-50.0%)
29	0.3%	Bangladesh	15	-9 (-37.5%)
30	0.3%	North Korea	15	-1 (-6.3%)
31	0.3%	Zambia	15	-1 (-6.3%)
32	0.3%	Zimbabwe	15	-3 (-16.7%)
33	0.3%	Morocco	14	-12 (-46.2%)
34	0.3%	Tunisia	14	+3 (+27.3%)
35	0.2%	Hong Kong	12	-5 (-29.4%)
36	0.2%	Bolivia	11	-7 (-38.9%)
37	0.2%	Israel	11	-5 (-31.3%)
38	0.2%	Saudi Arabia	11	-6 (-35.3%)
39	0.2%	Japan	10	-8 (-44.4%)
40	0.2%	Lebanon	10	-2 (-16.7%)
41	0.2%	Malaysia	10	+8 (+400.0%)
42	0.2%	Guatemala	9	-5 (-35.7%)
43	0.2%	Belarus	8	+7 (+700.0%)
44	0.2%	Turkey	8	-8 (-50.0%)

45	0.2%	Uruguay	8	-2 (-20.0%)
46	0.1%	Cuba	5	-3 (-37.5%)
47	0.1%	Norway	5	+3 (+150.0%)
48	0.1%	Venezuela	5	-20 (-80.0%)
49	0.1%	Ecuador	4	-5 (-55.6%)
50	0.1%	Ghana	4	-1 (-20.0%)
51	0.1%	Kazakhstan	4	-2 (-33.3%)
52	0.1%	Panama	4	-2 (-33.3%)
53	0.1%	UAE	4	+1 (+33.3%)
54	0.1%	Jordan	3	0 (0.0%)
55	0.1%	Mauritius	3	-5 (-62.5%)
56	0.0%	Costa Rica	2	-5 (-71.4%)
57	0.0%	Madagascar	2	-3 (-60.0%)
58	0.0%	Philippines	2	-1 (-33.3%)
59	0.0%	Uzbekistan	2	+1 (+100.0%)
60	0.0%	Senegal	1	-1 (-50.0%)
61	0.0%	Syria	1	0 (0.0%)

Source: GrainUkraine - agricultural market statistics. URL: <https://bogdantymkiv.com/country/UA/>

Oil: Sunflower oil World

Indicator	2023/24	+/-
Initial stocks	3054	+434 (+16.6%)
Imports	12227	-154 (-1.2%)
Production	22050	+443 (+2.1%)
Export	13824	-177 (-1.3%)
Offer	37331	+723 (+2.0%)
Consumption	20488	+935 (+4.8%)
Feed consumption	106	+18 (+20.5%)
Industrial consumption	1035	+15 (+1.5%)
Food consumption	19347	+902 (+4.9%)
Ending stocks	3019	-35 (-1.1%)



No	Share	Geo	2023/24	+/-
1	20.2%	Turkey	616	+394 (+177.5%)
2	16.2%	India	494	+264 (+114.8%)
3	10.4%	russia	318	-109 (-25.5%)
4	10.3%	Argentina	315	+33 (+11.7%)
5	9.4%	EU	286	-274 (-48.9%)
6	5.5%	Iran	167	-35 (-17.3%)
7	4.4%	Uzbekistan	135	+15 (+12.5%)
8	3.3%	Iraq	102	+70 (+218.8%)
9	2.0%	Serbia	62	+17 (+37.8%)
10	2.0%	Saudi Arabia	61	+5 (+8.9%)
11	1.7%	Egypt	51	-3 (-5.6%)
12	1.6%	Belarus	49	+41 (+512.5%)
13	1.5%	Moldova	47	+23 (+95.8%)
14	1.4%	Ukraine	42	-2 (-4.5%)
15	1.3%	USA	39	+10 (+34.5%)
16	1.2%	Lebanon	38	+19 (+100.0%)
17	1.2%	Libya	36	-5 (-12.2%)
18	0.9%	Kazakhstan	28	-8 (-22.2%)
19	0.9%	Mexico	27	-30 (-52.6%)
20	0.7%	Chile	22	+11 (+100.0%)
21	0.6%	South Africa	18	-9 (-33.3%)
22	0.6%	Israel	17	-1 (-5.6%)
23	0.6%	Great Britain	17	-3 (-15.0%)
24	0.5%	Morocco	15	+8 (+114.3%)
25	0.4%	Brazil	11	+4 (+57.1%)
26	0.3%	Syria	9	+5 (+125.0%)
27	0.2%	Algeria	7	0 (0.0%)
28	0.2%	Pakistan	6	+4 (+200.0%)
29	0.2%	Jordan	5	+3 (+150.0%)
30	0.1%	Canada	3	-2 (-40.0%)
31	0.1%	Peru	3	0 (0.0%)
32	0.1%	Japan	2	-1 (-33.3%)
33	0.1%	Paraguay	2	0 (0.0%)
34	0.0%	Bolivia	1	-7 (-87.5%)
35	0.0%	Bosnia-Herzegovina	1	-2 (-66.7%)
36	0.0%	Guatemala	1	0 (0.0%)
37	0.0%	Uruguay	1	-1 (-50.0%)

Source: GrainUkraine - agricultural market statistics. URL: <https://bogdantymkiv.com/country/UA/>

