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National Scientific Center "Institute of Agrarian Economics"
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Economics of seed production

Yurii Lupenko,

Editor-in-chief of the journal "Ekonomika APK"



This year, Ukraine is steadily approaching the next agricultural record - exceeding the 80 millionth volume of the gross grain harvest. Its achievement was possible due to favourable weather conditions and the victorious labour of the Ukrainian peasantry, and the expansion of the solidification of modern technologies, high-quality resources, primarily seeds. Considering the scale and capabilities of domestic agriculture, the seed market is becoming more and more competitive; the world's leading companies are working on it, which are gradually replacing national seed producers. Under such conditions, the system of state regulation of this market is becoming increasingly significant, thus, to ensure anticompetitive actions or changes in the political and (or) economic situation in the world do not result in significant losses of the achieved production volumes and the emergence of threats to the food security of the state. The problems of this segment of the domestic agricultural economy are considered in the study by the academician of NAAS Yu.O. Lupenko, doctor of economics, prof. O.V. Zakharchuk, candidate of economics Ya.F. Navrotskyi which is presented to the readers.

Regarding other markets, the author hopes for interest in the research results on the modernisation of land relations written by academician of NAAS P. T. Sabluk; efficiency of economic cooperation

in the milk market by the doctor of economics, prof. A.O. Zainchkovskyi and M.V. Krivun; foreign trade with the countries of the European Union by the doctor of economic sciences H.V. Spaskyi.

Continuing the research results on the problems associated with the COVID-19 pandemic is the research of doctors of economics, professors O. M. Mohylnyi and N. I. Patyka, which the authors consider the issue of protected employment of the rural population. Among its features, should be highlighted innovative approaches to solving the problem.

The subject of innovation is discussed in the research by the doctor of economics O.M. Nechyporenko, candidate of agricultural sciences Yu.M. Nosenko and L.M. Sinelnik on the financial incentives for developing scientific and innovation clusters.

The results of research by young scientists, in particular, O.S. Lukova on the classification of financial instruments, D.M. Lialko concerning the income from the export of Ukrainian corn (note that profit is an important indicator, but first of all – an economic category!), O.V. Lebid on e-government of the economy of the future are widely presented in the issue of the journal.

Hopefully, such a palette of scientific subjects will contribute to the growth of the journal's popularity and more fully satisfy the interests of different categories of readers.



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Scientific Support of the Organisation of State Regulation of Seed Production Development in Ukraine

Yurii Oleksiiovych Lupenko^{1,2*},
Oleksandr Vasylovych Zakharchuk¹, Yaroslav Fedorovych Navrotskyi¹

¹National Scientific Centre "Institute of Agrarian Economics"
03127, 10 Heroiv Oborony Str., Kyiv, Ukraine

²National Academy of Agrarian Sciences of Ukraine
01010, 9 M. Omelianovych-Pavlenko Str., Kyiv, Ukraine

► **Abstract.** In recent years, Ukraine has seen rapid growth in agricultural business, which is a key sector of the Ukrainian economy. Farmers are well aware that to reduce production costs in crop production, improve product quality, and increase profitability, it is extremely crucial to use high-quality seed material. The purpose of the research - based on the results of the analysis of the state of the seed industry of the country and scientific support of the organisation of state regulation of seed development in Ukraine to substantiate proposals for its improvement, using the experience of advanced countries. Justify measures designed to improve the system of domestic legislation in the field of seed production, payment of breeding and licensing fees and proposals to reduce the dependence of agricultural production on seed imports. Methods used: monographic (analysis of the state of scientific support of the organisation of state regulation of seed product development in the country); statistical (to reflect the state of domestic seed production in quantitative and cost terms through a system of absolute and relative indicators); analysis of series of dynamics, structural changes (to analyse and identify trends in the development of seed production in Ukraine); tabular and graphical (visual display of research results in the form of tables and graphs), comparison (comparison of economic indicators); abstract-logical (generalisation and development of conclusions). The current state and prospects of scientific support of the organisation of state regulation of seed production in Ukraine are analysed. The problems of the development of domestic seed production are determined. The experience of leading countries in the field of seed production and the possibility of its use in Ukraine are highlighted. Summarised the current state of the organisation of state regulation of seed production in Ukraine. Proposals for improving its scientific support have been developed. New science-based approaches to improving the system of license fees, regulatory framework and ways to reduce import dependence on seeds were proposed. The proposed ways to overcome the existing problems in the industry will allow raising it to the level of world powers by changing approaches to royalty payments, increasing the productivity of seed production and improving the legislation regulating seed production in Ukraine

► **Keywords:** breeding, royalties, state regulation, plant variety, seeds and planting material, market, import, export

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*Corresponding author

► Introduction

The key place in agricultural production belongs to such sectors as breeding and seed production. The development of domestic breeding and seed production, the entry of domestic varieties to the international market, attracting foreign investment to establish a seed infrastructure that would meet international requirements and provisions are impossible without the introduction in Ukraine of clear and understandable “rules of the game” in the seed market for its main participants, ensuring legal and transparent intellectual property rights to breeders and breeding institutions and determining the conditions of state support for breeding and seed production [1].

Therefore, the cultivation of conditioned seeds and planting material of high generations is considered an essential factor in the development of agriculture and the primary source of economic growth of the crop industry. It is evidenced by global development trends related to the food crisis, biotechnology, genetic engineering, reorientation to non-conventional fuels, adaptation to climate change, etc. Insufficiently satisfying demand in the world food markets requires further growth of agricultural potential, including through seed production. Currently, when the role of innovative factors has increased significantly, it will be strengthened in agriculture. The establishment of proper ownership of plant varieties and protection of breeders' rights will contribute to this.

Recently, the position of domestic seed production to satisfy the requirements of agricultural production with seeds of national origin is somewhat deteriorating due to the state of scientific farms due to imperfect legal support and the level of state support. In turn, this can result in unjustified dependence on seed imports and decrease the level of food security in the country. Therefore, the subject under study is extremely relevant, and the proposals substantiated in the research will contribute to the development of the seed industry and the growth of the provision of agriculture with seeds of highly productive varieties of national selection. Analysis of recent studies and publications. A significant contribution to the development of seed production, organisation of methodological and

methodical principles of breeding and variety research work, investigation of the problems of royalty payment, the economics of seed production, further establishment of the seed production system and state support for scientific support of the industry was provided by such scientists as S.S. Bakay [2], M.I. Vavilov [3], V.V. Volkodav [4], M.V. Zubets [5], O.V. Zakharchuk [6, 7, 8], P.E. Marinich [9], E.D. Nettevich [10], V.A. Oreshnikov [11], L.M. Hudoliy [12], P.M. Tsibulov [13], V.V. Yurchishin [14] and others.

The purpose of the research – is based on the results of the analysis of the state of the seed industry of the country and scientific support of the organisation of state regulation of seed development in Ukraine to substantiate proposals for its improvement, using the experience of advanced countries. Justify measures designed to improve the system of domestic legislation in the field of seed production, payment of breeding and licensing fees and proposals to reduce the dependence of agricultural production on seed imports.

► Summary of the main results of the study

The system of state regulation of seed production development in Ukraine is based primarily on the Laws of Ukraine's “On Seeds and Planting Material” [15] and “On Protection of Rights to Plant Varieties” [16], which generally comply with the main European canons.

Historically, the active development of seed production in Ukraine as part of the USSR began in 1923 (Table 1). After gaining independence in 1993, the first Laws of Ukraine “On Seeds” and “On Protection of Rights to Plant Varieties” were adopted. In 1995 Ukraine became a member of the International Union for the Protection of New Varieties of Plants. Thus, it was recognised that it is a state in which the individual rights of breeders and breeding institutions are protected.

In 2002 the Law of Ukraine “On Seeds and Planting Material” was adopted, which significantly expanded the provisions of the previously adopted Law “On Seeds”. Over the past 12 years, Ukraine has joined 4 of the 7 OECD seed varietal certification schemes for grain, corn and sorghum seeds, cruciferous, oilseeds, bast crops, and sugar and fodder beet [17].

Table 1. Development of seed production system in Ukraine

Year	Events
1923	The All-Ukrainian Seed Union was established
1993	The Laws of Ukraine «On Seeds», «On Protection of Rights to Plant Varieties» were adopted
1995	Ukraine became a member of the International Union for the Protection of New Varieties of Plants (UPOV)
2002	The Law of Ukraine «On seeds and planting material» was adopted
2009-2020	Ukraine's accession to the OECD seed variety certification schemes: (1) grains; (2) corn and grain sorghum; (3) cruciferous, oilseeds, spinning crops; (4) sugar and fodder beet
2015, 2018, 2019	The next amendments to the Law of Ukraine «On Seeds and Planting Material» were adopted in terms of compliance with European and international provisions and standards

Source: Systematised by the authors

In recent years, in particular in 2015, 2018 and 2019, new amendments to the Law of Ukraine on Seeds and Planting Material [15] were adopted in terms of compliance with European and international provisions and standards. Therefore, it can be assumed that national seed production has legislative support that corresponds to world practice. National seed production includes four main components. The first component is selection and innovation; the second – state qualification examination; the third – seed production (reproduction) and the fourth component – varietal and seed control. Each component of national seed production is assigned to subjects, and their main purposes and tasks are defined. All components are organised and function under the management of the Ministry of Agrarian Policy and Food of Ukraine.

The efficiency of seed production is characterised by using the data of conditioned varietal seeds. Ukraine is one of the last countries with developed seed production. The level of certified conditioned seeds in Ukraine does not exceed 5-8%, while in Poland – 18%, Germany – 43%, the average in Europe – 50%, and in such advanced EU countries as the Netherlands, Sweden and Denmark the level of certification reaches 75-90%. It is impossible to determine the USA, as for the plain regions of the country the level of use of certified seeds is 10%, in the East – 50, and in the Pacific Northwest – 85%.

The current state of national seed production is characterised by the main indicators (Table 2). These include: the potential value of seeds, at the

level of 53 billion UAH in Ukraine; seed turnover – 36-40 billion UAH; seed production – 2.3-2.5 million tons; seed production entities operating in the seed market – about 500 units; the number of operating seed plants – 47 units; the number of varieties and hybrids – about 9 thousand; primary seed production, which is performed only for four thousand varieties [6]. In this regard, the question arises: whether the State Register of Plant Varieties suitable for distribution in Ukraine registers the so-called stillborn varieties. As the indicator demonstrates, only 40% of the varieties and hybrids of plants registered in the state register are used, and the rest are displayed only for statistics.

The varieties of plants registered in the state register include 2542 grains, 2291 industrial, 2719 potato-vegetable-gourds and mushrooms, 563 fruit and berry crops and grapes (Table 3).

During the years of independence, there has been a rapid development of the varietal composition of seed production. In the period 1991-2020, the number of varietal resources increased almost 5 times, and for some crops, in particular corn – 22 times, sunflower – 45 times. Significant growth is observed in all other crops, except grapes, decorative, oilseeds and medical plants. The decrease in the last two positions is due to the annexation in 2014. Crimea, parts of Donetsk and Luhansk regions, where they were most represented.

The increase in the number of varietal resources by 5 times should be considered a positive phenomenon, but the average yield of crops during

this period increased by only 30-40%, which indicates the lack of a strong correlation between these

indicators. In general, national seed production has the potential to compete with foreign producers.

Table 2. Main indicators of seed production development in Ukraine

Indicator	Value of the indicator
Potential value of seeds, billion UAH	52.8
Seed turnover in Ukraine, billion UAH	36.0
Production volume, million tons	2300-2500
Seed production entities, pcs.	496
Seed plants, pcs.	47
The number of varieties and hybrids, pcs.	8871
Primary seed production (management), pcs.	4069
Export, mln USD	13-17
Import, mln USD	500
Royalty paid, UAH mln	80-100
Potential royalty value, UAH million	3000.0
Potential value of selection payments, UAH million	900-1000

Source: Calculated by the authors

Table 3. Structure of species composition of varietal resources of Ukraine

Crop	1991			2020			2020 to 1991, times
	number varieties	ua breedings	%	number varieties	ua breedings	%	
Winter crop	80	53	66	863	534	62	10.8
Including wheat	40	32	80	468	338	72	11.7
Yara	189	121	64	1679	821	52	8.9
Including corn, without parental components	54	38	70	1176	549	47	21.8
barley	21	13	62	154	89	58	7.3
Oilseed and spinning	65	37	56	2044	648	32	31.4
Including sunflower, without parental components	17	7	41	769	203	26	45.2
Fodder	214	165	77	459	332	72	2.1
Technical	33	24	73	247	54	24	6.8
Potato	37	22	59	165	67	41	4.5
Vegetables, gourds, mushrooms	265	100	38	2554	671	26	in 9.6
Fruit and berries	370	199	54	512	433	85	in 1.4
Grape	93	34	37	51	49	96	in 0.5
Decorative, essential oil and medical	549	225	41	297	271	91	in 0.5
Total varieties	1895	890	47	8871	3880	44	in 4.7

Source: Calculated by the authors

Despite significant improvements in the domestic seed market, Ukraine is still far from other European countries in providing production crops with high-quality certified seeds of the highest categories and unlocking its potential export

opportunities. It is an extremely alarming phenomenon, due to which domestic agriculture loses the most, reducing its competitiveness in the European and world markets. Therefore, the author believes that by only using high-quality certified seed

material Ukraine has a chance to compete in the global food market along with the countries of the European Union [8]. The seed production system in Ukraine includes the selection and propagation of seeds of domestic varieties, imported seeds of foreign varieties and their propagation, testing and registration of varieties, seed certification, etc. The system operates on a competitive foundation and in general, ensures constantly growing production of crops and satisfaction of the demand for their products. With the total need to provide the sown areas under production crops, 1.5-1.6 million tons of winter wheat seeds are required. If assuming that only two-thirds of the produced conditioned seeds will be sold, that is, about 92 thousand tons, this will be only 5.8% of the total demand. The average European sales of conditioned seeds reach 50%.

Most of the conditioned seeds of domestic selection are produced in Kharkiv (31.6 thousand tons), Dnipropetrovsk (11.8 thousand tons) and Odesa (7.7 thousand tons) regions, while foreign selection – in Ternopil (11.9 thousand tons), Khmelnytsky (8.8 thousand tons) and Kyiv (5.2 thousand tons) regions. Moreover, the Kyiv region receives the largest amount of certified foreign seeds from abroad – 0.9 thousand tons, of the total – 1.1 thousand tons, or 80.0%. Therewith, with using highly productive varieties of foreign breeding, it becomes urgent to intensify the development of domestic breeding and increase the production of own varieties in Ukraine, which will contribute to increasing the level of food security [20]. The situation is characterised by the production of certified conditioned seeds, which include: supplementary, basic and certified seeds (Table 4).

Table 4. Production of conditioned seeds of main crops in Ukraine in 2020 (additional, basic and certified)

Crop	Seeds of Ukrainian selection, thousand tons	Seeds of foreign selection, thousand tons		Seeds of foreign selection, thousand tons	Total seed production, thousand tons	Seeds of Ukrainian breeding, %
		imported to Ukraine	produced in Ukraine			
Winter wheat	93.6	1.1	46.7	47.8	141.4	66.2
Spring barley	19.3	0.2	13.9	14.1	33.4	57.8
Winter barley	10.5	0.3	10.5	10.8	21.3	49.3
Corn	32.2	24.4	54.4	78.8	111.0	29.0
Winter rye	1.0	0.4	4.9	5.3	6.3	15.7
Total grains	156.6	26.4	130.4	156.8	313.4	50.0
Soybean	2.3	0.4	18.7	19.1	21.4	10.7
Winter rape	0.5	3.9	0.2	4.1	4.6	10.2
Sunflower	3.4	31.3	11.4	42.7	46.1	7.4
Total oilseeds	6.2	35.6	30.3	65.9	72.1	8.6
Total grains and oilseeds	162.8	62.0	160.7	222.7	385.5	42.2
Potato	0.1	2.1	23.2	25.3	25.4	0.5

Source: Calculated by the authors based on the data of the State Statistics Service and the Customs Service of Ukraine [21, 22]

According to the Register of Certificates for Sowing and Commercial Quality of Seeds, 156 thousand tons of grain seeds of Ukrainian selection were produced in 2020. In addition, seeds of foreign selection of grain crops were imported and received in Ukraine in the same amount, that is,

the ratio is 1:1. The situation with oilseeds, which include soybeans, sunflower, and winter rape, is more complicated, as the seeds of Ukrainian selection were produced only 6.2 thousand tons, while foreign selection – 65.9 thousand tons, or 90% of the total.

In total, in 2020, 162.8 thousand tons of conditioned seeds of main grains and oilseeds of Ukrainian selection were produced, or 42.2% of the total certified seeds. Seeds of foreign selection in the amount of 62.0 thousand tons were imported from outside Ukraine, and another 160.7 thousand tons of such seeds were produced and certified in Ukraine. The total amount of conditioned seeds of foreign selection reaches 222.7 thousand tons or 57.8%.

Although grain crops prevail in the structure of seed crops, the export of their seeds is only 20-26 thousand tons per year. Therewith, the volume of seeds of foreign selection produced in Ukraine has already reached 130 thousand tons, which is 6 times more than its export. All these seeds, getting to the market, develop the varietal seed supply of Ukraine. Seeds of

potatoes and sugar beet of domestic selection are mostly compensated by seeds of foreign varieties.

High annual grain production in Ukraine at the level of 75-80 million tons is possible only by increasing the yield of major grain crops. The further harmonious development of the breeding and seed production sectors, where one of the main tasks of the latter is to bring domestic seed products to the level of world standards, increase their competitiveness and the widest possible implementation in Ukraine and abroad, is considered an essential component in ensuring productivity increase. The level of provision of agricultural production with products of domestic selection is insufficient (Fig. 1). Only seeds of buckwheat, millet, oats and triticale of Ukrainian selection are 100% used in agriculture.