Sugar World

Indicator	2022/23	+/-
Initial stocks	39465	-7907 (-16.7%)
Imports	59012	+1485 (+2.6%)
Production	187881	+10602 (+6.0%)
Export	72104	+6019 (+9.1%)
Offer	286358	+4180 (+1.5%)
Consumption	180045	+4038 (+2.3%)
Ending stocks	33455	-6010 (-15.2%)



No	Share	Geo	2022/23	+/-
1	16.5%	India	6506	-3000 (-31.6%)
2	15.6%	Thailand	6152	-3060 (-33.2%)
3	8.9%	Pakistan	3522	-290 (-7.6%)
4	6.9%	China	2712	-2302 (-45.9%)
5	5.9%	Indonesia	2330	-40 (-1.7%)
6	4.0%	USA	1573	-79 (-4.8%)
7	3.7%	Philippines	1461	+530 (+56.9%)
8	3.5%	EU	1370	-14 (-1.0%)
9	2.5%	russia	992	+368 (+59.0%)
10	2.4%	Mexico	943	-79 (-7.7%)
11	1.7%	Brazil	690	+350 (+102.9%)
12	1.3%	Iran	510	-15 (-2.9%)
13	1.2%	Bangladesh	485	-68 (-12.3%)

14	1.2%	Vietnam	485	+30 (+6.6%)
15	1.2%	Japan	475	+15 (+3.3%)
16	1.1%	South Korea	420	0 (0.0%)
17	1.0%	Australia	384	+90 (+30.6%)
18	0.9%	Ethiopia	365	-45 (-11.0%)
19	0.9%	Malaysia	360	+25 (+7.5%)
20	0.9%	Sudan	360	+15 (+4.3%)
21	0.9%	Ecuador	344	-15 (-4.2%)
22	0.9%	Algeria	336	-41 (-10.9%)
23	0.8%	Costa Rica	335	+10 (+3.1%)
24	0.7%	Canada	295	+23 (+8.5%)
25	0.7%	Zimbabwe	295	+109 (+58.6%)
26	0.7%	Guatemala	274	-59 (-17.7%)
27	0.7%	Iraq	260	+21 (+8.8%)
28	0.6%	Morocco	235	-5 (-2.1%)
29	0.5%	Saudi Arabia	200	+5 (+2.6%)
30	0.5%	Honduras	198	0 (0.0%)
31	0.5%	Colombia	194	-15 (-7.2%)
32	0.5%	Kenya	190	-25 (-11.6%)
33	0.5%	Somalia	180	0 (0.0%)
34	0.4%	Great Britain	170	+5 (+3.0%)
35	0.4%	Chile	155	0 (0.0%)
36	0.4%	UAE	155	+15 (+10.7%)
37	0.4%	Taiwan	145	+10 (+7.4%)
38	0.4%	Yemen	145	+35 (+31.8%)
39	0.4%	Argentina	142	-15 (-9.6%)
40	0.3%	Tanzania	125	-3 (-2.3%)
41	0.3%	Kazakhstan	120	+15 (+14.3%)
42	0.3%	Ukraine	119	-385 (-76.4%)
43	0.3%	Djibouti	110	-10 (-8.3%)
44	0.3%	Sri Lanka	110	+5 (+4.8%)
45	0.3%	Dominican Republic	105	+18 (+20.7%)
46	0.3%	South Africa	101	-30 (-22.9%)
47	0.3%	Mozambique	100	0 (0.0%)
48	0.3%	Nigeria	100	0 (0.0%)
49	0.2%	Uganda	97	+5 (+5.4%)
50	0.2%	Myanmar	85	-1 (-1.2%)
51	0.2%	Ghana	75	0 (0.0%)
52	0.2%	Israel	75	0 (0.0%)
53	0.2%	Laos	75	+6 (+8.7%)
54	0.2%	Mauritania	75	+3 (+4.2%)
55	0.2%	Angola	72	-3 (-4.0%)
56	0.2%	Belarus	70	+10 (+16.7%)
57	0.2%	Bolivia	70	0 (0.0%)
58	0.2%	Jordan	70	0 (0.0%)

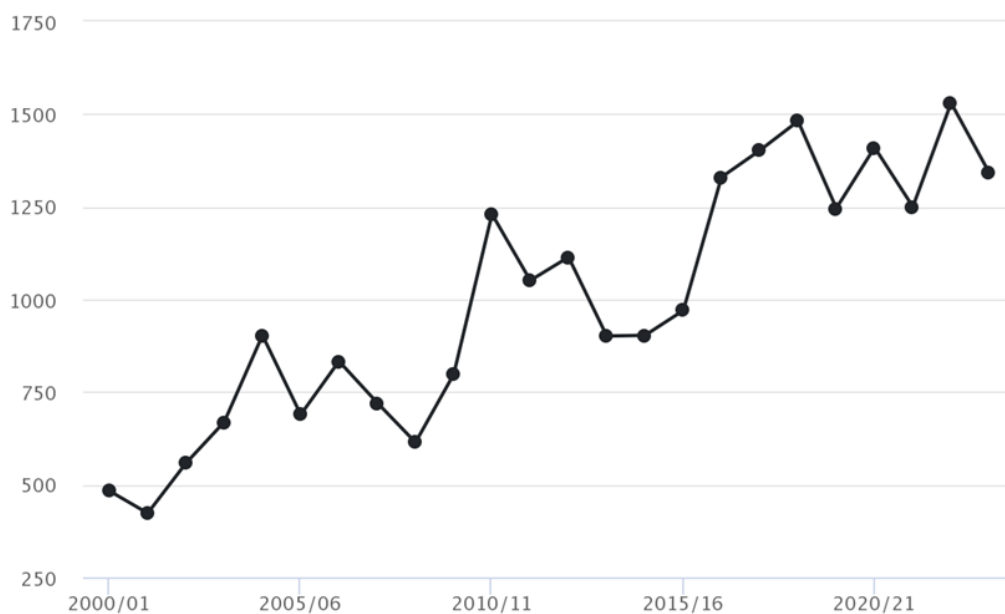
59	0.2%	Zambia	65	0 (0.0%)
60	0.2%	Cambodia	63	+2 (+3.3%)
61	0.2%	Ivory Coast	63	+3 (+5.0%)
62	0.2%	Switzerland	63	0 (0.0%)
63	0.2%	Egypt	60	-30 (-33.3%)
64	0.2%	Syria	60	+1 (+1.7%)
65	0.1%	Azerbaijan	57	+1 (+1.8%)
66	0.1%	Lebanon	55	+5 (+10.0%)
67	0.1%	Tunisia	55	0 (0.0%)
68	0.1%	Eswatini	54	+7 (+14.9%)
69	0.1%	Madagascar	53	+7 (+15.2%)
70	0.1%	Haiti	48	0 (0.0%)
71	0.1%	Serbia	45	0 (0.0%)
72	0.1%	Singapore	45	-5 (-10.0%)
73	0.1%	Nicaragua	40	0 (0.0%)
74	0.1%	New Zealand	38	-2 (-5.0%)
75	0.1%	Cuba	35	-15 (-30.0%)
76	0.1%	Libya	35	+4 (+12.9%)
77	0.1%	The Gambia	32	-8 (-20.0%)
78	0.1%	Hong Kong	31	+2 (+6.9%)
79	0.1%	Georgia	30	+4 (+15.4%)
80	0.1%	Malawi	30	0 (0.0%)
81	0.1%	Togo	30	0 (0.0%)
82	0.1%	Norway	28	-2 (-6.7%)
83	0.1%	Panama	25	+2 (+8.7%)
84	0.1%	Uruguay	25	0 (0.0%)
85	0.1%	Benin	22	-1 (-4.3%)
86	0.0%	Peru	18	+6 (+50.0%)
87	0.0%	Papua New Guinea	17	0 (0.0%)
88	0.0%	Trinidad and Tobago	17	+1 (+6.3%)
89	0.0%	Congo-Brazzaville	15	0 (0.0%)
90	0.0%	Fiji	15	+5 (+50.0%)
91	0.0%	El Salvador	14	-10 (-41.7%)
92	0.0%	Paraguay	13	+3 (+30.0%)
93	0.0%	Bahrain	12	0 (0.0%)
94	0.0%	Guyana	11	0 (0.0%)
95	0.0%	Moldova	11	+1 (+10.0%)
96	0.0%	Turkey	10	0 (0.0%)
97	0.0%	Belize	9	+3 (+50.0%)
98	0.0%	Gabon	7	0 (0.0%)
99	0.0%	Mauritius	5	-10 (-66.7%)
100	0.0%	Jamaica	4	0 (0.0%)
101	0.0%	Barbados	3	0 (0.0%)

Source: GrainUkraine - agricultural market statistics. URL: <https://bogdantymkiv.com/country/UA/>

Meal: rapeseed meal World

Indicator	2023/24	+/-
Initial stocks	1341	-189 (-12.4%)
Imports	8831	-451 (-4.9%)
Production	47551	+299 (+0.6%)
Export	9077	-593 (-6.1%)
Offer	57723	-341 (-0.6%)
Consumption	46946	-107 (-0.2%)
Feed consumption	46176	-117 (-0.3%)
Industrial consumption	770	+10 (+1.3%)
Ending stocks	1700	+359 (+26.8%)