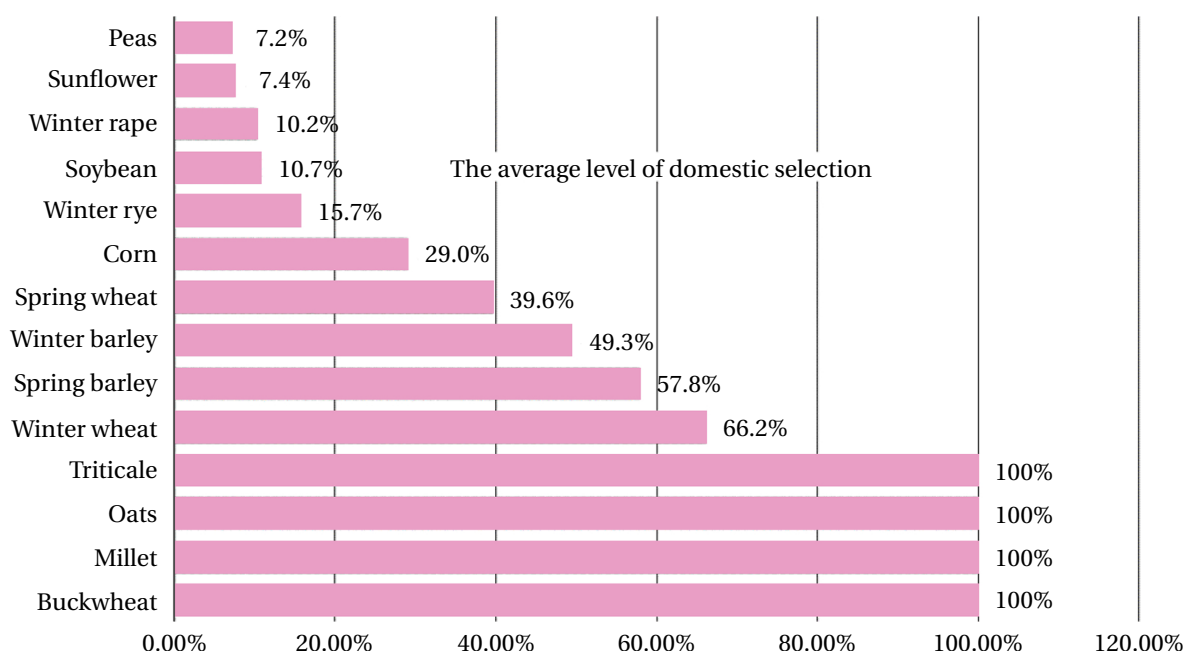


Figure 1. Level of domestic breeding in the production of conditioned seeds of major crops

Source: Calculated by the authors based on the data of the State Statistics Service and the Customs Service of Ukraine [21, 22]

Regarding other crops, the situation is as follows: winter wheat – 66%, spring barley – 58%, and for winter barley, spring wheat, winter rye, corn, soybeans, sunflower, and peas, the share of domestic varieties is below 50%.

The average level of provision of production with varieties of domestic selection for grains and oilseeds is about 40%. During 2005-2020, imports of seeds of grains and oilseeds only increased. There-

with, the prices of 1 ton of corn, sunflower, wheat and soybeans increased. That is when in 2005 wheat seeds could be purchased for 333 USD/t. USD/t, then in 2020 the price rose to 1562 USD/t or 4 times. USD/t, or 4.7 times. Soybeans in 2006 cost 1000 USD/t, then in 2020 – 1771 USD/t.

Therewith, prices for hybrid corn and sunflower increased even more significantly. In 2005, a ton of hybrid corn cost 2192 USD, in 2020 – already 4496

USD, or 2.1 times more expensive. If in 2005 hybrid sunflower could be bought for 6161 USD/t, then in 2020 – 10703 USD/t, or 1.7 times more expensive.

The increase in the cost of imports is due to the increase in prices for imported seeds, which are already several times higher than domestic selection. Thus, Ukrainian farmers annually sell 70-75 thousand tons of hybrid seeds of foreign corn, 27-30 thousand tons of sunflower, 5-7 thousand tons of rapeseed and 0.6-0.7 thousand tons of sugar beet. Among the main reasons for the demand for hybrids of foreign selection in comparison with domestic ones are the following: higher yield, higher quality of seeds of the EU and the USA compared to domestic seeds, trust in foreign seeds due to the presence of counterfeit in the domestic market, high brand, a brand of goods of breeding companies of the EU and the USA.

Seeds worth 400-500 million USD are imported to Ukraine annually, and the production of conditioned seeds of foreign selection, financed by foreign companies, is performed within the state for almost the same amount – about 500 million USD. It may eventually result in the complete displacement of domestic varietal resources from the market of seeds and planting material and even threaten the food security of Ukraine. Imports of seed corn in 2020 increased 4 times compared to 2005, wheat – 6 times, and sunflower – 11.4 times. Import of soybean, rapeseed, sugar beet and vegetable seeds to Ukraine is growing.

Over the past 15 years, the dynamics of imports of seeds of foreign selection, despite the instability of annual volumes, maintains a general upward trend. It is evidenced by the imports of corn and sunflower seeds (Fig. 2), and wheat and soybeans (Fig. 3).

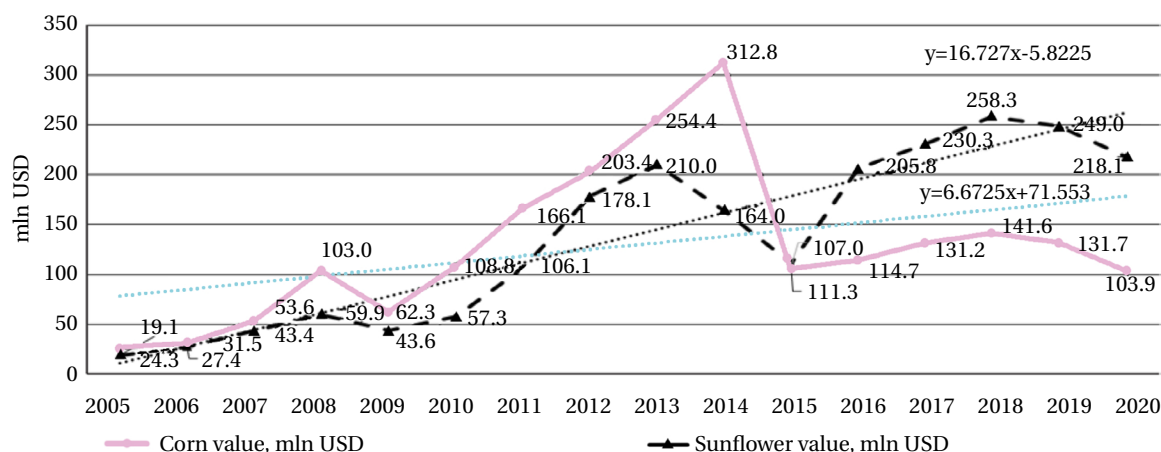


Figure 2. Dynamics of corn and sunflower seed imports to Ukraine in 2005-2020, USD mln

Source: Calculated by the authors based on the data of the State Statistics Service and the Customs Service of Ukraine [21, 22]

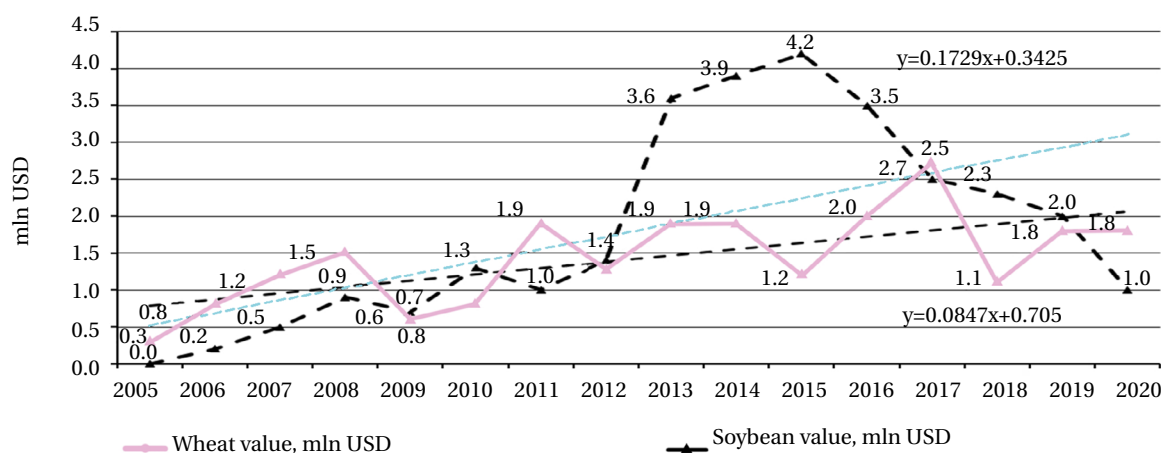


Figure 3. Dynamics of wheat and soybean seed imports to Ukraine, 2005-2020, USD mln

Source: Calculated by the authors based on the data of the State Statistics Service and the Customs Service of Ukraine [21, 22]

In 2020, only sunflower was imported at 218 mln USD, corn – 104, wheat – 1.8, soybeans – by 1.0 million USD. USD. If the linear trend of imports of these crops, based on the data of the last 15 years, continues in the future, it should be expected that in the future the cost of imported sunflower, rapeseed and corn seeds will only increase. Such growth will occur for wheat, soybeans, sugar beets and other

crops, although at a slightly slower pace. A significant contribution to the provision of agriculture with domestic seeds is provided by research farms of the NAAS network (Fig. 4). The volume of seed sales has been slightly decreasing in recent years. The share of sales in recent years ranged from 55 to 60%, although in previous periods it reached 75% and more (Fig. 4).

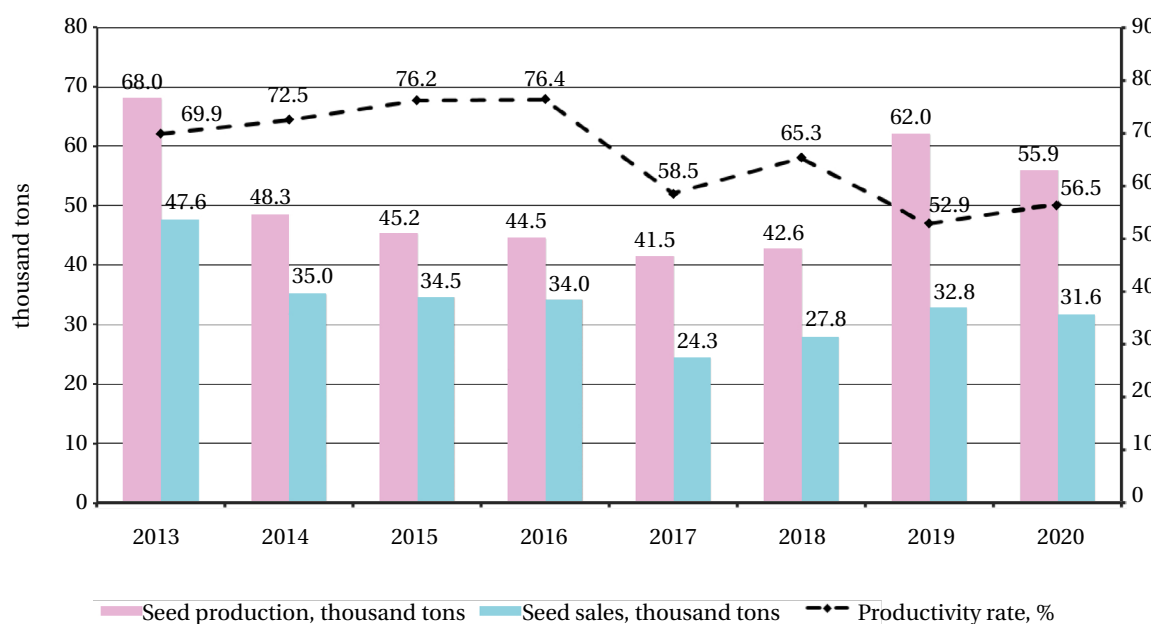


Figure 4. Production volumes of grain seeds in the research farms of the NAAS network in 2013-2020 thousand tons

Source: Estimated by the authors according to NAAS data

The production of conditioned seeds of major grains and oilseeds by scientific institutions, research stations and state enterprises of research farms of NAAS in 2020 amounted to about 45.9 thousand tons (additional, basic and certified). 31.6 thousand tons or 68.8% of all produced conditioned seeds were sold. Over the past eight years, there has been a decrease in both production and sales of licensed seeds. If in 2013 NAAS sold almost 50 thousand tons of it, in 2020 – only 30 thousand tons. The number of license agreements concluded by NAAS institutions is decreasing, but the payment of royalties on them is increasing (Fig. 5).

The amount of total royalties paid in Ukraine is UAH 80-100 million, although it could potentially be up to UAH 3 billion. Thus, only 1/30 of the royalty potential is used, and breeding payments, the value of which could reach about UAH 900 million, are not made at all. These funds could serve the development of the seed industry and breeding. Therefore, the

implementation of measures to fully use the mechanisms of royalty and breeding payments will largely solve the problems of domestic seed production [7].

The recognition by the European Parliament of Ukraine's seed certification system as equivalent to EU requirements last year allowed Ukraine to export seeds to EU countries such as Germany, Romania, Poland, France and Hungary in small batches as early as 2021. Ukrainian seeds gained access to the European Union market – one of the most attractive and the most protected from foreign seeds markets in the world. Seeds that will be produced on the territory of Ukrainet – both domestic selection and selection of foreign seed companies operating in Ukrainet – will be sold.

The tendency to increase the import of seed material in Ukraine since 2015 has continued this year and is the result of a rapid increase in demand due to the increase in its consumption by holding

companies and large and medium-sized producers. In addition, quarantine restrictions and the reduction of logistics operations in 2020-2021 gave

impetus to the development of foreign breeding companies within the country to provide agricultural producers with products.

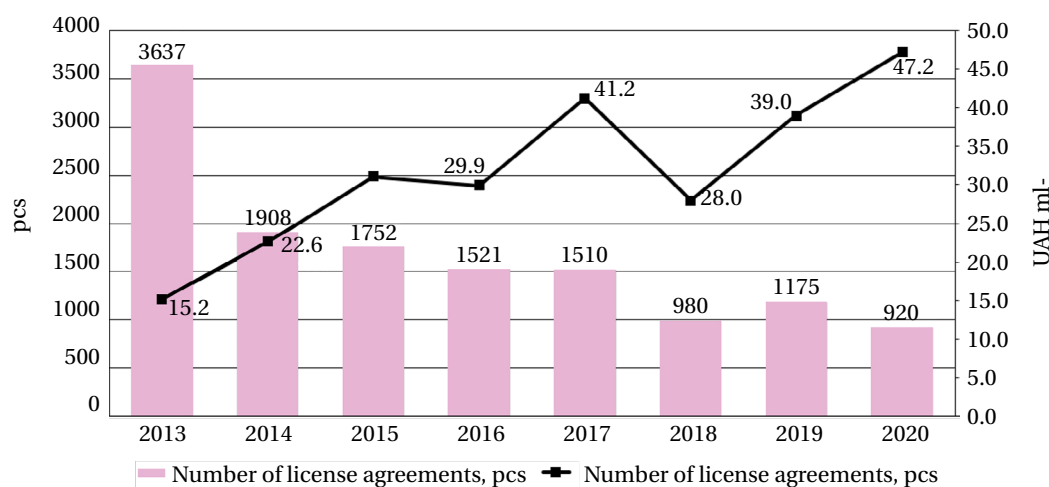


Figure 5. Commercialisation of scientific and knowledge-intensive products of research institutions of the NAAS, 2013-2020

Source: Estimated by the authors according to NAAS data

The development of national seed production in the future will depend, first of all, on the organisation of the system of collection of breeding payments, which should be developed considering the world experience. An example is the system of collection of selection payments in such leading countries as France, Germany and Canada. Thus, the system of selection payments in France is focused on the indicators of sales of commercial grain by farmers. The amount of selection payments here is determined by the product of the farmer's sales volume of commercial grain and 0.7 euros for each ton sold. The amount of breeding payments determined in this way is transferred to the private breeding organisation **GNIS**, which controls the quality of varieties. There, this amount is distributed to the **SICASOV** organisation, which controls the payment of royalties and, accordingly, breeding payments, where these funds are used for the requirements of the breeder. That is, from each ton of grain sold, 0.7 euros are allocated for the development of breeding and innovative research [23].

The German royalty system is more in line with the European model. Here, a license fee is taken for certified seeds, that is, a royalty of 15 euros/t is paid, and this is almost 50% of the area sown with certified seeds. In Germany, only due to this approach, 47 million euros of license fees (royalties) are collected. Therewith, for the remaining 50% of crops,

selection payments are performed for non-certified seeds, in which the selection fee is paid for each variety for 4.4 euros/ha of crops. Thus, an additional 14-15 million euros [24; 25, p. 5-12].

In Canada, there is a mechanism of selection fees similar to the French one. The program of commodity deductions for 1 ton of sold commercial grain provides for payment of 1 Canadian dollar. For information, the Canadian dollar is lower in value than the US dollar, its converted value into Ukrainian currency is about 20 UAH [26].

If this Canadian mechanism was introduced in Ukraine, which annually sells 50-60 million tons of grain, then at a rate of 20 UAH per 1 ton, 1.0-1.2 billion UAH would be allocated for the development of national breeding. Such funds would allow the development of a modern material and technical base for breeding and a system of royalties for breeders.

The system of breeder liability in Poland is quite interesting and, in principle, simplified. It considers that there are certified seeds for their requirements (farmer's seeds). If certified seeds are not subject to breeding payments and are free of charge, then seeds for their requirements are divided into two types: by protected plants (except potatoes) and by protected potato species (PL/UE level). Thus, if a Polish farmer does not bear royalty obligations, he pays breeding payments when the size of his sowing

area exceeds 25 hectares for all grain crops, and for potatoes – more than 10 hectares [27, 28].

The legislative and regulatory framework for the payment of royalties in Ukraine is based on the following international and national regulations: UPOV Convention [29], the Law “On Protection of Rights to Plant Varieties” [16], the Law “On Seeds and Planting Material” [15], the Resolution of the Cabinet of Ministers of Ukraine “On Measures for Implementation of the Law of Ukraine “On Protection of Rights to Plant Varieties” [30], the Resolution of the Cabinet of Ministers “On Approval of the Procedure for Maintaining the State Register of Seed and Nursery Subjects” No. 882 [1].