Rapeseed meal. Initial stocks



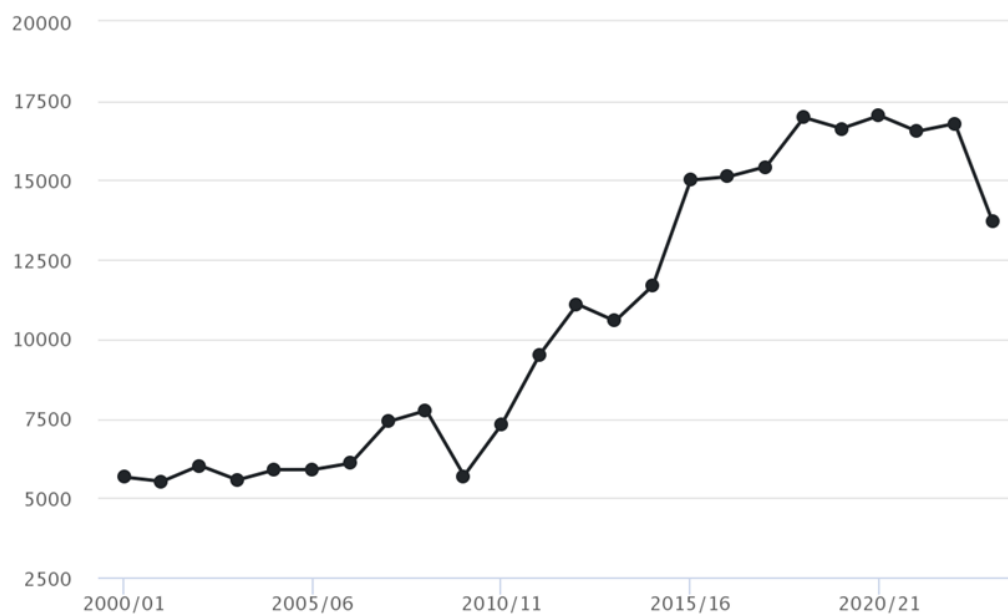
No	Share	Geo	2023/24	+/-
1	24.1%	EU	323	+11 (+3.5%)
2	17.6%	India	236	-214 (-47.6%)
3	12.8%	Canada	171	-12 (-6.6%)
4	8.5%	Bangladesh	114	-42 (-26.9%)
5	7.4%	russia	99	+65 (+191.2%)
6	6.1%	Great Britain	82	+7 (+9.3%)
7	5.1%	Belarus	68	-17 (-20.0%)
8	2.7%	USA	36	-3 (-7.7%)
9	1.8%	South Korea	24	+16 (+200.0%)
10	1.7%	Vietnam	23	+1 (+4.5%)
11	1.5%	Iran	20	-3 (-13.0%)
12	1.4%	Norway	19	-1 (-5.0%)
13	1.4%	UAE	19	- (-%)
14	1.3%	Switzerland	18	+1 (+5.9%)
15	1.2%	Japan	16	-2 (-11.1%)
16	1.1%	Kazakhstan	15	-4 (-21.1%)
17	0.8%	Morocco	11	- (-%)
18	0.7%	Mexico	10	-4 (-28.6%)
19	0.7%	Pakistan	10	-4 (-28.6%)
20	0.7%	Australia	9	0 (0.0%)
21	0.7%	Israel	9	-5 (-35.7%)
22	0.5%	South Africa	7	0 (0.0%)
23	0.1%	Chile	2	0 (0.0%)

Source: GrainUkraine - agricultural market statistics. URL: <https://bogdantymkiv.com/country/UA/>

Meal: Soybean meal World

Indicator	2023/24	+/-
Initial stocks	13688	-3096 (-18.4%)
Imports	66779	+4025 (+6.4%)
Production	258632	+12173 (+4.9%)
Export	69786	+3356 (+5.1%)
Offer	339099	+13102 (+4.0%)
Consumption	253624	+7745 (+3.1%)
Feed consumption	251402	+7706 (+3.2%)
Industrial consumption	1370	+8 (+0.6%)
Food consumption	852	+31 (+3.8%)
Ending stocks	15689	+2001 (+14.6%)

Soybean meal. Initial stocks



No	Share	Geo	2023/24	+/-
1	24.1%	Brazil	3300	-582 (-15.0%)
2	17.2%	Argentina	2361	-436 (-15.6%)
3	6.4%	China	878	+535 (+156.0%)
4	3.6%	Vietnam	486	-211 (-30.3%)
5	3.2%	Algeria	433	+225 (+108.2%)
6	2.8%	Turkey	386	-6 (-1.5%)
7	2.7%	EU	365	-230 (-38.7%)
8	2.6%	Egypt	362	-148 (-29.0%)
9	2.5%	USA	336	+54 (+19.1%)
10	2.4%	Ukraine	326	+98 (+43.0%)
11	1.8%	Indonesia	251	-146 (-36.8%)
12	1.7%	Colombia	239	-50 (-17.3%)
13	1.6%	russia	220	-45 (-17.0%)
14	1.5%	Paraguay	210	+50 (+31.3%)
15	1.5%	Iran	204	-115 (-36.1%)
16	1.4%	India	187	-235 (-55.7%)
17	1.3%	Ecuador	179	-128 (-41.7%)
18	1.3%	Peru	172	-33 (-16.1%)
19	1.1%	Canada	146	-107 (-42.3%)
20	1.1%	Philippines	145	-97 (-40.1%)
21	1.0%	Thailand	139	-77 (-35.6%)
22	1.0%	Bolivia	137	+5 (+3.8%)
23	1.0%	Bangladesh	133	-585 (-81.5%)
24	0.9%	Saudi Arabia	129	-149 (-53.6%)
25	0.9%	Mexico	125	-28 (-18.3%)
26	0.8%	Serbia	113	+2 (+1.8%)
27	0.8%	South Africa	112	-20 (-15.2%)
28	0.7%	UAE	95	-18 (-15.9%)
29	0.7%	Iraq	92	-170 (-64.9%)
30	0.6%	Belarus	86	+6 (+7.5%)
31	0.6%	South Korea	79	+3 (+3.9%)
32	0.5%	Norway	75	-11 (-12.8%)
33	0.5%	Israel	72	-7 (-8.9%)
34	0.5%	Yemen	71	-30 (-29.7%)
35	0.5%	Malaysia	70	-22 (-23.9%)
36	0.5%	Libya	65	+20 (+44.4%)
37	0.5%	Great Britain	64	+14 (+28.0%)
38	0.4%	Myanmar	61	-20 (-24.7%)
39	0.4%	New Zealand	51	-15 (-22.7%)
40	0.4%	Uruguay	49	-6 (-10.9%)
41	0.3%	Chile	45	-78 (-63.4%)
42	0.3%	Japan	43	-49 (-53.3%)
43	0.3%	Venezuela	42	-29 (-40.8%)
44	0.3%	Jordan	40	-25 (-38.5%)