In each region, there is an attestation commission of the Ministry of Agrarian Policy and regional commissions, certification of producers on royalties paid, that is, license and labour agreements are concluded, and verification of compliance with certification requirements is performed. According to the assessments, the legal and regulatory framework for royalty payments in Ukraine is sufficient but can be improved. For this purpose, a document on amendments to the Resolution of the Cabinet of Ministers of Ukraine No. 1183 [30] was prepared, which more clearly defines the property rights of the authors of the variety in terms of breeding payments.

The volumes of royalty and breeding payments in Ukraine and EU countries are quite different. For example, compare France, Germany and Ukraine, which are close both in terms of area and crops. The amount of royalties and breeding fees paid in France is 125 million euros, in Germany – 65, while in Ukraine – only 3 million euros. Thus, if compared with the best practices, royalties and breeding payments in Ukraine are practically non-existent, and ten times less money is paid for the protection of intellectual property. The calculation of the amount of license and breeding payments in Ukraine is as follows: royalties are paid for UAH 100 million from the area of 350 thousand hectares. If selection payments in Ukraine were paid for the entire area of crops, which is about 9 million hectares, and at a rate of approximately 3 euros or more, the amount to support selection could reach 900 million UAH.

If the Canadian or French model of collecting breeding payments (per ton of marketable grain), or Polish or German (per 1 ha of marketable crops) is

used as a foundation, in all cases, the budget of domestic breeders and breeding institutions could be replenished by almost 1 billion UAH. Therewith, full protection of intellectual property should be provided for each variety.

Despite this, there is a requirement to improve the mechanism of obtaining license payments based on the real reflection of using the cost of seeds and planting material, applying for a license and sublicense agreements, and breeding payments for Farm Saved Seed – seeds for own requirements, and their registration by an independent accounting, supervision and control body.

To this end, first of all, it is necessary to resolve the issue of introducing mandatory declaration of varietal production crops by agricultural producers who own agricultural land of 25 hectares or more, increasing the role of professional public organisations of Ukraine in terms of registration of license agreements and royalties, and control, registration and maintenance of the database of seed and commercial crops by varieties and hybrids.

These changes can increase revenues through the payment of licensing and breeding fees for the production of new highly productive and high-quality varieties of domestic breeding in a civilized, transparent, state-regulated market circulation of seeds and planting material and the protection of intellectual property rights of breeders and breeding institutions.

Recent amendments to the Laws of Ukraine “On Seeds and Planting Material” [15] and “On Protection of Rights to Plant Varieties” [16], which passed the first reading in the Verkhovna Rada of Ukraine, somewhat simplify the overregulation of the seed production system in terms of state registration. Therewith, in the current version, they place the national breeding in unequal conditions regarding the state qualification examination, practically exempting the registration of foreign varieties without testing in Ukraine (Article 27 part 3 paragraph b). But the proposals of NAAS were not considered in the modified form of amendments in the first reading to the laws of Ukraine “On Protection of Rights to Plant Varieties” [16] and “On Seeds and Planting Material” [15] in 2021. The law mentioned first in the text contains several fundamental contradictions and without their elimination, in the author’s opinion, its action will be ineffective (Table 5).

Table 5. The main contradictions of the Law “On Protection of Plant Variety Rights”, were not considered in the first reading

Provisions of the law	Proposed NAAS revision	Commentary
Consider the results of qualification examination studies conducted by the Competent Authority of any other State Party	To consider the results of qualification examination studies on distinctiveness, homogeneity and stability performed by the Competent Authority of any other Member State	It should be considered that the International Convention on the Protection of New Varieties of Plants provides for the possibility of considering only the results of the examination of the variety for distinctiveness, uniformity and stability, conducted by the Competent Authority member of the international union UPOV
To consider as the results of the various examination for one year the data of the pre-registration variety study, if such pre-registration variety study was performed by the expert institution or the applicant under the control of the expert institution Disagree, please state in the revision	Consider as the results of the various examination for one year of the data before the registration variety study, if such a pre-registration variety study was conducted by an expert institution	The examination should be conducted for at least two years in one place of research in the same conditions. It is impossible to compare the results of the examination (yield, productivity, product quality) if the conditions of the research have changed. Such studies cannot be statistically processed
The information database has the status of an official publication and an official source of information on plant variety applications and information on their legal status	To leave unchanged in the previous version	The database of plant varieties is a huge array of data, and part of the information (breeding scheme) is confidential, all information about applications is not obligatory for public disclosure
Importation to Ukraine of samples of varieties intended for qualification examination shall be performed based on the notification of the Competent Authority on acceptance of the application for consideration, importation of research samples of the variety for qualification examination	To leave unchanged in the previous version	Samples are imported for a qualification examination, and storage of the official sample - must be considered in the title of the notification. The question arises: are these two forms of notifications or one?
Varieties of vegetable crops, applications for which have been submitted to the Competent Authority for state registration of the variety, may be distributed for exhibition in Ukraine until the decision on state registration of such varieties is adopted according to the procedure determined by the Cabinet of Ministers of Ukraine	To leave unchanged in the previous version	Corruption scheme of importing unregistered varieties from abroad. Why such privileges to varieties of vegetable crops? Contradicts the provisions of international and European legislation. What is the control over seeds imported for exhibition purposes?

Source: Authors' development

In addition, the Government Resolution “On Amendments to the Resolution of the Cabinet of Ministers of Ukraine No. 1183 dated August 19, 2002” [28] in the part of “conditions for observance of the legitimate interests of the patent holder”, which may resolve the issue of collection of breeding payments for seeds for own requirements.

The world market of grains and oilseeds is over-saturated. This is especially true for the European market, where there is fierce competition between leading seed producers and breeding institutions. Only the country whose breeding science and seed companies provide the highest quality seeds can survive in such a struggle and emerge victorious. Without

the intensification of breeding activities, it is impossible to compete for the best quality seeds [30].

All developed countries finance fundamental research from the budget as the most expensive. Private breeding institutions enter the competition to improve discovery, usually only after a fundamental discovery has been made. It is particularly typical for the process of breeding hybrids. According to the laws of most Western countries, only the first breeder of a new variety (hybrid) of seeds has the right to reproduce and sell it. The processes in breeding are extremely intensified. Sufficient state funding, protection of rights to varieties, royalties (payment for using the intellectual property for new varieties),

their use provides high protection to the Western breeder in the competition, allows actively conducting research. Therewith, competitors get the opportunity to use the results of previous studies in their research. The expectation of the possibility of monopoly profits extremely accelerates the supply of more and more new varieties and hybrids to the market.

If Ukraine fails to apply a similar system shortly, it may result in a loss of priorities, a chronic backlog of the breeding industry and dominance of foreign varieties. Under conditions of lack of budget funding, a radical measure to support and protect the interests of breeding centres and breeders in Ukraine should be the introduction of a system of royalty and breeding payments. The lack of appropriate market conditions of legal regulation of relations related to new plant varieties adversely affects the efficiency of domestic breeding, reduces the supply of quality and high-yielding seeds of new varieties and hybrids on the market, and ultimately hinders the efficiency of the development of the crop industry and agriculture in general.

Therewith, state support for domestic breeding is constantly decreasing, which adversely affects the efficiency of domestic seed production. Such a situation may minimise the presence of domestic varietal resources in the market of seeds and planting material, which will pose a threat to the food security of Ukraine.

► Conclusions

The research results demonstrate that it is extremely important for the successful balanced development of seed production in Ukraine:

- to improve the legal provisions and aspects of royalty payment in Ukraine, considering the experience of their use in the EU and other leading countries of the world;
- to introduce mandatory declaration of varietal

production crops by agricultural producers who own agricultural land of 25 hectares or more (for potatoes – 10 hectares or more);

- develop a clear mechanism for receiving license payments based on the real reflection of using the cost of seeds and planting material, using license and sublicense agreements, and breeding payments for Farm Saved Seed – seeds for own requirements, and their registration by an independent accounting, supervision, and control body;

- to increase the role of professional public organisations of Ukraine in terms of registration of license agreements and royalty payments, and control, registration, and introduction of seed and commercial crops database by varieties and hybrids;

- to increase revenues through the payment of licensing and breeding fees for the production of new highly productive and high-quality varieties of national selection; to provide for confirmation of royalties and/or FSS payments as a condition of state support for reimbursement of the cost of seeds/planting material of national selection;

- to outline and implement state protectionist measures to protect the domestic seed market from foreign expansion;

- introduce state support for Ukrainian seed production and breeding in the domestic market through breeding and seed programmes;

- to identify further ways to improve the quality of Ukrainian seeds, particularly hybrid seeds, where domestic selection is noticeably losing in comparison with foreign ones;

- to develop and implement mechanisms to combat seed counterfeiting in the domestic market;

- to develop a state program for the development of domestic breeding and seed production.

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Наукове забезпечення організації державного регулювання розвитку насінництва в Україні

Юрій Олексійович Лупенко^{1,2},

Олександр Васильович Захарчук¹, Ярослав Федорович Навроцький¹

¹Національного наукового центру «Інститут аграрної економіки»
03127, вул. Героїв Оборони, 10, м. Київ, Україна

²Національної академії аграрних наук України
01010, вул. Михайла Омеляновича-Павленка, 9, м. Київ, Україна

► **Анотація.** За останні роки в Україні спостерігається стрімке зростання аграрного бізнесу, який є ключовою галуззю української економіки. Аграрії добре розуміють, що для зниження виробничих затрат у рослинництві, поліпшення якості продукції, підвищення її прибутковості надзвичайно важливим є застосування якісного насіннєвого матеріалу. Мета статті – на основі результатів аналізу стану галузі насінництва країни та наукового забезпечення організації державного регулювання розвитку насінництва в Україні обґрунтувати пропозиції щодо його поліпшення, використовуючи досвід передових країн. Обґрунтувати заходи, спрямовані на удосконалення системи вітчизняного законодавства у галузі насінництва, виплати селекційних та ліцензійних платежів і пропозиції щодо зменшення залежності аграрного виробництва від імпорту насіння. Використано методи: монографічний (аналіз стану наукового забезпечення організації державного регулювання розвитку насінництва в країні); статистичний (для відображення стану вітчизняного насінництва у кількісному і вартісному виразі через систему абсолютних і відносних показників); аналізу рядів динаміки, структурних зрушень (для аналізу й виявлення тенденцій показників розвитку насінництва в Україні); табличний та графічний (наочне відображення результатів дослідження у вигляді таблиць та графіків), порівняння (зіставлення економічних показників); абстрактно-логічний (узагальнення та формулювання висновків). Проаналізовано сучасний стан і перспективи наукового забезпечення організації державного регулювання розвитку насінництва в Україні. Визначено проблеми розвитку вітчизняного насінництва. Висвітлено досвід провідних країн у галузі насінництва та можливість його використання в Україні. Узагальнено існуючий стан організації державного регулювання розвитку насінництва в Україні. Розроблено пропозиції щодо покращення його наукового забезпечення. Запропоновано нові науково обґрунтовані підходи до удосконалення системи ліцензійних платежів, нормативної бази та визначено шляхи зменшення імпортозалежності стосовно насіння. Запропоновані шляхи подолання існуючих в галузі проблем дозволять підняти її до рівня світових держав через зміну підходів до виплат роялті, збільшення продуктивності насінництва та удосконалення правових актів, що регулюють виробництво насіння в Україні

► **Ключові слова:** селекція, роялті, державне регулювання, сорт рослин, насіння і садивний матеріал, ринок, імпорт, експорт



UDC JEL Classification: Q15; Q10

Problems of Land Modernisation in Ukraine

Petro Sabluk*

National Academy of Agrarian Sciences of Ukraine
01010, 9 M. Omelianovych-Pavlenko Str., Kyiv, Ukraine

► **Abstract.** The necessity of improving land relations in the agricultural sector at the local, regional and national levels is becoming more urgent considering the objectives of the current reformed land use, an important component of which is the establishment of environmentally friendly and cost-effective mechanisms for land use in agriculture. The purpose of the study - highlight and justify the theoretical provisions of land relations in improving the situation in agricultural production. The theoretical provisions on the characteristics of land relations in market conditions and using agricultural land in the activities of the agro-industrial sector of Ukraine became the foundation for the study. General scientific methods of production management and knowledge of the processes of development of production land relations served to achieve the purpose of the study. Knowledge of the specifics of the agrarian sector, the real state of rural life, and involvement in the process of a qualitatively new state of the economy – the land market, is evidence that the market economy in content is self-supporting and determines: the comparison of costs with revenues from the sale of products; allows free enterprise, independence, responsibility and interest of the commodity producer; the implementation of the activities of the business entity, in the centre of which is a person and his vital social protection. The strategic principles of reforming land relations in agricultural production of the country as a prerequisite for their rational organisation at the present stage of management in rural regions have been developed. Application of theoretical provisions of land relations, their reform and establishment as a transformational process in agricultural production. The results of the study are identified as influential factors in the development of the land market in the new economic conditions

► **Keywords:** strategic principles, market economy, new agrarian system, land value, food supply, economic mechanism, peasants' interests

► Introduction

Ukraine as a state is increasingly entering the market system of the world community. Based on the international division of labour, it should determine its niche in the world economy. By all accounts, agriculture is such a niche. Therefore, finding a market for its products in the world is the primary task of the state. Its agrarian policy should be oriented to this. In economic terms, the state should ensure the most efficient use of natural and land resources

with a guarantee of improving the economic situation and achieving such volumes of production that would both provide full and high-quality nutrition for the population, and export competitive agricultural products and products of its processing with sustainable profits (Khodakivska, & Mohylnyi, 2018).

The real condition for the implementation of such a policy should be the recognition by all government bodies and spheres of activity of the

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*Corresponding author

priority importance of the agricultural sector compared to all others, focusing efforts on the priority development of agro-industrial production as the largest consumer of the results of all spheres and industries in the domestic market.

It is impossible to improve the situation in agriculture without introducing a market mechanism based on modernisation. There was an opinion that it could be introduced faster in the agricultural sector than in other areas. However, this opinion is far from indisputable. It reflects insufficient knowledge of the specifics of the agricultural sector, the real state of the village and related sectors of the agro-industrial complex. Such a simplified perception is based on formal analogies with Western countries and even some countries of the post-socialist camp. However, in no country has the village and the land been brought to a devastating state, and the peasant - to spiritual and physical degradation, to the destruction of entrepreneurial economy, the foundations of market infrastructure. Therefore, great caution is required in conducting analogies with other countries.

Admittedly, the movement to the market is a transition to a qualitatively new state of the economy. Any aspect of this process in the agricultural sector is associated not with less but probably with greater difficulties than in other sectors, as evidenced by the major structural links of the market economy.

First. The market economy, in its content, is a self-supporting economy, which provides for the comparison of costs with revenues from the sale of products (services) and the determination of financial results (profit, loss). Such self-support is valid in all countries with developed market economies. Therewith, Ukraine has been searching for forms and methods, options for self-supporting activities for years, but this task has not been solved. They work successfully in the world by ensuring the functioning of the market economy. Thus, the development of the market economy is, first of all, the provision of activities on the well-known principles of self-sufficiency - economic independence, interest, responsibility, control of the hryvnia, etc.

Second. A market economy presupposes free enterprise, with the owner-occupier as the central figure. He needs to develop a multi-structured

economy instead of the previously existing single-structured one based on monopoly state ownership. The way to such an economy lies through the processes of establishing and supporting the owner.

Third. The development of the market mechanism involves the transition to the free sale of products and wholesale trade in resources. The necessary attribute of such a mechanism is free prices, which are developed under the influence of supply and demand. The scope of state regulation is significantly narrowing. It is limited only to those functions that are national. Moreover, the state influence on entrepreneurs-producers is performed considering their interests, mainly through economic regulators.

Fourth. To develop products with a consumer-oriented approach, rather than a plan imposed from above, based on free enterprise, direct ties with allied companies in terms of resource supply and sales of products, appropriate market infrastructure and organisational and economic market mechanisms are required. The market of goods should be organically complemented by the markets of capital, land and labour. The relevant exchanges and banks are designed to serve these markets.

Fifth. In a market economy, the activities of any business entity and its products are evaluated by the market, before which all are equal. The transition to the market is performed for the sake of a person, and a high level of their welfare. The market should work exclusively in the interests of the individual. Hence the significance of social protection measures that have a particular specificity for rural residents.

Thus, the above main structural links reflect the essence of a market economy. They are general, go beyond the borders of individual industries, and concern all spheres, including agriculture. However, each of the identified problems is characterised by fundamental features, and that, contrary to popular perceptions, do not facilitate, but even complicate the transition to the market.

► Analysis of recent studies and publications

Aspects of land relations were considered by numerous studies in the works of domestic scientists: O.M. Borodina (Borodina, 2020); Y.M. Hadzalo (Hadzalo, et al., 2021); P.I. Haidutskyi

(Haidutskyi, 2014); A.S. Halchynskyi (Halchynskyi, 2009); M.V. Hladii, Yu.Ya. Luzan (Hladii, & Luzan, 2020); A.S. Danilenko; M.F. Kropyvko (Kropyvko, 2016); I.I. Lukinov (Lukinov, 2002); Yu.O. Lupenko (Lupenko, 2021); V.Ya. Mesel-Veseliak, M.M. Fedorov (Hadzalo, et al., 2021; Yurchyshyn, Sabluk, Mesel-Veseliak, Fedorov, 1993); A.M. Moskalenko (Volkohon, Moskalenko, 2021); L.Y. Novakovskiy (Novakovskiy, 2009; Novakovskiy, & Tretiak, 2020); A.M. Tretiak (Novakovskiy, & Tretiak, 2020); O.V. Khodakivska (Khodakivska, Patyka, & Harhasas, 2019; Khodakivska, Mohylnyj, Kolesnyk, Mykhalchyshyna, & Khomyachenko, 2019; Khodakivska, & Mohylnyi, 2018); O.M. Shpychak (Shpychak, & Bodnar, 2012); V.V. Yurchyshyn (Yurchyshyn, Sabluk, Mesel-Veseliak, Fedorov, 1993), etc. The results of the conducted research are reflected in scientific and textbooks, which consider land relations as a system of development of production relations in agriculture.

The purpose of the study – highlight and justify the theoretical provisions of land relations in improving the situation in agricultural production.