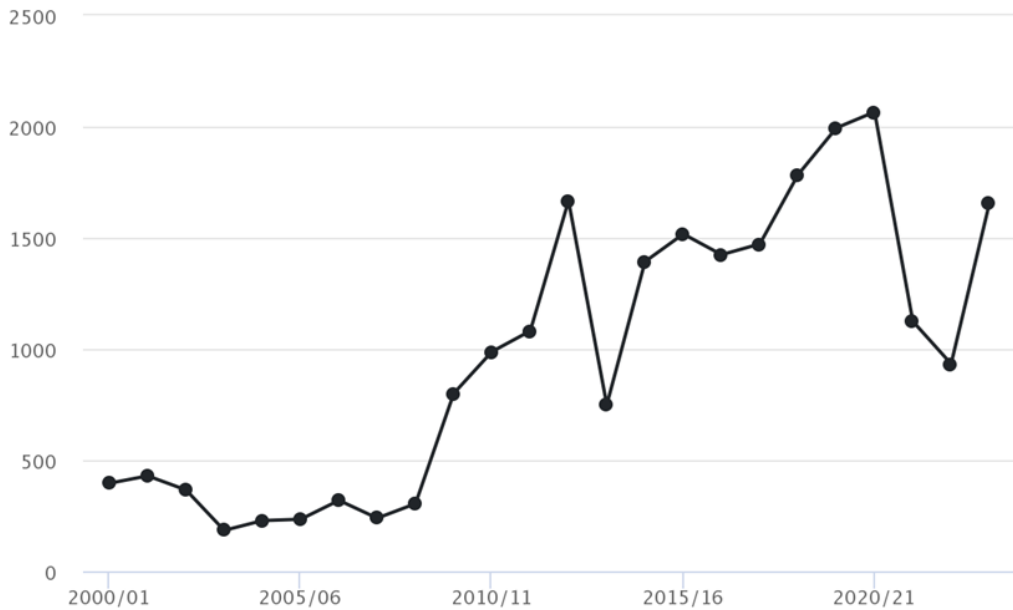
45	0.3%	Morocco	39	+20 (+105.3%)
46	0.2%	Kazakhstan	34	-13 (-27.7%)
47	0.2%	Lebanon	34	+3 (+9.7%)
48	0.2%	Honduras	32	-50 (-61.0%)
49	0.2%	Zimbabwe	30	-14 (-31.8%)
50	0.2%	Taiwan	29	-32 (-52.5%)
51	0.2%	Pakistan	27	-12 (-30.8%)
52	0.2%	Tunisia	27	-12 (-30.8%)
53	0.2%	Panama	23	-7 (-23.3%)
54	0.2%	Australia	22	+8 (+57.1%)
55	0.2%	Cambodia	22	0 (0.0%)
56	0.2%	Costa Rica	21	-18 (-46.2%)
57	0.2%	Ivory Coast	21	0 (0.0%)
58	0.1%	Guatemala	20	-9 (-31.0%)
59	0.1%	Uzbekistan	20	-1 (-4.8%)
60	0.1%	Nigeria	19	-28 (-59.6%)
61	0.1%	Ghana	17	-5 (-22.7%)
62	0.1%	El Salvador	16	+5 (+45.5%)
63	0.1%	Cuba	15	-17 (-53.1%)
64	0.1%	Kenya	10	-1 (-9.1%)
65	0.0%	Dominican Republic	6	-5 (-45.5%)
66	0.0%	Sri Lanka	6	+4 (+200.0%)
67	0.0%	Syria	5	-1 (-16.7%)
68	0.0%	Guyana	4	0 (0.0%)
69	0.0%	North Korea	4	0 (0.0%)
70	0.0%	Singapore	3	0 (0.0%)
71	0.0%	Bosnia-Herzegovina	2	- (-%)
72	0.0%	Jamaica	2	-4 (-66.7%)
73	0.0%	Macedonia	2	0 (0.0%)
74	0.0%	Georgia	1	0 (0.0%)
75	0.0%	Trinidad and Tobago	1	-5 (-83.3%)

Source: GrainUkraine - agricultural market statistics. URL: <https://bogdantymkiv.com/country/UA/>

Meal: Sunflower meal World

Indicator	2023/24	+/-
Initial stocks	1654	+721 (+77.3%)
Imports	9068	+478 (+5.6%)
Production	23444	+447 (+1.9%)
Export	9454	+627 (+7.1%)
Offer	34166	+1646 (+5.1%)
Consumption	23064	+1025 (+4.7%)
Feed consumption	22942	+1025 (+4.7%)
Industrial consumption	122	0 (0.0%)
Ending stocks	1648	-6 (-0.4%)