► Summary of the main results of the study

Failure to recognise the value of land in agrarian production capital with the definition of a specific owner brought the village and the peasant to an economic dead end. To a large extent, in recent years, these processes have been adversely affected by the position of some political forces that were against private ownership of land, did not recognise its price and value, and even more – as a commodity. Without private ownership of the land, it is impossible to develop a market economy, as land is one of the main types of production resources. The concept of land marketability is determined by the recognition of the value and price of the resource, and its introduction into the system of economic turnover of state resources, rather than by the process of its purchase and sale, which is regulated by legislation. Without this, the economic owner is deprived of the economic aspect and finds himself in unequal economic conditions with producers of other industries.

The value of land should be recognised as a component of productive capital. In each case, it should reflect the role and importance of this

resource in achieving the final economic results. Inflationary processes should not affect the loss of the natural form of land owned by the owner.

The philosophy of establishing enterprises and organisations in the agricultural sector should be oriented towards satisfying the interests of the farmer-owner and the farmer in general. Ukraine has completed the development of new economic structures on a private foundation. Science has elaborated, and practice has accepted various models and variants of such forms. In the newly established farms, production relations are based on ownership relations both for labour and for land and property.

Currently, no less urgent is the issue of establishing the same economic “rules of the game” for all spheres and sectors of the national economy. In the author’s opinion, it was and remains one of the main functions of the state. However, it should perform them not by command methods and interference in the production activities of producers but through the efficient use of economic levers. Objectivity in the application of such economic methods to all sectors of the country’s economic complex will be the greatest support of the state in the development of agro-industrial production.

The state requires to revise the pricing policy, which should be fair to the agricultural sector. It is not possible to agree with the situation that prices for industrial goods are constantly growing at a higher rate than for agricultural products. The thesis proposed by science to provide the system of pricing in the starting period of equal profit on equal capital, with the inclusion of the value of land in the agricultural capital, has not found understanding and support and is not perceived by many at present. Neglect of this fundamental element of a market economy has resulted in the near bankruptcy of public-sector agricultural enterprises.

The theoretical models of market economy formed in developed countries are distinguished mainly by the social orientation of economic activity, and the role of the state in the economic reproduction process. When evaluating foreign market models, it should be remembered that in practice there is no so-called free market, particularly for agriculture.

The experience of countries with economies in transition demonstrates that those of them that have embarked on the path of market reforms (East Germany, Poland, Hungary, Czech Republic, Romania, Lithuania, Estonia, Albania, etc.) have overcome or are successfully overcoming the difficulties of the transition period in a short period and are increasing their economic potential, in particular in the agricultural sector. In Ukraine, the society has not consolidated on a precise definition of the ways of development of the national economy, thus, currently, three economies are operating simultaneously – administrative-command economy, which has nothing to do with state regulation from the standpoint of modernity, shadow and market economies, which are developing in different areas. In the above list, the market economy is placed last not by chance but as a sign that it now belongs to the leading place. After all, a market economy is a self-supporting economy, when profit (loss) is determined by comparing the revenue from the sale of products (services) with the full costs of its production. The longer this “three-policy” economy is in place, the more difficult the process of establishing a market economy in the self-supporting sense will be, the more non-payments will increase, and their impact on production efficiency will be detrimental. Thus, the awareness of the market economy process is developed.

Therewith, the market economy has its own “rules of the game” (market laws), ignoring which results in distortion of economic relations and development of crisis phenomena. In particular, the failure to consider land relations in these rules, in the author’s opinion, was the main reason that all the last components of market relations in economic terms work against the land, which results in crises in agriculture.

However, despite the decline in production and significant socio-economic losses caused not by the reform processes but by the global economic crisis in general, the agricultural sector is gradually transforming into a fundamentally new agrarian system, opposite to the one that has prevailed in the country for more than 70 years in the form of collective and state farms. Instead of collective property,

private land use and land ownership developed. Organisational forms of management have changed.

Under the previous system of management, Ukraine was unable to ensure an appropriate level of agricultural production. Thus, back in 1990, the Verkhovna Rada of Ukraine adopted the Law “On Transition to a Market System of Management”. The Law of Ukraine “On the priority of social development of the village and agro-industrial complex in the national economy” was adopted (Law of Ukraine No. 400-XII..., 1990). However, the mechanisms and tools for their implementation and control have not been developed yet.

The laws adopted in 1990 had to be implemented step by step, but for many years this was resisted, including by those who voted for them. If the decision on the necessity of transition to the market system of management has been adopted, it is not clear what the discussions have been about until now. As for the peasants, not all of them were psychologically ready for the new conditions of management. It demonstrates, first of all, their lack of understanding of the economic content of reforms, and market self-supporting economic system. And this is not surprising, since a significant part of managers and specialists still do not accept such concepts and categories as capital, goods, profit margins, and excess profit development, which should be used in all vertical and horizontal economic activities. However, there are still unnecessary discussions around this alphabetical truth. Is it possible to establish normal production relations in the countryside, while neglecting land relations? However, many politicians who adopted the law on the transition to a market economy still do not consider land relations to be a component of production relations. And Ukraine has been in such uncertainty for almost a quarter of a century.

It should be understood that the world is ruled by financial capital. To balance the role of different types of capital, it is necessary to find the full value of productive agricultural capital, which cannot be achieved in agriculture without including the value of the land. Without land – the main resource of production, agriculture is destined to lose in comparison with other industries. Many are still afraid of the land market. But it is not the main thing. First of

all, it is necessary to acknowledge the value of land as a resource, to know its price. If we will receive accumulations or dividends on the mentioned resource, then the question will arise: to sell it or not? In this regard, there is an instructive example when the chief of an Indian tribe was given dollars, offering to sell the land, he threw the dollars into the fire and said: "Look, the money is burning, but the land is not! I will not sell it". Therefore, the land and its economic fertility as a national wealth must have a value and, accordingly, a price.

Without belittling the place, role, and importance of any sector in the economy of Ukraine, the only right thing to do is to assume that agriculture, agro-industrial production in general, is the most important among them. According to the objective law that has developed over the centuries, a country, if it wants to be strong and independent, must take care of its food supply. In world practice, the fact that the reconstruction of the country's economy began with agriculture has proved itself.

The analysis of the economic state of agricultural development confirmed the rightness of the position of agricultural economists that the implemented economic mechanism in the agro-industrial complex and economic policy was based on false foundations and therefore was unable to bring the Ukrainian economy on a growth trajectory, and the imperfection of pricing policy, monetary system, taxation and other components of the economic mechanism. In general, the macroeconomic policy appeared to be imperfect and subordinated to the state fiscal interests so it began to contradict the interests of agriculture and peasants, and this was the main reason for the critical state of agricultural production.

Most of the reasons for the current state of agriculture and agro-industrial complex are outside agriculture, namely in the sphere of macroeconomics, while the economic mechanism does not work in favour of agriculture. Such a situation is explained, first of all, by the lack of competitiveness of agricultural products and processing industries in the domestic market. The flow of cheap imported food products has captured a share of consumers. In addition, a large number of enterprises in Ukraine operate under the cost model of management. There

is an increase in the cost of production, in particular milk, meat, eggs, and other livestock products. In addition, it applies to the fruit and vegetable industry. With low effective demand from consumers, domestic products do not find sales, therefore, producers are forced to sell them at prices below costs.

In Ukraine, there is objectively no possibility for substantial support of commodity producers and the equivalent exchange of products between agriculture and industry, and therefore there are too large disproportions.

The crisis in the agricultural sector is intensifying, as most agricultural enterprises and organisations that produce consumer goods are outside the current functioning market. A significant part of the consumer market is represented by imported goods, about 80% of bank capital serves only the sphere of circulation. The latter does not go to rural producers but mainly circulates in import-export trade, which is recognised as one of the main reasons for the decline of important sectors of the agro-industrial complex. Distorted market relations do not provide savings for reproduction, thus, natural forms of production are introduced. At the beginning of the agrarian reform, in 1991, the author published in the journal "Bulletin of Agricultural Science" (№ 2) the article "Market from the standpoint of an agricultural economist" (Sabluk, 1991; Sabluk, & Luzan, 2019). It outlined the first steps of agrarian transformations, which later became the foundation of the concept of agrarian reforms. First of all, an essential condition for the transition to a market economy was the implementation of land reform in Ukraine.

The issue of land ownership is extremely significant, as land is the property of the people living in a particular territory. Therefore, the most important thing in the implementation of land reform in the country is the transfer of land to the ownership of villages, settlements, and city territorial communities, providing them with full authority over the land fund. Currently, the processes of decentralisation of power in Ukraine require using all available reserves, particularly land reserves.

Self-reliance, independence of the citizen, and revival of the true owner of the land are impossible without private property. Based on the right to

dispose of land, which was granted earlier by the Land Code of Ukraine (Land Code of Ukraine No. 2768-III..., 2002) it is necessary to have permanent land commissions consisting of people's deputies, managers, specialists of agricultural enterprises and governing bodies, lawyers, and land surveyors.

The Land Commission decides on the preparatory work that precedes the provision of land for a possession, use (including lease) or its sale and withdrawal, in particular:

- inventory of land by landowners and land users;
- analysis of land use status;
- clarification of the demand for the land of

industrial enterprises and organisations wishing to conduct subsidiary agriculture or arrange collective gardening and horticulture.

To establish an economic mechanism for the rational use of land, improve its quality, and strengthen the reliability of protection, the legislation provides for paid land ownership and land use. Payment for land is performed in the form of land tax or rent, the amount of which depends on the quality and location of the land plot.

Payment for land and rent should go to the budget of rural and settlement territorial communities. Such funds should be used exclusively for the intended purpose of measures to improve land fertility, financial incentives for landowners, land users and tenants, land management, and land protection.

The level of income of farmers, which the state refused to regulate, does not allow them to provide even simple reproduction of production. As a result, agricultural workers receive the least income per unit of resources invested in production, and land is not a component of the capital of these resources. For this reason, the wages of farmers are two to three times lower than in other sectors of the economy, as a result of which they do not receive their due payment every year.

Reacting to such injustice, peasants refuse to work on the land granted to them in the process of reforms, rent it out, and massively leave for cities or to work in other countries.

Peasants should be actual owners of the land and the results of work on it, and today there are almost 7 million owners of land shares. Without this,

rural areas will not develop, and social issues in the countryside will not be solved. Moreover, there will be no economic growth of the state, as agriculture is based on the functioning of more than 12 sectors of the country's economy.

Notably, despite all the difficulties in Ukraine, a lot has been done to develop the national economy. In particular, several Presidential decrees have been adopted, and a strategic model of innovation and investment development has been developed, according to which Ukraine's economy is classified as an industrial country. The active role of the state in the search for mechanisms and tools for optimal development of the agricultural sector was initiated in 2004 by the Law "On State Support of Agriculture of Ukraine" (Law of Ukraine No. 1877-IV..., 2004; Sabluk, 2019). Therefore, it is crucial to bring this work to its logical conclusion. In particular, it is necessary to manage budgetary resources rationally and efficiently. If these funds are used to produce machinery, and fertilisers, reduce the cost of loans, support leasing, etc., bypassing the peasant, the effect will be minimal.

To ensure the efficient operation of the Law "On State Support of Agriculture of Ukraine", it is necessary to develop the tools for its application, to ensure that the difference between the minimum and maximum procurement prices, the establishment of which is provided by law, is the price corridor that is skillfully used by all civilized countries of the world and which should be fully implemented by Ukraine.

First of all, it is necessary to eliminate the imbalance between the demand for basic foodstuffs and the population's ability to pay. It is well-known that the level of consumption of staple foods is much lower than the rational provisions. The total nutritional value of the diet decreased by one-third. There is insufficient filling of the market with many types of domestically produced food. The protection of domestic producers in the domestic market requires strengthening. The domestic food market is not sufficiently organised, which results in an unjustifiably large number of intermediaries and a low share of products sold under contracts.

The practice of reform in the agro-industrial complex demonstrates that with the intensification of transition processes, land lease and the expansion

of its market turnover become the main instruments of the mechanism for further development of land relations (in the field of concentration of land in the ownership of efficiently operating farms of all types). The condition for such involvement is the comprehensive development of the entire market mechanism, clear state regulation of the land market, and the entire system of agrarian relations according to the laws of the market. Thus, it is necessary to legislate such regulation of land relations.

► Conclusions

Due to the current unsystematic agricultural policy, the efficiency of the potential of agriculture is significantly impaired. Due to the limited managerial state influence on rural development, the strategic purposes of economic entities are not achieved.

Notably, the rural settlement network is changing due to the significant progress of labour migration of residents, loss of their interest in working

on their land, and hence the reduction of additional financial resources that ensure the functioning of the village. If villages are devastated, then there is an almost complete curtailment of measures to restore rural land relations, the fertility of agricultural land, and the return on the labour invested in them is lost. All this testifies to the lack of a coherent national policy in the field of land relations in the country.

It is the modernisation of land relations that provides an opportunity to objectively assess the value of land, and to equalise economic problems in the agricultural sector, which should have a positive impact on the state and development of rural areas. Thus, the highest authorities (Ministry of Agrarian Policy and Food of Ukraine, Cabinet of Ministers of Ukraine) should support with practical actions those specific mechanisms that will successfully work for the development of land relations in the state with the active participation of land resources in the economic turnover of the economy.

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Проблеми модернізації земельних відносин в Україні

Петро Трохимович Саблук

Національної академії аграрних наук України
01010, вул. Михайла Омеляновича-Павленка, 9, м. Київ, Україна

► **Анотація.** Необхідність удосконалення земельних відносин в аграрному секторі на локальному, регіональному і загальнодержавному рівнях загострюється з огляду на завдання нинішнього пореформеного землекористування, важливою складовою якого є створення еколого-безпечних та економічно-ефективних механізмів використання земель у сільському господарстві. Мета статті – висвітлити та обґрунтувати теоретичні положення земельних відносин у поліпшенні ситуації в сільськогосподарському виробництві. Основою для дослідження стали теоретичні положення щодо характеристики земельних відносин у ринкових умовах та використання сільськогосподарських земель у діяльності агропромислового сектору України. Досягненню мети дослідження слугували загальнонаукові методи управління виробництвом та пізнання процесів формування виробничих земельних відносин. Знання специфіки аграрного сектору, реального стану сільського життя, задіяння у процес якісно нового стану економіки – ринку землі, виступає свідченням того, що ринкова економіка за змістом це госпрозрахункова економіка і визначає: зіставлення витрат з виручкою від реалізації продукції; допускає вільне підприємництво, самостійність, відповідальність та інтерес товаровиробника; здійснення діяльності суб'єкта господарювання, в центрі якого є людина і її життєвий соціальний захист. Розроблено стратегічні засади реформування земельних відносин в аграрному виробництві країни як передумови їх раціональної організації на нинішньому етапі господарювання в сільських регіонах. Застосування теоретичних положень земельних відносин, їх реформування і становлення як трансформаційний процес у сільськогосподарському виробництві. Результати дослідження визначено як впливові фактори на формування ринку землі в нових умовах господарювання

► **Ключові слова:** стратегічні засади, ринкова економіка, новий аграрний устрій, вартість землі, продовольче забезпечення, економічний механізм, інтереси селян



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The Efficiency of the Economic Mechanism of Interaction of Dairy Market Participants and Functioning of Dairy Processing Enterprises

Anatolii Zainchkovskyi*, Mykhailo Kryvun

National University of Food Technologies
01601, 68 Volodymyrska Str., Kyiv, Ukraine

► **Abstract.** In the current conditions, the production of dairy products occupies a leading place in the agro-industrial complex of Ukraine. Ukraine has a high economic, climatic and labour potential for the development of the dairy industry. The purpose of the study – a comprehensive analysis of the efficiency of the economic mechanism of relations between the participants of the dairy market, and indicators of the functioning of dairy processing enterprises with the justification of the areas of its improvement. In the course of the study, several methods were used: abstract-logical – for developing conclusions; comparative analysis – for comparing the performance indicators of dairy processing enterprises and identifying trends in their changes; tabular – for visualising the results of the study; coordinate matrix – in determining the aggregate integral indicator of the efficiency of dairy processing enterprises; calculation and constructive – to calculate indicators of economic efficiency, liquidity and solvency, financial stability and business activity of enterprises; monographic – in detailing current trends in the functioning of dairy processing enterprises; factor analysis – to determine the factors influencing the net financial result of enterprises. The modern transformations occurring in the market of milk and dairy products in Ukraine are considered, and the scale of the decrease in supply and demand indicators is established. The current state of the raw material base of milk processing enterprises of Ukraine (dynamics of purchase prices for milk, quality monitoring, a retrospective of milk purchases by dairies) is analysed. The efficiency of functioning of milk processing enterprises of the group of companies “Milk Alliance” was monitored. The element structuring of analysis of the efficiency of functioning of milk processing enterprises is proposed and tested. The aggregate integrated indicator of the efficiency of milk processing enterprises is calculated based on the structuring of a set of priority indicators of economic efficiency, liquidity and solvency, financial stability and business activity. The main areas of improving the efficiency of milk processing enterprises are proposed. Methodological and practical aspects of a comprehensive study of the efficiency of the economic mechanism of functioning of milk processing enterprises of Ukraine and substantiation of areas for its improvement were further developed. The identified approaches and results of the study can be used by state and sectoral authorities in the organisation of monitoring and development of priority measures to improve the efficiency of domestic dairy enterprises

► **Keywords:** milk, dairy products, costs, efficiency, profitability, financial stability, profit

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*Corresponding author

► Introduction

Ukraine as a state is increasingly entering the market environment is considered one of the most important factors influencing the provision of the population with vital food and food independence of the country. The nature of the economic mechanism is based on incentives and interests, the totality of which constitutes the driving force of development, and the essence of this mechanism is manifested in the functions arising from its objectives. Among them, a prominent place is devoted to the harmonisation and realisation of social and personal interests, and the establishment of conditions for the effective implementation of the economic growth potential [1].

The economic mechanism is a system, the structure of which includes organisational and economic subsystems, in which organisational and economic mechanisms with levers that ensure the vital activity of business entities are established. The levers of the organisational mechanism include market self-regulation, information space, state regulation, institutional, innovative, investment and management environment. The levers of the economic mechanism are costs/resources, production of goods/services and income of various types. There is growing interest in considering the economic mechanism through the prism of ensuring optimal interaction of market participants.

► Analysis of recent studies and publications

Considerable attention to the theoretical aspects of the economic mechanism in the late twentieth and early twenty-first centuries was devoted by L. Abalkin [2]; I. Lukinov, O. Onishchenko, B. Paskhaver, A. Chukhno [3] etc, to applied problems related to self-supporting relations – P. Sabluk, M. Malik, V. Oliynyk; financial – M. Demianenko [4]; P. Stetsyuk, V. Aleksiychuk, S. Navrotsky. The organisational and economic mechanism of agro-industrial production development is substantiated by Yu. Luzan [5]. The levers and tools of the organisational and economic mechanism are defined by V. Rossokha [6]. The economic mechanism that defines a set of choices of economic entities, each of which is defined by a particular result, was investigated by L. Hurwicz [1].

The components of the economic mechanism of the efficient functioning of the dairy industry are established by N. Shyian [7].

Particular components of the economic mechanism for improving the efficiency of dairy production were devoted to their scientific works N. Babiak, A. Paskalova [8]; V. Dzhezdzhula, I. Epifanova [9]; I. Zhalinska [10]; T. Keranchuk [11]; O. Kozak [12]; O. Mykhailenko [13]; O. Ralko [14]; V. Rossokha, O. Petrychenko [15]; S. Tyvonchuk [16]; O. Usykova [17]; I. Fedulova [18]; O. Shpychak [19]. Therewith, consideration of the economic mechanism of interaction between participants in the dairy industry and its efficiency based on the performance of dairy processing enterprises remains outside the scope of the study.

The purpose of the study – a comprehensive analysis of the efficiency of the economic mechanism of relations between the participants of the dairy market, and indicators of the functioning of dairy processing enterprises with the justification of the areas of its improvement.

Research methodology. In the course of the study, several methods were used: abstract-logical – to develop conclusions; comparative analysis – to compare the indicators of raw milk supply, the efficiency of dairy processing enterprises and identify trends in their change; tabular – for visual display of the results of the study; coordinate matrix – in determining the aggregate integral indicator of the efficiency of the economic mechanism of dairy processing enterprises; calculation and constructive – to calculate indicators of economic efficiency, liquidity and solvency, financial stability and business activity of enterprises; monographic – in detailing the current trends in the functioning of dairy processing enterprises; factor analysis – to determine the factors influencing the net financial result of enterprises.

► Results and Discussion

The market of milk and dairy products is a distinct system of commodity-money relations between economically separate producers of food raw materials, processing enterprises and consumers of final products. It covers the entire social reproductive process, including production, distribution, exchange, and consumption to provide the population with the

most important food products and to obtain the expected income of all market operators [18].

The instability of the dairy market, a steady tendency to curtail milk production in households resulted in a decrease in the production of milk and dairy products. In 2020, milk production decreased by 17.6% compared to 2010, and the volume of its supply to dairy processing enterprises decreased by 26.7%. However, the ratio of products produced by dairy processing enterprises to milk supplied by agricultural producers increased by 15 p.p. It is explained by the increase in the level of processing of raw materials and the increase in the physical volume of milk and cream imports by 3.5 times.

During the period 2012-2020, the total supply of milk and dairy products decreased by 10.8% (from 12.2 to 10.9 million tons), and the total demand decreased by 16.4% (from 11.7 to 9.8 million tons), due to a decrease in consumption by 14% and a significant (46.3%) reduction in exports of milk and dairy products.

The realities of the functioning of the dairy industry in rather long crisis conditions contributed to the development and establishment of integration ties between dairy producers. Consolidation between milk producers and processors is performed mostly on a contractual basis. When uniting producers into pools and establishing dairy cooperatives for the wholesale of milk, dairies provide them with milk coolers and assume the costs of arranging milk collection points. Such a mechanism of cooperation allows for the purposeful development and supply of significant volumes of dairy raw materials for processing [15].

The profitability of milk production depends on such main factors as the level of purchase prices, the scale of production, livestock productivity and

labour productivity, and the cost of production. Purchase prices for raw milk fluctuate both in dynamics and by regions of the country. During 2010-2020, the average purchase price of milk by processing enterprises tripled (from 2605 to 7899 UAH/t) with variations by regions of the country. Purchase prices for milk in enterprises exceeded the prices of households by 1.3 times.

The priority factor affecting the price of milk is its quality. On January 1, 2020, new quality standards for "homemade milk" came into force, the provisions of which are set out in DSTU 3662-97 "Whole Cow's Milk. Requirements for procurement". According to this document, there are three grades of milk in Ukraine: extra, higher and first. The updated DSTU applies to whole raw cow's milk during procurement. It cancels the second grade of milk (raw or "home milk") for acceptance at processing plants. During the period 2010-2020, the volume of milk purchases from agricultural enterprises by dairy plants increased from 1794 to 2348 thousand tons or 1.3 times. In addition, the quality of milk has a steady upward trend. The purchase of extra milk increased 10 times, and its share in the total volume increased from 4.4% in 2010 to 34.6% in 2020. In 2020, 47.6% more premium milk was purchased than in 2010, and its share increased by 2.9%. The volume of purchases of second-class milk decreased by 98%, from 779.5 thousand tons in 2010 to 15.8 thousand tons in 2020. According to European standards in 2020, dairies purchased 1759.5 thousand tons of milk, which is 68.8% of the total volume, compared to 35.7% (675.2 thousand tons) in 2010. The purchase of raw milk by processors from households decreased by 3.5 times (Table 1).

Table 1. Purchase of milk by dairy plants by grades of DSTU 3662-97 in dynamics

Indicator	2010	2012	2014	2015	2016	2017	2018	2019	2020	2020, %, by 2012
<i>Agricultural enterprises</i>										
Total, thousand tons	1793.6	2159.8	2297.9	2286.9	2375.7	2533.1	2560.1	2428.1	2347.7	130.9
Including										
extra	82.8	120.5	223.2	247.6	366.4	441.1	586.2	710.3	885.2	10.7 times
highest quality	592.4	710.5	820.7	849.9	923.0	987.1	1036.2	937.9	874.3	147.6
I quality	1120.1	1311.4	1250.5	1196.9	1056.0	1018.1	894.6	844.4	776.1	69.3
II quality	779.5	127.9	128.7	113.0	160.2	234.7	193.8	97.1	15.8	2.0
non-varietal	17.1	7.4	5.2	5.3	6.3	7.4	9.0	20.6	4.7	27.5
cooled up to 10 °C	1283.6	1475.9	1648.2	1651.5	1760.1	1947.8	2173.4	1884.1	1855.3	144.5

Table 1, Continued

Indicator	2010	2012	2014	2015	2016	2017	2018	2019	2020	2020, %, by 2012
<i>Households of the population</i>										
Total, thousand tons	2477.3	1953.8	1699.1	1311.5	1161.4	1199.8	1054.2	822.2	708.2	28.6
Including extra	-	-	-	34	66	0.38	-	-	-	-
highest quality	2.5	4.4	1.7	1.0	0.61	1.6	2.3	0.9	1.6	64.0
I quality	290.4	340.8	205.2	119.2	107.8	110.4	135.5	101.9	585.8	201.7
II quality	1576.2	1507.7	1451.6	1162.9	1028.2	1081.0	903.6	707.9	134.8	8.6
non-varietal	172.1	154.3	78.6	63.0	61.1	45.9	47.1	40.5	10.8	6.3
cooled up to 10 °C	774.9	718.3	805.4	629.2	489.4	544.0	559.0	354.4	418.5	54.0

Source: Developed based on [20]

According to the data, the quality of milk in households and agricultural enterprises differs significantly. Extra milk was purchased by processors only during 2015-2017. The volume of premium milk supplied for processing by households decreased by 36.0%, first-grade milk doubled, and its share increased from 11.4% in 2010 to 79.9% in 2020. The purchase of non-grade milk by dairies decreased 9 times, with its share decreasing to 1.5%. The overall decrease in the purchase of milk cooled to 10°C is almost doubled by an increase in its share in the dynamics of the period under study by 27.9 p.p.

The decrease in the production of most types of dairy products over the past seven years could not but affect the dynamics of their sales. Thus, during the analysed period, natural sales of liquid milk decreased by 21.2%, milk and cream with a fat content of more than 6% – by 40.4%, milk powder – by 32.8%, and butter – by 26.4%. The growth of sales was registered only in the range of flavoured dairy products (1.2 times). Therewith, the sale of dairy products in monetary terms has a positive trend. The cost of liquid milk sold from 2014 to 2020 has doubled, milk and cream with a fat content of more than 6% – by 67%, processed cheese – by 2.5 times, fresh cheese – by 2 times, fermented milk products – by 1.9 times, flavoured fermented milk products – by 3.1 times, ice cream – by 3.4 times.

In the course of the study, the tendency of relative equivalence of exchange between industrial and agricultural products, milk processing and raw milk production was established. Thus, during 2014-2020, the selling price of milk increased from 3117 to 8036 UAH/t, which is 2.6 times. By categories of producers, agricultural enterprises increased the selling

price by 2.5 times (from 3588 to 8840 UAH/t), and households – by 2.8 times, from 2425 to 7006 UAH/t. Regarding the price dynamics of the range of dairy products, equivalent growth rates are observed. The price of liquid and fat milk has increased by 2.5 and 2.8 times respectively. Butter has become 2.6 times more expensive, fresh cheese – 2.4 times, rennet cheese – 2 times, and dairy products – 2.5 times.

System analysis convincingly demonstrates that for the development of milk production and processing it is essential to ensure the efficiency of the “production-processing-sales” chain. For this purpose, the orientation of production to the end consumer on the principles of marketing should define precise purposes and methods of their achievement by each participant of the integrated production.

Monitoring of the efficiency of dairy processing enterprises was performed on the example of the Group of Companies “Milk Alliance”, whose activities are related to milk processing and production of hard cheeses, milk powder, whole milk products, butter and other related products (Fig. 1).

The Group's production facilities are located in different regions of Ukraine, including Kyiv, Chernihiv, Cherkasy, Poltava, Kirovograd, Vinnytsia and Mykolaiv regions. The immediate parent company of JSC “Milk Alliance” is MilCo Holding N.V. (Netherlands), which owns 100% of shares of JSC “Milk Alliance”. The Group of companies “Milk Alliance” unites powerful enterprises for the production and sale of the main types of dairy products, the leader of the dairy industry of Ukraine.

The Group of companies includes enterprises for the production of cheese, whole milk and dairy products, enterprises for the collection and processing

of milk and dairy products, and companies engaged in the sale of products in Ukraine and abroad. The products are manufactured under the brands “Pyriatyn”, “Slavia”, “Yagotynske”, “Yagotynske for Chil-

dren”, “Zlatokrai” and “MilkAlliance”. The company’s product portfolio is balanced to meet the demands of a wide range of consumers in various product categories of the dairy and cheese market.

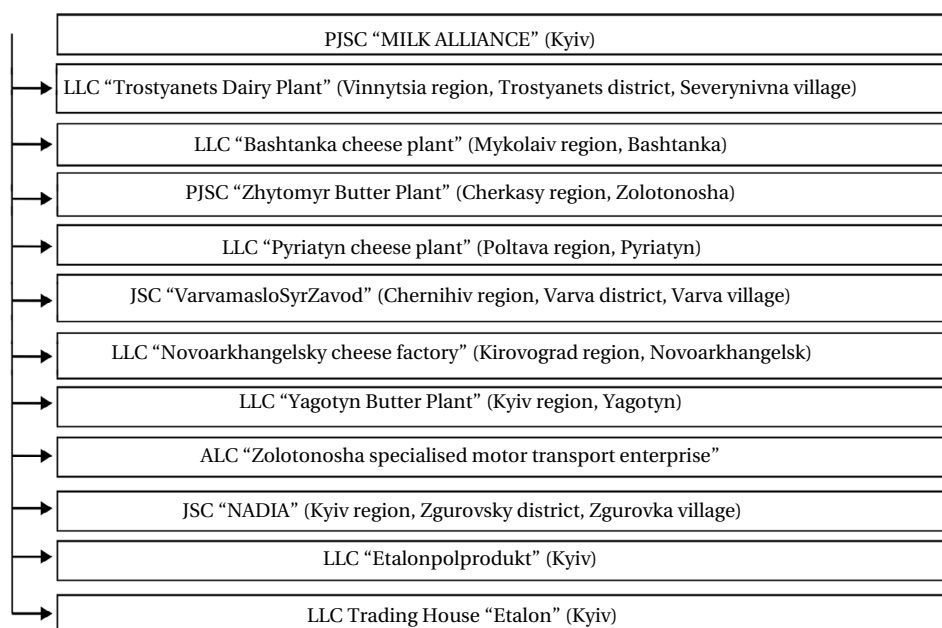


Figure 1. Enterprises belonging to the Group of companies “Milk Alliance”, 2020

Source: Developed based on [17]

The company is in continuous search of new progressive solutions and new products. Innovative technologies are being introduced, and the principles of business management are constantly being improved, in particular, all the largest plants are certified according to international standards of management and quality control ISO 9000 and HACCP, which allows the enterprises of the Group of companies “Milk Alliance” to meet modern market requirements [21].

The economic mechanism of functioning of JSC “Milk Alliance” and its enterprises is structured: on the management of production and assortment of dairy products manufactured by the company’s enterprises; on the system of quality assurance and control of products; on the organisation of supply of raw materials and other material resources; on the marketing management system; on the organisation of national sales and export; on the system of information support, development and implementation of information technologies, software; on the organisation of research and development. All dairies of JSC “Milk Alliance” have successfully passed the certification audit for compliance with the integrated food safety and quality management system with

the requirements of two international standards ISO 9001:2015 and ISO 22000:2018 (HACCP).

These international standards define the requirements for a food safety and quality management system and are designed specifically for organisations that wish to prove their ability to systematically produce quality and safe products that meet consumer requirements.

In 2020, all enterprises confirmed the international Halal certificate issued by the “Halal Alraid” Research and Certification Center, which allows Muslims around the world to eat all assortment items of the “SLAVIA”, “Yagotynske”, “Pyriatyn” trademarks. The mentioned certificate provided an opportunity to export food products to the countries of the Arab-Muslim world. The economic mechanism of the functioning of dairy processing enterprises included in the Group “Milk Alliance” has unified tactics designed to improve the sanitary condition of enterprises, the introduction of deep processing of raw materials, and energy saving.

The comprehensive analysis of the efficiency of the economic mechanism of functioning of dairy processing enterprises in the process of research is

structured by the following elements: assessment of the production and assortment policy of enterprises; assessment of the economic efficiency of enterprises and using their resource potential; factor analysis of changes in the profitability of enterprises; monitoring and diagnostics of liquidity and solvency of enterprises; analysis and determination of the level of financial stability of enterprises; monitoring the level of business activity of enterprises; determination and retrospective analysis of the integrated indicator of the efficiency of the economic mechanism of milk processing enterprises.

The application of the tools of such a structured system of indicators provided an opportunity to analyse in detail in retrospect the efficiency of the economic mechanism of the dairy processing enterprises of the Group of Companies "Milk Alliance".

Notably, each dairy processing enterprise that is a part of Group "Milk Alliance" has its specific features. Thus, LLC "Yagotynsky Butter Plant" and the branch "Yagotynske for Children" are located near Kyiv and the main consumers of their products are urban residents. Enterprises have the opportunity to sell low-transportable and unsuitable for long-term storage of drinking milk and fermented milk products without deep processing of raw materials.

The processing enterprises (LLC "Bashtanka Cheese Plant", LLC "Zolotonosha Butter Plant" and LLC "Pyriatyn Cheese Plant"), which are located far from large cities and consumers, mostly process milk into products with a long shelf life (hard cheeses, butter, condensed milk, skimmed milk powder, casein) and wide domestic and foreign markets.

Monitoring of the efficiency of the economic mechanism of milk processing enterprises was performed according to their production and financial statements. The analysis of the production and sales policy of dairy processing enterprises identified some trends. During the analysed period, LLC "Bashtanka cheese plant" almost halved the production and sales of hard cheeses (from 3697 tons in 2017 to 1978 tons in 2020), sales of processed cheeses decreased by 38.4%, and butter – by 27.7%. There is a structural transformation of the assortment policy of the enterprise in the field of increasing the production and sale of different types of fermented milk products – yogurts – 1.9 times, milk – 1.7, fermented baked milk – 1.5, sour cream and kefir – 1.4 times.

The transformation processes that have occurred in the field of the export orientation of the dairy industry of Ukraine have influenced the assortment policy of LLC "Zolotonosha Butter Plant". During the analysed period, the production and sales of hard cheeses decreased by 10 times (from 1501 tons in 2016 to 155 tons in 2020). The company increased the production of butter by 1.5 times, protein and fat products – by 1.3 times, and whey powder – by 1.2 times. Since 2018, the company has expanded its range of dairy products and started the production of milk powder and soft cheeses.

The second in the Group of companies "Milk Alliance" in terms of production and revenue from sales of LLC "Pyriatyn cheese plant". During the analysed period, the company remained unchanged in the production of its main product – hard cheese (3,500 tons of cheese were produced in 2020 compared to 3,200 tons in 2016) but expanded its range since 2018 with the production of milk-containing products and whey powder.

LLC "Yagotynsky Butter Plant" ranks first in terms of production and sales of dairy products in the Group of Companies "Milk Alliance". During 2016-2020, the company increased the production and sales of its product range – drinking milk – by 5.3%, cheese and curd products – by 10.0%, and fermented milk products – by 42.4%.

Revenue of LLC "Bashtansky cheese plant" from the sale of dairy products increased by 26.2% (from 718.9 million UAH in 2014 to 907 million UAH in 2020), gross profit increased by 24%, while the net financial result decreased by 17.3%, or by 5 million UAH (Table 2).

During the analysed period, the company received a net loss in the crisis years of 2015 and 2019. Factor analysis of the decrease in the net financial result identified that the decrease in the profitability of the enterprise was influenced by: an increase in the cost of production of dairy products (a decrease in profit amounted to UAH 163.4 million), an increase in financial expenses related to borrowings and interest payments, reduced net profit by UAH 38 million, an increase in operating expenses reduced profit by UAH 6.1 million.

The operating leverage effect is estimated at 0.66, i.e. with a 1% increase in sales, net profit increased by 0.66%. Production risk is assessed as low.