Sunflower meal. Initial stocks



No	Share	Geo	2023/24	+/-
1	27.0%	Ukraine	447	+322 (+257.6%)
2	14.8%	russia	244	+189 (+343.6%)
3	14.2%	EU	235	+50 (+27.0%)
4	13.5%	Turkey	224	+111 (+98.2%)
5	10.3%	Argentina	171	+45 (+35.7%)
6	5.1%	Belarus	85	+64 (+304.8%)
7	3.0%	Great Britain	50	+8 (+19.0%)
8	2.1%	Moldova	35	-42 (-54.5%)
9	2.0%	Kazakhstan	33	-16 (-32.7%)
10	2.0%	Uzbekistan	33	+6 (+22.2%)
11	1.5%	Morocco	25	+14 (+127.3%)
12	1.2%	Norway	20	+5 (+33.3%)
13	1.2%	South Africa	20	-4 (-16.7%)
14	0.7%	Serbia	12	-26 (-68.4%)
15	0.4%	Bolivia	6	-5 (-45.5%)
16	0.4%	Egypt	6	0 (0.0%)
17	0.3%	USA	5	0 (0.0%)
18	0.1%	Bosnia-Herzegovina	2	0 (0.0%)
19	0.1%	Switzerland	1	0 (0.0%)

Source: GrainUkraine - agricultural market statistics. URL: <https://bogdantymkiv.com/country/UA/>

**Report on approved grant projects for the creation or
development of horticulture, berry growing and viticulture as of
November 23, 2023.**

№	Enterprise	Oblast	The amount of the grant, hryvnias	Area, ha
			620877573	2049,26
1	TOV "SAD PEREYASLAVA"	Kyiv	6125000	25
2	TOV "ORHANIK ZAKHID- HRUP"	Lviv	6250000	25
3	TOV "PAL'CHE"	Volyn	3200000	15,72
4	FH "PAVLENCHUKA"	Chernivtsi	536000	1,34
5	FH "ROSY BUKOVYNY"	Chernivtsi	5992000	14,98
6	TOV "ROVY AHRO"	Kyiv	980000	15
7	FH "DARY VOLYNI"	Volyn	910000	8,48
8	TOV «MI-AHRO»	Kyiv	800000	6,43
9	FOP Hontar Nazariy Hryhorovych	Ivano-Frankivsk	360000	2
10	FH "K-AHRO"	Kyiv	6250000	25
11	TOV "ZAKARPAT·S'KE AHROPROMYSLOVE PIDPRYYEMSTVO"	Zakarpattia	10000000	25
12	FOP Shvartsman O.V.	Cherkasy	4000000	10
13	TOV "SADY POLISSYA"	Rivne	875000	5,4
14	TOV "VIKTORIYA SENS"	Kyiv	2708000	6,77
15	TOV "BEKON"	Kyiv	1600000	4,7
16	TOV "AHRO FRUTIKA BY SHKIV"	Lviv	8472000	21,18
17	FH "PRYKARPATTYA AHRO"	Ivano-Frankivsk	1750000	7
18	STZOV "ZORYA"	Khmelnitskiy	10000000	25
19	TOV "TIS-AHRO"	Zakarpattia	9750000	25
20	FH "EKO KRAY" Oroshan V.H.	Poltava	10000000	25
21	FH «AHRONAYS»	Volyn	990000	5,66
22	FH «BLYUBERRI FARM»	Lviv	3500000	8,75

23	PP «LADA AHRO»	Ivano-Frankivsk	1960000	7
24	FH «VAUBERRI»	Kyiv	4317600	15,42
25	TOV «INTEP»	Dnipropetrovsk	4000000	17,2
26	SFH «PERLYNA PODILLYA»	Vynnytsya	10000000	25
27	TZOV «PAL'CHE»	Volyn	2400000	6
28	FH «HOLD»	Odesa	290000	1,16
29	TOV "AHRARNA KOMPANIYA "EKO-PARK"	Chernihiv	9936000	24,84
30	FH «SVK PLYUS»	Dnipropetrovsk	4855000	19,42
31	FH «IVANCHUK»	Ivano-Frankivsk	2000000	5
32	FERMERS'KOMU HOSPODARSTVU «ZALUZ'KE»	Rivne	3850000	15,53
33	TOV «NATSTREYD»	Zakarpattya	5462500	21,85
34	FH «MARTIN 2021»	Dnipropetrovsk	3455000	8,64
35	FH «RENET»	Zakarpattya	10000000	25
36	TOV «MRIYA.»	Odesa	6247500	24,99
37	TOV «MADAVIYA»	Kyiv	2200000	9,15
38	TOV «ZAKARPATAHROSAD»	Zakarpattya	5337500	21,35
39	HOV «ORHANIK EKSPERT»	Kyiv	2213000	13
40	FH «PERFEKT»	Zakarpattya	956000	2,39
41	FH «ZAKHAR-SAD»	Lviv	5180000	18,54
42	FH «KARPATY EKO-FRUKT»	Zakarpattya	5820000	14,55
43	TOV «SIVEKO»	Poltava	3400000	8,5
44	FH "EKO BERRI"	Ivano-Frankivsk	5393250	23,97
45	FH "FRUT-SAD"	Vynnytsya	10000000	25
46	FH "TARTAKIVS'KYY MEL'NYK"	Lviv	1926600	10,14
47	TOV "HOLDBERI"	Kyiv	4747500	23,41
48	FH «SVITANOK IF»	Ivano-Frankivsk	3953250	17,57
49	PP «DYUK I K»	Zhytomyr	2364000	5,91
50	TOV «FUNDSAD»	Lviv	6125000	24,5
51	TOV «YARYLO AL'FA LEND»	Lviv	5882500	23,53
52	FOP Rohoza Pavlo Yuriyovych	Dnipropetrovsk	5715000	22,86
53	FH «HADZ»	Ternopil	10000000	25

54	FH «TTV»	Ivano-Frankivsk	5422000	16
55	FH «VYNOHRADAR IR»	Zakarpattya	2340000	9,36
56	TOV «SVAROH VII»	Lviv	4374000	19,44
57	TOV «PRAYM BERRI»	Zhytomyr	6726600	21,09
58	FH «BEST BERRI»	Ivano-Frankivsk	5724740	24,81
59	TOV «DUNAYS'KYY AHRARIY»	Odesa	1760000	4,4
60	FH «GRIN»	Zakarpattya	1208000	3,02
61	FH «DANYLO I K»	Odesa	1012500	4,5
62	TOV «SVITYAZ' 21»	Volyn	3160000	7,9
63	POPP «ELITA»	Kyiv	6250000	25
64	FH «AHROEKOTEKHNOLOHIYI»	Ivano-Frankivsk	760000	1,9
65	TOV «SONYACHNE»	Dnipropetrovsk	9200000	23
66	FOP Hrynshyn Roman Dmytrovych	Ivano-Frankivsk	1520000	8
67	FH «ALEKS 2019»	Zakarpattya	10000000	25
68	TOV «VLASOV»	Volyn	3500000	17,74
69	FOP Kochyzhev Dmytro Viktorovych	Dnipropetrovsk	250000	1
70	FH «ORHANIK BERRI»	Ternopil	5560000	22,24
71	FOP Havrylko Yuriy Viktorovych	Chernihiv	8520000	21,3
72	TOV «AHROYUNIT ZAKHID»	Ternopil	1320000	5,28
73	FOP Trotsenko Vladyslav Hryhorovych	Dnipropetrovsk	2740000	10,96
74	TOV «HORIKHOVI SADY»	Kyiv	5270000	21,08
75	FH «SADOCHOK+»	Vynnytsya	6280000	15,7
76	TOV «FH FRUKTOVI SADY»	Kyiv	5390000	21,56
77	TOV «FH SADY KYYIVSHCHYNY»	Kyiv	5245000	20,98
78	FOP Pylypiv Ihor Romanovych	Lviv	3400000	13,6
79	FH «POLIS'KYY KOLOS»	Volyn	5952000	14,88
80	TOV «FRUT SAD»	Vynnytsya	2640000	6,6
81	TOV «VIAN 2021»	Zakarpattya	2984200	10,18
82	TOV «UKRAHROSAN»	Zakarpattya	5735000	22,94

83	FH «KONYK»	Zakarpattya	4000000	10
84	TOV «UKRINVEST·SAD»	Volyn	3750000	15
85	FH «RADA»	Dnipropetrovsk	4500000	18
86	TOV «MOLODIZHNA AHRARNA SPILKA»	Chernivtsi	7344000	18,36
87	FOP Chmykh Olena Ihorivna	Vinnytsya	237000	1,25
88	FH «STADNYTSYA AHRO»	Kyiv	4197500	16,79
89	TOV "L'vivs'kyi sad"	Lviv	4252000	10,63
90	FH "SFH" Babychivs'ke"	Poltava	3500000	14
91	FH "Hold"	Odesa	755000	3,02
92	FH «SADVYNKRAFT»	Zakarpattya	236250	1,05
93	FH «REHINA 2019»	Zakarpattya	10000000	25
94	TOV «SADY DNIPRA»	Dnipropetrovsk	8064000	20,16
95	FH «AHROEKOTEKHNOLOHIYI»	Ivano-Frankivsk	1400000	3,5
96	TOV «KARPATBERRI»	Ivano-Frankivsk	3396000	8,49
97	SOK «DARY BEREHIVSHCHYNY»	Zakarpattya	10000000	25
98	FH «UHOCHA BERRI»	Zakarpattya	2230000	6,45
99	FH «SADY KARPAT»	Zakarpattya	4700000	11,8
100	TOV «NIKDARIYA»	Zhytomyr	7964000	19,91
101	TOV VKF «DEKOR»	Khmelnyskiy	580000	2,32
102	TOV «SADY POLISSYA»	Rivne	3992500	15,97
103	TOV «INTEP»	Dnipropetrovsk	3120000	7,8
104	FH «K.I.I.»	Lviv	1115000	4,46
105	TOV «BEKLERS FILDS»	Kyiv	1298250	5,77
106	TOV «AHRONUT»	Zakarpattya	5737500	22,95
107	TOV "PERLYNA NADROSSYA"	Vinnytsya	3411999	8,53
108	TOV «CHYSTYY PRODUKT»	Dnipropetrovsk	1665000	7,4
109	FOP Tsiryk Vira Andriyivna	Zakarpattya	4250000	17
110	FOP Drahovoz Andriy Hryhorovych	Kirovohrad	2020000	8,08
111	TOV «KHEYZELFILD»	Zakarpattya	5855000	23,42
112	TOV "FERMA SHCHASTYA"	Volyn	1287500	5,15
113	TOV "AHROHOSPODAR"	Kyiv	8156000	20,39