The increase in revenue from sales of LLC “Zolotonosha Butter Plant” was 52.4% (from UAH 644.4 million in 2014 to UAH 999.2 million in 2020). However, the rate of cost growth led to a decrease in the gross profit of the enterprise by 19%. Due to a significant increase in other income, the company's net profit doubled and reached UAH 71.5 million in 2020. The company was unprofitable in 2015, 2017 and 2018. Based on the factor analysis of changes in net profit, it

was established that the priority impact on its growth was an increase in sales revenue (the impact was estimated at UAH 343.4 million), and an increase in other operating and other income of the enterprise, which increased net profit by UAH 55.5 and 51.0 million, respectively. The level of operating leverage of the enterprise was 1.32, which states a rather high sensitivity of net income to changes in sales revenue and the presence of significant production risk.

Table 2. A general assessment of the composition and dynamics of financial results of the enterprises of LLC “Milk Alliance” in 2014-2020, UAH mln

Indicator	2014	2015	2016	2017	2018	2019	2020	2020, %, before 2014
LLC «Bashtanka cheese factory»								
Net income from sales of products (goods, works, services)	718.9	581.5	664.7	846.9	1023.8	997.9	907.0	126.2
Cost of sales of products (goods, works, services)	615.7	488.4	524.4	681.7	841.11	886.8	779.0	126.5
Net financial result: income (loss)	28.8	(3,9)	43.9	46.0	24.1	(14,8)	23.8	82.7
LLC «Zolotonosha Butter Plant»								
Net income from sales of products (goods, works, services)	655.5	675.2	764.3	1087.4	1052.5	1095.0	999.2	152.4
Cost of sales (goods, works, services)	545.6	617.2	659.1	899.6	970.8	1033.5	891.4	163.4
Net financial result: income (loss)	35.4	(5,9)	44.4	73.6	(25,8)	(54,3)	71.5	202.0
LLC «Pyriatyn cheese plant»								
Net income from sales of products (goods, works, services)	773.2	759.1	1055.4	1521.0	1616.5	1356.0	1371.0	177.3
Cost of sales of products (goods, works, services)	650.1	891.8	659.8	1284.7	1456.7	1286.1	1242.0	191.1
Net financial result: income (loss)	47.3	4.5	60.0	96.4	(16,0)	(62,1)	37.6	79.5
LLC «Yagotinsky butter plant»								
Net income from sales of products (goods, works, services)	1171.7	1659.6	2024.7	2706.1	3201.7	3160.5	3166.3	270.2
Cost of sales (goods, works, services)	894.4	1271.2	1521.8	2052.9	2342.4	2566.8	2657.9	297.2
Net financial result: income (loss)	25.0	60.7	129.6	164.5	253.7	184.7	129.5	517.6

Source: Developed based on [21]

During the analysed period, the revenue from sales of LLC “Pyriatyn Cheese Plant” increased by 1.8 times (from UAH 773.2 million in 2014 to UAH 1371.0 million in 2020). Therewith, the cost price almost doubled, sales expenses increased by 77.8%, and other operating expenses – by 83.3%. The company twice ended the financial year with a loss result (in

2018 and 2019). In 2020, the company received a net income of UAH 37.6 million, which is 20.5% lower than in 2014. The following factors had the greatest impact on the decrease in the company's profitability: an increase in production costs (reduced net profit by UAH 591.1 million), an increase in sales costs (reduced income by UAH 20.6 million), an

increase in financial expenses associated with servicing long-term liabilities and short-term bank loans, reduced the net financial result by UAH 22.2 million.

Revenue from the sale of products of LLC “Yagotyn Butter Plant” increased by 2.7 times, while the cost price increased by 3 times. During 2014-2020, the functioning of the economic mechanism of LLC “Yagotyn Butter Plant” was described by stable profitability, which increased from UAH 25 million in 2014 to UAH 129.5 million in 2020. The most significant positive impact on the 5-fold increase in net profit was identified by the following factors: the growth of sales revenue increased profit by UAH 199.5 million, other income – by UAH 24.4 million, and the reduction of other expenses contributed to an increase in net income by UAH 19.4 million. The greatest adverse impact on the net financial result of the company had a threefold increase in the cost of production. The increase in sales expenses by 88% reduced net income by UAH 112.2 million, and the increase in financial expenses by 38.8% reduced net income by UAH 20.2 million. The effect of operating leverage is estimated at 1.92, which indicates a fairly high elasticity of net income to fluctuations in sales revenue and the presence of production risk.

The research has established a steady tendency to increase borrowed capital by the enterprises of the Group “Milk Alliance”. If in 2014 the share of equity capital of LLC

“Bashtanka cheese plant” accounted for 47% of the total amount, in 2020 the mentioned figure decreased almost three times – to 16.4%. During the analysed period, the company gradually increased using borrowed resources, the maximum share of which in 2019 exceeded 90%. During the analysed period, the capital of the LLC “Zolotonosha Butter Plant” increased by 2.5 times, using borrowed funds increased by 3.4 times, and equity capital increased by only 16%.

The growth of financial expenses of LLC “Pyriatyn cheese plant” almost 5 times due to the increase of borrowed capital by the enterprise. Therewith, equity capital decreased by half during 2014-2020, and its share in the total capital structure decreased from 60.8% to 24.4%. If the level of production risk of the enterprise is estimated as low (a change in sales revenue by 1% leads to a change in net income by 0.45%), then the increase in the level of financial leverage from 0.65 to 3.11 due to an increase

in long-term liabilities by 25%, and the amount of short-term loans to UAH 93.4 million, significantly increases the financial risk of the enterprise.

LLC “Yagotyn Butter Plant” for the analysed period increased its equity capital 4 times, and its share increased from 27.7 to 38.3%. The growth rate of borrowed capital is 1.6 times lower than the same indicator of increasing its resource potential. However, the growth of borrowed capital by 2.5 times resulted in an increase in financial expenses for servicing long-term liabilities and short-term bank loans by only 38%, which indicates the efficiency of the company's financial and financial risk management system.

The research determined the type of financial stability of enterprises:

- the financial condition of LLC “Bashtanka Cheese Plant” during 2014-2020 was identified as normal; during 2014-2017, the type of financial stability of LLC “Zolotonosha Butter Plant” was assessed as normal, but since 2018 it has been transformed into a crisis state; the financial stability of LLC “Pyriatyn Cheese Plant” in 2014-2017 was identified as absolute, but for the period 2018-2020 as a crisis;
- during 2015-2020, LLC “Yagotyn Butter Plant” ensured a normal level of financial stability.

The profitability of LLC “Bashtanka cheese plant” for the analysed period did not exceed 7.2%. In 2020, this indicator was 2.7%, which is 1.5% lower than in 2014. The decrease in efficiency is observed in all components of the enterprise, except for equity, the profitability of which increased from 17.8 to 27.9%.

The twofold increase in net income could not but affect the profitability of LLC “Zolotonosha Butter Plant”. The highest rates of growth returned on equity (from 30.9 to 53.8%) and return on fixed assets (from 32.7 to 49.8%). Profitability increased by 1.1 p.p. and remains at an insufficient level - only 6.9%. The efficiency of using working capital, borrowed capital and all property of the enterprise decreased.

All relative performance indicators of LLC “Pyriatyn cheese plant” (except for return on equity) decreased during the analysed period. The profitability of the company decreased from 6.4 to a minimum of 2.8%, the profitability of production – from 7.3 to 3%, and sales – from 6.1 to 2.7%. The increase in net income by 5.7 times, compared to the increase in revenue from sales of products by 2.7 times, had a

relatively positive impact on the performance indicators of LLC “Yagotyn Butter Plant”. The profitability of the enterprise, and other dairies of the Group of companies “Milk Alliance”, remains low (4.3%) but there is a tendency to double the growth of this indicator compared to 2014. Return on equity increased by 4.8% (from 17.1% in 2014 to 21.9% in 2020).

The aggregate integral indicator of the efficiency of the economic mechanism of milk processing enterprises is calculated using the method of matrix-coordinates based on the structuring of a set of priority indicators of economic efficiency, liquidity and solvency, financial stability and business activity of enterprises (Table 3).

Table 3. System of performance indicators of the economic mechanism of milk processing enterprises of the Group of Companies “Milk Alliance”, 2014-2020

Indicator	LLC «Bashtanka cheese factory»		LLC «Zolotonosha Butter Plant»		LLC «Pyriatyn cheese factory»		LLC «Yagotinsky butter plant»	
	2014	2020	2014	2020	2014	2020	2014	2020
Net income	28788	23813	35410	71519	47313	37602	25028	129547
Sales profitability	4.0	2.6	5.4	7.2	6.1	2.7	2.1	4.1
Profitability of activity	4.2	2.7	5.7	6.9	6.4	2.8	2.2	4.3
Profitability of own capital	17.8	29.7	30.9	53.8	18.8	30.8	17.1	21.9
Profitability loan capital	15.6	5.8	20.0	11.8	29.1	9.9	6.5	13.5
Coverage ratio	2.61	2.28	2.23	1.25	4.41	2.13	1.44	2.00
Ratio of rapid liquidity	2.17	0.83	2.01	0.62	3.89	1.37	1.01	1.79
Ratio of total liquidity	0.05	0.08	0.03	0.36	0.09	0.48	0.08	0.02
Excess of own and long-term sources of working capital development	83223	11834	-957381	-239125	187385	-59060	-84982	25889
Ratio of autonomy (independence)	0.47	0.16	0.39	0.18	0.61	0.24	0.28	0.38
Ratio of financial stability	0.67	0.43	0.61	0.29	0.78	0.42	0.48	0.51
Equity ratio of own working capital	0.32	-0.07	-5.3	-0.04	0.53	0.05	-0.08	0.07
Ratio of turnover of assets	2.7	2.4	3.6	1.7	2.2	3.4	3.3	3.1
Ratio of accounts receivable turnover	3.9	8.4	4.9	19.4	2.9	8.9	5.4	3.8
Ratio of accounts payable turnover	6.2	3.2	5.8	1.9	8.4	4.7	4.2	4.2
Ratio of turnover of material reserves	8.5	8.7	10.9	3.0	9.8	7.4	5.6	10.8
Ratio of turnover of equity capital	4.5	11.3	5.7	7.5	3.1	11.2	8.0	5.3
Ratio of turnover loan capital	3.9	2.2	3.7	1.7	4.8	3.6	3.1	3.3
Aggregate indicator of efficiency of the economic mechanism	11.52	6.92	10.81	5.78	12.29	6.62	5.18	6.99

Source: Developed and calculated based on [21]

The highest level of the efficiency indicator of the economic mechanism in 2020 was in LLC “Yagotyn Butter Plant” – 6.92, the lowest (5.78) – in LLC “Zolotonosha Butter Plant”. Except for LLC “Yagotyn Butter Plant”, where the aggregate indicator tends to grow, all

other enterprises of the Group of companies “Milk Alliance” significantly worsened the main indicators of their efficiency. Thus, “Zolotonosha Butter Plant” and “Pyriatyn Cheese Plant” reduced their efficiency by almost half, and “Bashtanka Cheese Plant” – by 40%.

► Conclusions

Interaction of dairy market participants is based on commodity-money relations, including price characteristics of raw milk – dynamic fluctuations, quality standards, volumes and regional deviations.

The analysis of the production and financial statements of the Group of Companies “MilkAlliance” demonstrated that the decrease in the efficiency of the economic mechanism of dairy processing enterprises is explained by the following factors: increase of borrowed capital by enterprises (long-term and short-term bank loans) to finance current activities, respectively, and increase of financial expenses for servicing their obligations, which significantly reduces the net financial result; excess of the growth rate of net sales income compared to the growth rate of milk cost; decrease in coverage and quick liquidity indicators with simultaneous growth of absolute liquidity of the enterprise, which is associated with the development of unproductive assets; decrease in the level of financial stability of

enterprises, indicators of autonomy and financial stability, coefficients of equity mobility and provision with own working capital, which increases the dependence of enterprises on borrowed funds; decrease in the level of provision of enterprises with their own working capital and asset turnover, increase in the period of their turnover and increase in the operating cycle of enterprises; decrease in the level of business activity of enterprises by indicators of turnover of receivables and payables, turnover of assets and inventories, equity and borrowed capital.

Considering the above, the solution to the problem of improving the efficiency of the economic mechanism of functioning of dairy processing enterprises should emphasise the following areas that require further scientific study: optimisation of the structure of assets and liabilities of business entities and forecasting of receivables; introduction of a system for assessing the solvency and financial discipline of potential buyers; operational control over the efficiency of production costs to increase profitability.

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Ефективність господарського механізму взаємодії учасників молочного ринку та функціонування молокопереробних підприємств

Анатолій Олександрович Заїнчковський, Михайло Вікторович Кривун

Національний університет харчових технологій
01033, вул. Володимирська, 68, м. Київ, Україна

► **Анотація.** В умовах сьогодення виробництво молочної продукції займає провідне місце в АПК України. В Україні високий економічний, природно-кліматичний, трудовий потенціал розвитку молочної галузі. Мета статті – провести комплексний аналіз ефективності господарського механізму щодо відносин між учасниками молочного ринку, а також показників функціонування молокопереробних підприємств з обґрунтуванням напрямів її підвищення. У процесі дослідження використано ряд методів: абстрактно-логічний – для формулювання висновків; порівняльного аналізу – для зіставлення показників ефективності функціонування молокопереробних підприємств та виявлення тенденцій їх зміни; табличний – для наочного зображення отриманих результатів дослідження; матриці координат – при визначенні сукупного інтегрального показника ефективності молокопереробних підприємств; розрахунково-конструктивний – для розрахунку показників економічної ефективності, ліквідності та платоспроможності, фінансової стійкості й ділової активності підприємств; монографічний – при деталізації сучасних тенденцій функціонування молокопереробних підприємств; факторного аналізу – для визначення факторів впливу на чистий фінансовий результат підприємств. Розглянуто сучасні трансформації, що відбуваються на ринку молока та молочних продуктів України, встановлено масштаби зниження показників попиту і пропозиції. Проаналізовано сучасний стан сировинної бази молокопереробних підприємств України (динаміка закупівельних цін на молоко, моніторинг якості, ретроспектива закупівлі молока молокозаводами). Проведено моніторинг ефективності функціонування молокопереробних підприємств групи компаній «Молочний альянс». Запропоновано й апробовано елементну структуру аналізу ефективності функціонування молокопереробних підприємств. Розраховано сукупний інтегральний показник ефективності молокопереробних підприємств на основі структуризації сукупності пріоритетних показників економічної ефективності, ліквідності й платоспроможності, фінансової стійкості та ділової активності. Запропоновано основні напрями підвищення ефективності функціонування молокопереробних підприємств. Набули подальшого розвитку методико-практичні аспекти щодо комплексного дослідження ефективності господарського механізму функціонування молокопереробних підприємств України та обґрунтування напрямів її підвищення. Визначені підходи і результати дослідження можуть бути використані органами державного й галузевого управління при організації моніторингу та розробки пріоритетних заходів щодо підвищення ефективності підприємств вітчизняної молочної галузі

► **Ключові слова:** молоко, молокопродукція, витрати, ефективність, рентабельність, фінансова стійкість, прибуток



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Innovative Strategies to Minimise Rural Population's Risks of Vulnerable Employment Caused by the Coronavirus Pandemic and Institutional Constraints

Oleksii Mohylnyi*, Nataliia Patyka

National Scientific Centre "Institute of Agrarian Economics"
03127, 10 Heroiv Oborony Str., Kyiv, Ukraine

► **Abstract.** The research presents the results of the final stage of the study, obtained during the implementation of the project "Assessment of the impact of quarantine measures related to COVID-19 on the agricultural sector and food security of the state and development of an algorithm for minimising the adverse consequences" № 2020.01/0313 of the competition "Science for Human and Society Security" at the expense of grant support from the National Research Foundation of Ukraine. The research is a continuation of the publication in the journal "Ekonomika APK". 2021. № 4. C. 51-67. The impact of quarantine restrictions related to COVID-19 on the labour market and employment in rural areas. The purpose of the research – explore the strategic areas of minimising the risks of the rural population in the field of social and labour relations related to the COVID-19 pandemic. The monographic approach is used for a comprehensive and in-depth study of ensuring the sustainability of the labour sphere and social protection of the population in extreme conditions and identifying the cause-and-effect relationships of their development. The application of systematic and comprehensive analysis provided an opportunity to explore strategic areas for increasing the economic capacity of amalgamated territorial communities, activating the market orientation of family farms, and other micro and small forms of entrepreneurship and institutionalising protected employment in the agricultural and non-agricultural sectors. Regulatory and positive approaches contributed to the identification of prospects for the quantitative transformation of private peasant farms into family-type commodity enterprises by 2030. Due to the grouping, strategic priorities for ensuring productive employment of the rural population were identified. Using abstract and logical tools allowed the development of intermediate conclusions and proposals to minimise the socio-economic risks of agricultural workers in the context of the spread of the pandemic caused by the coronavirus SARS-CoV-2. Scientific and other publications on the issues of ensuring the sustainability of social and labour relations and incomes of peasants in the context of the spread of restrictions on economic activity, proposals for a radical change in the solidarity system of social protection, reducing inequality in access to basic requirements of socially vulnerable categories of the population are highlighted. The genesis and development of the theories of "helicopter money" and unconditional basic income as fundamentally new post-industrial models of stimulating the economy and social protection of the poor, the conditions of their application and possible macroeconomic consequences are considered. The priority areas of preventing risks to the productive and protected employment of agricultural workers were highlighted. These are, in particular, institutional capacity and resource sufficiency of rural amalgamated territorial communities; systemic and long-term support of market activity of micro and small business entities; institutionalisation of employment of members of family farms and other forms of small-scale entrepreneurship. Anti-covid strategic areas of small business development and extension of the system of compulsory state social insurance to self-employed workers in private farms were further developed. Proposals for improving relations in the labour sphere of the agricultural sector and social protection of the rural population can be considered during the development of strategic areas of support for micro and small businesses and self-employed persons in extreme conditions of rural society

► **Keywords:** state programs of small business support, priority anti-covid measures, rural united territorial communities, family farms, social protection of rural population, institutionalisation of employment

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*Corresponding author

► Introduction

The International Labour Organisation (ILO) (ILO Monitor: COVID-19..., 2020), among other things, recommended that national governments adhere to strategic priorities to support the under-protected and most affected by the COVID-19 pandemic social groups, informally employed, the elderly, youth and categories of the population with special needs. An efficient socio-economic policy should counteract growing inequality, solve the problem of resources to overcome the disease, and resist systemic adverse consequences in the future.

The state authorities of Ukraine have implemented appropriate measures to prevent the spread of acute respiratory disease caused by the coronavirus SARS-CoV-2, social support of insured persons, and business entities for the period of restrictive anti-epidemic measures. Amendments and additions have been adopted to the Code of Laws on Labour, Employment, State Social Assistance to Families with Children, Development, and State Support of Micro, Small, and Medium Enterprises, etc. Government resolutions and administrative documents of central and local executive authorities and local self-government bodies have developed mechanisms for the implementation of legislative initiatives. In particular, the State Employment Service has been granted the right to confirm the status of the unemployed without visiting the employment centre; to increase from 10 to 30 days the term for submission of certificates to employment centres, based on which the status of the unemployed was granted online; to introduce remote preparation of employment plan and to obtain permission for vocational training for persons discharged from military service after participation in the ATO; employers receive compensation of the unified social tax for the employment of unemployed able-bodied persons receiving state social assistance, low-income families, etc.

Problem statement. The International Labour Organisation (ILO) (ILO Monitor: COVID-19..., 2020), among other things, recommended that national governments adhere to strategic priorities to support the under-protected and most affected by the COVID-19 pandemic social groups, informally employed, the elderly, youth and categories of the population with special needs. An efficient socio-economic policy should counteract growing inequality, solve the problem of resources to

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The research of scientific teams and individual scientists on the social and economic consequences of the introduction of restrictive quarantine measures in the context of the COVID-19 pandemic was conducted in the "firefighting" mode. Nowadays, studies have reached a more distant horizon of systematic comprehension of both domestic and international practices of developing "coronavirus immunity" by economies, and most publications are of a strategic nature. They define the functions of the national regulatory policy regarding the institutional capacity and resource sufficiency of the social and labour sphere to the risks caused by extreme events that affect all life-supporting components of society, particularly, the preservation of full employment and income of the population. In the same field, scientific discussions have recently intensified around the

somewhat forgotten extraordinary concepts of radical restructuring of economic, social, and political institutions of society.

Thus, V.M. Heiets, O.M. Borodina, I.V. Prokopa (Heiets, Borodina, & Prokopa, 2020) highlighted the nature and components of inclusive rural development as the foundation of the model of the new Ukrainian village, the necessity of adherence to its principles to ensure the interconnected development of rural society, agricultural production and settlement network, overcoming inequality between urban and rural areas and between different social groups of rural residents for access to basic services. The purpose, tasks, driving forces, areas, and mechanisms of the transition of the agrarian sector of Ukraine to development based on inclusiveness are defined.

Therewith, N.A. Hretska (Hretska, 2021) notes the positive impact of the COVID-19 pandemic on the digital agriculture market by using advanced technologies integrated into one system, which allows producers and other interested counterparties of the agricultural market to improve the quality of agricultural raw materials and food products in lengthening the value chain. It is noted that innovation and investment activities reduce the adverse impact of the industry on the environment, adapt production to warming and climate change, partially solve global hunger problems, etc.

Along with this, I.V. Dulska (Dulska, 2021) explores the technological, institutional, and financial prerequisites for expanding the digitalisation of all spheres of activity of ATCs and local self-government bodies in the context of decentralisation reform and the administrative-territorial structure of the state to increase their smart specialisation, the development of agricultural business, productive employment of workers and improving living conditions. The areas of expansion of the range, levers, and spheres of implementation of digitalisation in the administration of the process of development of territorial communities are proposed.

The main sources and practices of social capital development of capable territorial communities in the context of amalgamation were considered by T.A. Zaiats, G.O. Kraievskaya (Zaiats, & Kraievskaya, 2020) and searched for ways to ensure their self-sufficiency and self-organisation. There is a significant asymmetry in the ratio of different sources of collective

action in groups of people against the background of significant differences from foreign practices targeted at strengthening social capital. The conceptual foundations of the development of the model of open social capital with the involvement of all subjects of territorial development are determined.

The researches were relevant. T.O. Zinchuk, M.M. Patynska-Popeta (Zinchuk, & Patynska-Popeta, 2020), who identified the current problems of rural areas of Ukraine, highlighted the development of alternative forms of economy and organisation of rural development that provide diversification of employment and sources of income. The conditions, promising areas, and tools for the establishment and development of business in rural areas are determined, considering the European experience. The necessity of stimulating local initiatives to unlock the potential of agricultural production to more fully exploit the favourable conditions of the world agricultural market for Ukraine is substantiated. The system of measures to develop rural business is presented in the example of the activities of AHs of the Zhytomyr Oblast.

The attention of V.I. Kostrytsia and T.V. Burlai (Kostrytsia, & Burlai, 2019) was devoted to the structure, institutional environment, and conceptual principles of the functioning of vocational education and training in the EU member states. The key initiatives and approaches of modern policy to the modernisation of this system are considered. Emphasis is given to its role in providing employment and social prospects for young people who are not in employment, education, or training.

The structure of employment, which, in his opinion, threatens the long-term development of Ukraine, is analysed by O. Kramar (Kramar, 2021). In addition, the scientist notes the data of official statistics, which, using the ILO methodology, seems to hide the actual scale of unemployment behind the wording – “informally employed”, “self-employed”, “economically active population”, etc. According to the author, this problem is particularly urgent in rural areas and small towns, where actual unemployment reaches 50%, which is many times higher than the statistical reports that guide state regulatory bodies in making operational and strategic decisions.

Among others, V.V. Mortikov (Mortikov, 2021) identifies the positive and adverse aspects of the

economic activity of the elderly, which is one of the essential prerequisites for solving socio-economic problems in the future. The purposes and possible instruments of state influence on increasing the activity of “older age groups” in Ukraine are considered. The concepts of “elderly” and “older people” are used in the study as synonyms for this concept.

Based on the ILO recommendations, O.F. Novikova (Novikova, 2021) identified priority areas for ensuring the sustainability of the national labour market in the context of the COVID-19 pandemic, which was grouped according to specific criteria in four areas: stimulating the economy and employment; supporting the viability of enterprises, preserving jobs and incomes; strengthening the protection of workers in the workplace; reliance on social dialogue to make coordinated decisions.

Therewith, V. Panchenko, N. Reznikova (Panchenko, & Reznikova, 2021), as one of the innovative approaches to maintaining minimum household incomes in emergencies, highlight the genesis and development of the theory of “helicopter money”, the conditions of their application and the projected macroeconomic consequences. In particular, it is noted that since the recession of economies, mass unemployment, the reduced purchasing power of households, and bankruptcy of companies have long-term adverse consequences, the leading countries are already using unconventional instruments of expansionary monetary policy to increase public spending and/or reduce taxes to stimulate economic activity. It means an additional issue of money unsecured by tangible assets. Support for households and enterprises, according to scientists, can be provided by tax benefits, deferred payment of debts and taxes, programs of assistance to the partially unemployed, etc. An integral result should be the preservation of income for workers and all people affected specifically by the SARS-CoV-2 coronavirus.

Then O. Pyshchulina (Pyshchulina, 2021), close to the theory of “helicopter money”, considers the concept of unconditional basic income (UBI) (guaranteed minimum income, unconditional Grundeinkommen) as a fundamentally new post-industrial model of stimulating the economy and social protection of the poor. Under this social support system, every adult citizen should receive a fixed tax-free amount of money every month, regardless

of employment. The main purpose of the UBI is to activate unemployed people to find additional sources of livelihood. The scientist highlights the evolution of the scientific opinion of representatives of different scientific schools on the possible “pros” and “cons” of such an innovation. Proponents emphasise overcoming the crisis of the solidarity system of social insurance; overcoming poverty, including of working people; solving the problem of technological and structural unemployment; helping to overcome economic inequality and increase the purchasing power of citizens; eliminating all institutions of the social sphere and reducing the cost of maintaining the bureaucracy that administers social programs. Other benefits depend on how the UBI will relate to the pension insurance system, unemployment insurance, health care system, etc.

Critics of this concept have their own, no less weighty, arguments. In particular, by receiving a guaranteed UBI, a person will stop working, and will lose material incentives to improve their professional level and cultural development; the motivating function of remuneration will partially disappear; society will not support socially vulnerable categories of the population; the project requires enormous resources in the context of a simultaneous significant reduction in tax revenues, which will reduce public spending on internal security and defence, health care, education, science, investments in capital-intensive infrastructure projects, preservation of the environment, etc.; the number of migrants who will apply for the UBI will increase, which in turn will result in a migration crisis and generate protest moods in the society. Finally, the main issue remains unresolved - the sources of financing, although it is predicted that a significant increase in taxes cannot be avoided. Currently, given the threats of a pandemic and similar challenges, humanity is facing discussions on these issues at various international and domestic platforms, and mechanisms for implementing UBI are being experimented with in small communities in both rich and poor countries.

The developments of I.R. Tymechko (Tymechko, 2020) describe the institutional features of ownership, use and disposal of property of territorial communities. Institutional risks of territorial community property management are identified,

indicating the likelihood of rent-oriented behaviour in the communal property management system. Probably high level of risks in decision-making on communal property management is substantiated. The results of the institutionalised property system in the context of efficient management of the territorial community property are presented.

As considered by O.V. Khodakivska et al. (Khodakivska, et al., 2021), among the strategic directions of integrated socio-economic development of ATCs should be a timely response to force majeure circumstances such as the COVID-19 pandemic. The practice has demonstrated the necessity to significantly increase their role in protecting the life and health of the rural population. The priority of local self-government bodies should be the development of an appropriate resource base for the performance of their powers through the development of agricultural production and other diversified activities, and the establishment of a favourable environment for decent living conditions, comprehensive development of the individual, work and recreation. It is proposed to develop analytical and statistical tools for measuring the human development index of rural communities, choosing as a foundation the Methodology for measuring regional human development, approved by the Presidium of the National Academy of Sciences of Ukraine and the Board of the State Statistics Service of Ukraine of 13.06.2012 № 123.

The purpose of the research – explore the strategic areas of minimising the risks of the rural population in the field of social and labour relations related to the COVID-19 pandemic.

► Research Methodology

The scientific and methodological foundation of the study was general scientific and economic methods, publications of Ukrainian and foreign scientists on conceptual strategies for preventing social and labour risks associated with the coronavirus pandemic, Decrees of the President of Ukraine, acts of the Verkhovna Rada of Ukraine, government decisions, data from the State Statistics Service of Ukraine and the State Employment Service, electronic resources and other sources. The monographic approach is used for a comprehensive and in-depth study of the process of ensuring the sustainability of the labour sphere and social protection of the population in

extreme conditions and identifying the cause-and-effect relationships of their development. The application of systematic and comprehensive analysis provided an opportunity to explore strategic areas for increasing the economic capacity of amalgamated territorial communities, activating the market orientation of family farms, and other micro and small forms of entrepreneurship and institutionalising protected employment in the agricultural and non-agricultural sectors. Regulatory and positive approaches contributed to the identification of prospects for the quantitative transformation of private peasant farms into family-type commodity enterprises by 2030. Due to the grouping, strategic priorities for ensuring productive employment of the rural population were identified. Using abstract and logical tools allowed the development of intermediate conclusions and proposals to minimise the socio-economic risks of agricultural workers in the context of the spread of the pandemic caused by the coronavirus SARS-CoV-2.

► Results and Discussion

In the section “Strategic areas and anti-crisis measures of national policy to minimise risks and hazards in the field of labour and employment in the context of the COVID-19 pandemic” of the final report of the Institute of Industrial Economics of the National Academy of Sciences of Ukraine (Final report on the..., 2020), the necessity of preserving the country’s labour potential as a factor of national wealth and economic growth is emphasised. To achieve this priority, the following is proposed: improving the regulatory framework in the context of the coronavirus pandemic; observance of social and labour rights of citizens; preventing and reducing illegal and undeclared labour; establishing conditions for overcoming desocialisation in the labour sphere and preventing poverty among working people; increasing the interest of employers in establishing safe working conditions and compliance with quarantine requirements; providing free consulting assistance to representatives of micro and small businesses, the unemployed to start an e-business, develop self-employment and close a business; supporting public-private and social entrepreneurship aimed at overcoming the consequences of the pandemic; strengthening the

role of the institution of tripartism with a balance of interests of employees, employers and the state in crises; modernisation of state regulation of key parameters of the labour sphere with acceleration of digitalisation processes to preserve and spread flexible and atypical forms of employment, etc.

The National Institute for Strategic Studies (Real sector of Ukraine's..., 2021) identified the main areas of reform and development of the agricultural sector of the economy in the context of systemic threats caused by the SARS-CoV-2 virus. Among them are: a) stimulation of investment processes; b) development of agricultural market infrastructure; c) development of small-scale agricultural production; d) expansion of agricultural cooperation; e) renewal of fixed assets of agricultural enterprises; f) development of rural areas.

Without denying the significant contribution of scientific groups and individual scientists to the investigation of the factors of the decline in the growth rate of the national economy, the disclosure of systemic imbalances in the labour market and imperfect employment structure, the deterioration of the standard and quality of life of the population in extreme conditions caused by the COVID-19 pandemic, the empirical analysis has demonstrated unpredictable phenomena and processes, namely, the state regulatory measures of social and economic nature and destructive consequences of force majeure affect different sectors of the economy, urban and rural population, officially employed workers and socially vulnerable and self-employed persons, and within particular social groups. Therefore, consider it appropriate to concentrate on strategic priorities designed to minimise the risks for the rural population in terms of productive employment and loss of income.

Increasing the resource capacity of AHs in the field of balanced rural development. According to the results of a questionnaire survey of local self-government representatives on the impact of COVID-19 on the activities of AHs, the following was identified: for various reasons, almost all communities have reduced budget revenues, employment, and incomes of the population have significantly decreased. Therewith, local authorities did not provide support to business entities, prices for basic food products increased, and in some vil-

lages, there were problems with their supply, etc (Khodakivska, et al., 2021).

In the context of this study, the State Strategy for Regional Development for 2021-2027, approved by the Resolution of the Cabinet of Ministers of Ukraine dated 05.08.2020 No. 695 (Resolution of the Cabinet..., 2020), is significant. According to government officials, this document should respond to the new challenges that Ukraine has faced in recent years and significantly affect the situation in the regions, particularly the level and quality of life of residents of cities and villages.

During the period of validity of such Strategy until 2020, the relevant legal framework was established, and new approaches to strategic planning and financing of regional development were introduced. The reform of local self-government and territorial organisation of power in Ukraine based on decentralisation, which has been implemented since 2015, has established new opportunities for the socio-economic development of territorial communities and local self-government bodies. Due to budget decentralisation, budget resources were redistributed in favour of local communities, etc. Therewith, significant changes were implemented in the development of the previous Strategy:

a) a conceptual transition was implemented from the dominance of the sectoral approach, which did not consider the specifics of different types of territories of the state that require state support and planning, to development on an integrated basis (a combination of sectoral and territorial approaches) with the rational use of local human, economic and natural potential; b) targeted allocation of the State Regional Development Fund for the implementation of programs that ensure the solution of particular tasks of the Strategy; c) conditions have been established for the acquisition of the institutional capacity of territorial communities to strategically plan development and efficiently manage resources for this purpose; d) the functional type "rural areas in unfavourable conditions" was identified, which requires particular attention from the state, the application of specific mechanisms and tools to stimulate their development. These are territorial communities where the density of the rural population is below 15 people per 1 km², and the distance to the nearest cities with a population of more than 50

thousand people is more than 30 minutes by car (approximately 40 km by paved roads), and the population has decreased by more than 30% in the period 2008-2018; e) identified the main trends and problems of socioeconomic development of the regions in the context of national challenges; f) a mechanism for the implementation of this Strategy has been developed, which includes executors represented by authorised state bodies, tools for its implementation, financial support, stages of implementation (2021-2023; 2024-2027), a system for monitoring indicators and a methodology for evaluating performance.

Among several operational objectives under the title: "Preservation of the environment and sustainable use of natural resources, strengthening the development opportunities of territories that require state support (macro and micro level)", the tasks in the field of "Rural development" are defined. Related to the purpose of this research are the following: stimulating the development of information and communication technologies – providing 100% coverage of fixed broadband Internet access and 95% of the population with mobile Internet for the possibility of forming new interregional connections; promoting various forms of cooperation, farming, proper accessibility of markets for micro, small and medium-sized agricultural producers, development of infrastructure for storage of agricultural products; introduction of new technologies and equipment for processing agricultural raw materials; stimulating the development of micro, small and medium-sized enterprises in rural areas using various tools, including remote training, expanding the network of entrepreneurship support centres "Diia. Business" and providing access to financing, partnership and investment resources; promoting the development of tourism infrastructure in rural areas; establishing conditions for stimulating the resettlement to rural areas of city residents who plan to start entrepreneurial activities; improving the conditions of transport accessibility of rural settlements to the administrative centres of territorial communities and the nearest cities with a population of 50 thousand people; increasing the level of digital literacy of the population of rural areas, in particular through the implementation of "Diia. Digital education". To implement the first stage of this Strategy, the Government Order No. 497 of

12.05.2021 approved the relevant action plan for 2021-2023 (Order of the Cabinet..., 2021). It defines responsible persons from among the heads of central executive authorities, representatives of local self-government bodies (by agreement), terms, and indicators of implementation. Ensuring an appropriate level of coordination of the implementation of the Strategy is entrusted to the Cabinet of Ministers of Ukraine through the Interagency Coordination Commission for Regional Development, the composition of which is approved by Resolution No. 787 of 02.09.2020 (Resolution of the Cabinet... 2020). It is a temporary advisory body headed by the Prime Minister of Ukraine. Organisational, informational, material, and technical support for its activities is provided by the Secretariat of the Cabinet of Ministers of Ukraine.

Six months later, the Decree of the President of Ukraine of 04.03.2021 No. 89 (Decree of the President..., 2021) approved the Regulations on the Congress of Local and Regional Authorities under the President of Ukraine with the functions of an advisory body and similar tasks of the Coordination Commission under the Government. But the organisational, advisory, informational and expert-analytical support of the Congress, its auxiliary working groups, and other developments are entrusted to the Office of the President of Ukraine and the National Institute for Strategic Studies. Other support is provided to the Office of the President of Ukraine and the State Administration of Affairs.