114	FOP Laba Kateryna Volodymyrivna	Khmelnyskiy	900000	3,6
115	TOV «LANDSHAFT PLYUS»	Dnipropetrovsk	9364000	23,41
116	FH «DAR ZEMLI»	Khmelnyskiy	1176000	2,94
117	TOV «TRIADA-MK»	Vinnysya	1725200	9,08
118	TOV «DEKOPARK»	Dnipropetrovsk	9240000	23,1
119	FOP Nakonechnyy D.R.	Lviv	6250000	25
120	FH «ROSY BUKOVYNY»	Chernivtsi	4000000	10
121	TOV «UKRZEMPRODUKT»	Chernihiv	10000000	25
122	TZOV «MIRMEKS»	Zhytomyr	2555000	10,22
123	TOV «MALYN PLANT»	Zhytomyr	4765499	21,18
124	TOV «ANTARES-AHRO»	Zhytomyr	4248300	22,36
125	FOP Bodnar Veronika Anatoliyivna	Zhytomyr	2152450	10,45
126	TOV «BIBERRI»	Odesa	10000000	25
127	FH «NATALIYA I.P.»	Volyn	3500000	25
128	TOV «FRUKT KONSALTYNH»	Zakarpattia	10000000	25
129	TOV «SUNYCHKA LTD»	Kyiv	2133600	7,62
130	STzOV «KOLOS»	Ivano-Frankivsk	1904000	4,76
131	FH «RIDNYI SAD»	Volyn	3160000	7,9
132	FH «RADCHUK»	Ternopil	10000000	25
133	TOV «MAKARIVS'KI SADY»	Kyiv	8924000	22,31
134	FH «STADNYTSYA AHRO»	Kyiv	2052500	8,21
135	TOV «Malyn Ahro Invest»	Zhytomyr	3524500	18,55
136	FOP Konstanytnov O.V.	Odesa	1200000	14,05
137	FH «AHRO-AHRI»	Lviv	3192500	12,77
138	FOP Fedyak A.V.	Ivano- Frankivsk	2434285	10,65
139	TOV «BARKAS ROYAL»	Poltava	975000	3,9
140	TOV «FRESH BERRI»	Mykolayiv	1533000	10,95
141	FH «EKO SIMBINO»	Ivano-Frankivsk	6250000	25
142	TOV «AHROMIKS ZAKARPATTYA»	Zakarpattia	924000	2,31
143	FOP Kochyzhev Dmytro Viktorovich	Dnipropetrovsk	500000	2

Annex D

Report on approved projects for the construction of a modular greenhouse for the purpose of providing grants for the creation or development of a greenhouse economy as of November 23, 2023

№ п/п	Enterprise	Oblast	The amount of the grant, hryvnias.	Area, ha
			172,85	41,78
1	TOV "YAHIDNYY DAR"	Dnipropetrovsk	7,00	1,60
2	TOV "HRIN LEND LTD"	Odesa	7,00	2,38
3	FH "AHRO-EKOPRODUKT"	Vinnytsya	7,00	1,62
4	TOV "LIBERA LEND"	Dnipropetrovsk	6,90	1,85
5	FH "TANDEM AHRO"	Dnipropetrovsk	7,00	1,60
6	TOV "SVOYI VITAMINY"	Dnipropetrovsk	7,00	1,60
7	TOV "AHRO-AL'YANS ZAKARPATTYA"	Zakarpattia	7,00	1,62
8	FH "LAN AHRO"	Kyiv	7,00	1,60
9	FH "AHROFIRMA FRUTKO"	Zhytomyr	7,00	1,76
10	POLONS'KE FH "KOLOS"	Khmelnyskiy	7,00	1,60
11	TOV "PODILLYA OVOCHI"	Ternopil	7,00	1,61
12	FOP "YEVDOKYMENKO"	Kyiv	2,00	0,40
13	FH "EKO-KRAY"	Poltava	7,00	1,62
14	TOV "VITYAZ' 21"	Volyn	3,50	0,80
15	FOP HUDYMA	Vinnytsya	7,00	1,60
16	TOV "YELLOW."	Khmelnyskiy	7,00	1,60
17	STOV IM. CHKALOVA	Cherkasy	2,00	0,49
18	TOV "HOLDBERI"	Kyiv	2,00	0,40
19	TOV "LANBERRI"	Kyiv	7,00	2,37
20	TOV "ZELENA HALAKTYKA"	Chernihiv	2,00	0,40
21	TOV "PIHREYN"	Dnipropetrovsk	6,95	1,6
22	FOP Roman	Vinnytsya	3,50	0,81
23	FH "VOLYNS'KYY SAD"	Volyn	3,50	0,8
24	TOV "ADAMANTIK"	Kyiv	2,00	0,4

25	FH "DIALINA"	Vinnytsya	7,00	1,60
26	FH "YAHIDNA KRAYINA"	Chernihiv	2,00	0,41
27	FH "BEST BERRI"	Ivano-Frankivsk	7,00	2,00
28	TOV "SAN ROST AHRO"	Dnipropetrovsk	7,00	1,6
29	TOV "MOYA DACHA"	Kirovohrad	3,499996	0,8
30	FOP Konstantynov	Odesa	7,00	1,62
31	TOV "PERSPEKTYVA-2"	Ternopil	7,00	1,62

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Monograph

INCLUSIVENESS OF AGRI-FOOD SECTOR OF UKRAINE: FEATURES, THREATS AND OPPORTUNITIES FOR IMPLEMENTATION IN THE CONTEXT OF INSTABILITY

*Edited by corresponding member of NAS of Ukraine
Shynkaruk L.V.*

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