Since the Interagency Coordination Commission on Regional Development and the Congress of Local and Regional Authorities include the same heads (or their deputies) of ministries and departments who will perform similar tasks in these bodies, in the best-case scenario they will duplicate each other's functions, waste taxpayers' time at numerous meetings, increase administrative costs for organising their work, particularly for "other support of the Office of the President of Ukraine and the State Administration of Affairs". However, it is not an important thing. There is a high probability that they will conflict with each other over the distribution of funds from the regional development fund, and, ultimately, in a "manual mode", will non-transparently coordinate funds for regional policy for "obedient" parties and politicians in the struggle for the electorate.

Experience demonstrates that these bodies will be inactive in solving the main tasks of regional development and institutional establishment of AHs. Suffice it to recall the decrees of the President of Ukraine 20 years ago on this issue: “On the main principles of the development of the social sphere of the village” from 20.12.2000 № 1356/2000 (Decree of the President..., 2000); “Concept of state regional policy” from 25.05.2001 № 341/2001 (Decree of the President..., 2001); “On priority measures to support the development of the social sphere of the village” from 15.07.2002 № 640/2002 (Decree of the President..., 2002). On the presidential initiative, 2006 was pompously declared the Year of the Village. Temporary consultative and advisory bodies under the Presidents of Ukraine were established. However, the processes of systemic degradation in rural areas, particularly in the areas of employment, labour market, and welfare of the population, developed according to their destructive tendencies and in no way depended on the number of decrees, laws of the Verkhovna Rada of Ukraine, resolutions, and orders of the Government and countless commissions. It is as if the real and virtual worlds never intersect when the fundamental social laws remain unchanged.

Returning to the objectives of the Congress to study the socio-political processes at the regional and local levels and to facilitate the interaction of local executive authorities with local self-government bodies, in the author's opinion, the Office of the President of Ukraine has enough other legal levers of influence to implement these powers.

At the end of the administrative-territorial reform, 1439 ATCs included 26,705 villages, of which 8870 villages (33.2%) belonged to urban ATCs, 9397 (35.2%) – to settlement ATCs, 8438 (31.6%) – to rural ATCs (data as of January 1, 2021) (About formation of territorial..., 2021). According to expert estimates, one-third of rural AHs are economically unable to properly perform the powers delegated to them. However, not everything depends on the efforts of local governments to improve the level and quality of life in rural areas. For example, mostly in rural areas 40% of schools, 92% of libraries, and 37% of hospitals are not connected to the Internet. As a result, educational institutions are deprived of distance learning opportunities during quarantine, and hospitals are deprived of the opportunity to implement

telemedicine and fully consult patients online. If there is an appropriate network, operators set higher tariffs for services than in cities due to the small number of subscribers. As a result, it is expensive for many rural residents. They cannot study, work remotely, improve their professional level, diversify their leisure time, etc.

Still, hopefully, the adoption of strategic documents on state regional policy indicates that the top management is aware of internal threats and external risks on a national scale. Particularly, due to rural unemployment, poverty, insecurity of the population in a pandemic, the decline of the settlement network, the cessation of work in depressed rural areas of educational, medical, cultural, and sports institutions, the destruction of engineering and other infrastructure facilities (for reference: over the past 10 years, the number of secondary schools in rural areas has decreased by 3691 units, or by 38.6%, the number of hospitals has decreased by 16.8 times, paramedic and obstetric stations – by 34.5%, libraries – by 11.3%, club-type cultural institutions – by 8.3%) (About formation of territorial..., 2021). After all, they provide modern living standards and contribute to the development of human and social capital in rural areas.

Among the numerous legislative initiatives designed to improve the situation is the draft Law of Ukraine “On Amendments to the Law of Ukraine “On Land Lease” (to ensure a balanced social and economic development of rural areas)” (Reg. No. 6464). By this act, the authors consider it appropriate to regulate the obligations of agricultural firms that lease land in the territory of the relevant territorial community to conclude agreements with the local community aimed at the development of villages. In turn, this will ensure the implementation of landscaping works, repair works at communal and other forms of ownership, the establishment of new jobs, replenishment of budget revenues, etc.

Due to the COVID-19 pandemic, a new trend that has long been inherent in other countries of the world has become more noticeable. Over the past four years, more than 50 companies have re-registered from cities to rural AHs due to the availability of free land plots, lower fees for them, quality roads, and logistical convenience. Half of these companies operate in the wholesale trade, and up to 10 are involved in the trade of cars and motorcycles,

or their repair. In general, it is 4% of all large taxpayers of Ukraine. They pay local budgets property tax, parking fees, tourist tax and 60% of personal income tax on the salaries of employees of the companies. The employment of the local population is growing, the problem of employment is partially solved, the improvement of villages are improving, and the engineering infrastructure is developing (Omelianiuk, 2021). Admittedly, this refers mainly to villages that are close to large solvent markets for products and services, and does not yet extend to areas remote from centres of economic activity, or “rural areas in disadvantaged conditions”. However, this phenomenon deserves full support and encouragement from central and local authorities.

Appropriate financing of sustainable rural development programs has been and remains a major challenge. The implementation of the mentioned Strategy until 2027 is performed at the expense of:

a) the State Fund for Regional Development (at least 1% of general fund revenues); b) state budget funds within the framework of budget programs for the development of the relevant sphere in the regions; c) subventions and other transfers from the state budget to local budgets; d) local budget funds; e) technical assistance and sectoral support from the EU, other international donors, and international financial organisations; f) funds of investors and own funds of enterprises.

In addition, the final provisions of the Law of Ukraine “On Amendments to Certain Legislative Acts of Ukraine on the Conditions of Agricultural Land Turnover” dated 31.03.2020 No. 552 provide for the development and submission to the Verkhovna Rada of Ukraine of a draft law on amendments to the Budget Code on the establishment of the Rural Development Fund as part of the state and local budgets’ special funds. The funds should be used for the development of infrastructure, energy saving, education, and healthcare, and the implementation of state programs for the development of small and medium-sized agricultural producers. However, numerous amendments to the Budget Code in 2020-2021 do not yet provide for the establishment of such funds. They are not in the Budget Declaration for 2022-2024 either.

Support for micro and small businesses in rural areas. According to FAO, almost 97% of food is provided through the exploitation of land resources.

Despite various experimental start-ups (robotic vertical farms, printing protein on 3D printers, making milk from algae and food literally from thin air), land resources have been, are, and will remain in the long term the main source of basic human necessities. After all, the land provides access to food and drinking water, provides employment for farmers and self-sufficiency in food, and promotes climate change resilience and biodiversity conservation.

To achieve the Sustainable Development Goals, the UN has declared a decade of family farming until 2028. This global project is designed to provide a new vision of the potential and importance of SFGs in a rapidly changing world and to assess their role through the prism of eradicating hunger and developing the food future of the planet. Small farms offer a unique opportunity to guarantee food security, improve livelihoods, manage natural resources, protect the environment and achieve sustainable rural development (FAO and IFAD, 2019).

In addition, Ukraine has made radical changes to existing and proposed new programs to support and develop farms. Currently, they include: a) payments of 5 thousand UAH per hectare for their registration (but not more than 100 thousand); b) compensation of 80% and 25% of the cost of planting material and machinery of domestic production, respectively; c) subsidies of 5 thousand UAH for each cow annually and 30 thousand UAH for one head of cows of own reproduction. UAH for each cow annually and 30 thousand UAH for one head of a cow of own reproduction; d) compensation of up to 80% of the cost of purchasing breeding animals, sperm, and embryos; e) reimbursement of up to 90% of the cost of advisory services and 36 thousand for a newly established farm. The compensation of the unified social tax on members of working age, calculated on the official minimum wage, was introduced for 10 years (from a maximum of 90% in the first year to 10% at the end of the period). There are preferential loans under state guarantees for family farms, and small and medium-sized farms for the purchase of land. Young farmers under the age of 35 will be able to receive state support for the establishment and development of the agricultural business under all existing programs (How to get government..., 2021). Simplified forms of accounting, tax, statistical reporting, and other preferences are introduced.

The draft law “On the Fund for Partial Guarantee of Loans in Agriculture” (Reg. No. 3205-2), which was adopted in the first reading (Resolution of the Verkhovna Rada of Ukraine No. 1255-IX dated 18.02.2021), became extremely significant in the context of market circulation of land rights. It should be a non-banking financial institution with a special status. The Fund will partially, in the amount of up to 50% of the outstanding principal debt and for the term of the loan agreement, but not more than 10 years, guarantee the performance of obligations on loans to micro, small and medium-sized enterprises, individual entrepreneurs operating in the field of agriculture.

Significant reserves for balancing the fundamental factors of the labour market and overcoming monostructural employment in rural areas lie in the diversification of agricultural production, the development of processing industries, the provision of various household, information, and communication services, and other activities. It refers to the production in open and/or closed ground of fruits, berries, nuts, citrus and olive, grapes, vegetables, strawberries, flowers, ornamental plants, tobacco, and non-traditional crops (peanuts, quinoa, sesame, chia, chufa, saffron) and other crops that are in effective demand in the domestic and foreign markets. The livestock industry, which has been in rapid decline for the last three decades, and the cultivation of aquatic bioresources (aquaculture) have great potential in terms of permanent employment and stable incomes for villagers.

In Ukraine, organic and craft production is actively developing, but it is almost impossible for small producers to move from the local to the regional and national levels of product sales. Therefore, the experience of creating the first farmers' market – the FERMACHI network in Ukraine deserves to be explored and disseminated (The first network of..., 2021).

The institutionalisation of socially protected employment in the agricultural sector. To one degree or another, almost 40 legislative, regulatory, and other documents define the legal, economic, and social principles of the establishment, operation, and liquidation of private farms. Their number increases significantly when buying a land plot or leasing it, outsourcing accounting, statistical

and tax accounting, applying for a loan, insurance, state support, or advisory services. The practice of market circulation of rights to land plots, which was launched on July 1, 2021, has demonstrated that it is very difficult to conclude a purchase and sale transaction without a staff of qualified specialists. The necessity to explore numerous documents, which family members (households) were not interested in before, reduces the optimism about the real establishment of at least 100 thousand additional jobs through the institutionalisation of informal self-employment of peasants (Mohylnyi, 2020).

Due to the desperate situation of rural residents during the coronavirus pandemic, legislative initiatives have emerged that are unlikely to be considered soon. The Draft Law of Ukraine “On Amendments to Certain Legislative Acts of Ukraine Aimed at Supporting the Rural Population in Overcoming the Adverse Consequences Related to COVID-19” (Reg. No. 4223) proposes to provide uninsured rural residents with unemployment benefits, job search services, and free retraining for further employment, etc. Other innovations are the provision that the unemployment status should not be influenced by the ownership of a land plot or share by a member of the AH. And registration with the State Employment Service does not provide for the withdrawal of a person from the members of the household and the loss of ownership of the land plot, or share. In other words, regardless of the participation of self-employed peasants in the compulsory state social insurance, they should be covered by all insurance payments in case of restrictions on economic activity in force majeure situations for the AH, a separate region, or the country in general.

The mentioned draft law, even if approved by the Verkhovna Rada of Ukraine, does not comprehensively solve the problem of the national scale but only postpones it for some time. Radical changes are required in the system of social protection of peasants of working age. Further delay in resolving this issue will force us to resort to the measures of last resort – experiments with “helicopter money” or unconditional basic income in rural areas in unfavourable conditions.

The experience of some European countries, particularly Germany and Poland, demonstrates a possible solution to the institutional trap in which

self-employed peasants found themselves due to the imperfection of compulsory state social insurance programmes. The reform of employment in household farms requires the separation of their economic activities into a separate category and the extension of special social insurance rules to owners and members of family-type farms and their employees.

The social security of family members of farmers and hired farm workers in Germany pays considerable attention. It introduced solidary financing of social policy requirements by the entire society. The Federal Ministry of Food, Agriculture, and Consumer Protection allocates 2/3 of all expenditures for it. They provide for the implementation of the following measures: compensation for pension losses; health insurance services for pensioners; reduction of entrepreneurs' contributions to agricultural accident insurance; early retirement benefits for farmers and their families; additional compensation payments to former employees of agriculture and forestry who suffered material damage; and joint insurance for children.

In the context of a decrease in the number of persons contributing to the social insurance system and a slower reduction in the number of recipients of pensions and various benefits, the social insurance system for workers in the industry is being adapted to the changed situation. The launched reforms provide for the modernisation of the organisational structure of social security, the reliability of the provision of funds from the federal budget, and the fair distribution of contributions (Popova, 2015, p. 152).

In Poland, the functions of the insurer are performed by the Agricultural Social Security Fund. Its funds are developed from contributions of insured persons, targeted revenues from other sources, and subsidies from the state budget. The latter account for 90% of total revenues, which causes some dissatisfaction in a specific part of society. However, the competent state authorities do not consider this. Since the situation when insurance premiums are affordable for all interested parties is considered more significant for the sustainable social and economic development of the state. For example, the monthly contribution for a farm of up to 50 hectares to the pension of one insured person is 10% of the minimum pension, provided that this person is not

engaged in other non-agricultural activities (Borodina, & Prokopa, 2015, p. 95).

Probably, this experience is known to Ukrainian officials who define social policy, but its application is not in question, particularly with the introduction of a mandatory funded pension system. However, in case of constant adherence to the initiated measures of national protectionist policy in strategic areas (Fig. 1) and existing financial support programmes, a significant increase in the level of protected employment of peasants and balancing of the rural labour market by supply and demand can be achieved.

Therewith, it is necessary to consider the risks of implementing the strategic purposes of agrarian policy in this area. First, since rural residents are the social base for the establishment of SFGs, mass information and consultation activities are required to explain the benefits of the transition from the status of unprotected self-employment to civilized social and labour relations. Several demonstration family farms of different specialisations should be established in each AH using digital technologies. It is necessary to launch social advertising of the success stories of private farms, to establish a specific application for gadgets "Farmer's School", to open an online platform ("hotline") for prompt answers to painful questions and information and explanatory work among self-employed peasants of working age about the benefits of legalising small forms of agrarian entrepreneurship and employment. It is a difficult objective, as was already mentioned, according to the research of the Ministry of Digital Transformation of Ukraine, more than 16 thousand settlements (58% of the total number) are not covered by the optical networks of any provider. Almost 4 million people live in villages where there is no fixed high-speed Internet (Fedorov, 2021).

Secondly, the behaviour of owners in the conditions of opening the market circulation of rights to land plots is not yet understood. According to the StateGeoCadastr of Ukraine (Number of the day..., 2021), since July 1, 40510 transactions on alienation of agricultural land plots (purchase and sale, exchange, donation, lifetime maintenance) have been concluded. The area of alienated land is 100390 hectares, or an average of 2.48 hectares per transaction, of which 50.3% falls on just five regions – Kharkiv (13175 hectares), Kirovohrad (15466), Poltava (8710), Dnipropet-

rovsk (8634) and Kherson (7527 hectares). As a rule, previously postponed transactions are registered. Therefore, in the author's opinion, it is premature to assert radical structural changes in the system of land

tenure and land use, and how this will affect the institutionalisation of the private farming sector from 2024 when legal entities will be able to purchase up to 10 thousand hectares of agricultural land in "one hand".

Strategic areas of development of social and labour relations in the agricultural sector, considering the risks of the pandemic and institutional constraints of rural areas Priorities **Institutional capacity and resource sufficiency of rural AHs**

Actions

- ▶ improvement of legislation on opening opportunities for AHs to respond to the prevention of an adverse scenario for employment in force majeure circumstances;
- ▶ consideration in development strategies of "growth poles" with the participation of micro and small enterprises, through cluster forms of organisational and managerial interaction, cooperation and integration;
- ▶ development of human and social capital and small entrepreneurship as the foundation of the middle class in rural areas, introduction of atypical and flexible forms of employment and labour mobility;
- ▶ prevention of new manifestations of inequality of access to education, medicine, information technology, leisure, administrative services, etc;
- ▶ introducing the process of digitalisation of administrative management, establishing a continuous system of digital education of the population;
- ▶ encouraging young specialists in demanded professions to return (move) to rural areas for permanent residence and work;
- ▶ establishing appropriate conditions for enhancing public participation in decision-making by local governments and promoting the establishment of various self-governing organisations

Market activity of micro and small business entities

Actions

- ▶ overcoming monostructural employment of the rural population and low labour mobility of working-age people;
- ▶ establishment of basic (demonstration) family farms of various specialisations, including non-agricultural activities, in all AHs;
- ▶ providing grant support to young professionals to implement start-ups in agriculture for growing niche crops, processing raw materials, providing recreational services and other activities;
- ▶ facilitating the transfer (free of charge or for a symbolic fee) of mismanaged and unused municipal real estate and land plots on which they are located to micro and small businesses, service cooperatives and credit unions;
- ▶ establishing the work of student production teams, particularly in basic institutions of specialised secondary education, with a research and marketing component;
- ▶ intensification of targeted information and advisory work and consultations among the population on business organisation, supply and sales activities, digital literacy, advertising, etc;
- ▶ develop systems of preferential long-term lending for micro and small businesses for the purchase of land and lease of fixed assets, including on the terms of financial leasing

The institutionalisation of employment in SFGs and other micro and small forms of management

Actions

- ▶ development of a national programme for the establishment and development of private farms for 2022-2027, providing, in particular, for systemic deregulation of the establishment, operation and liquidation of private farms as legal entities and individual entrepreneurs;
- ▶ stimulating the transformation of individual farms into commodity farms, including by establishing zero taxation on profits from the main activity for 5 years from the date of registration;
- ▶ granting the priority right to purchase land for private farming, providing affordable loans under the guarantees of the Fund for Partial Guarantee of Loans in Agriculture;
- ▶ introduction of the experience of European countries in the sphere of compulsory state social insurance of members of private farms, their families and employees;
- ▶ encouraging young people to inherit the farm for its further functioning. Monitoring of this process to prevent and solve economic problems arising in young families;
- ▶ establishment of appropriate conditions for the members of the SFG to master ICT, and meet educational, professional, cultural and other social requirements;
- ▶ conducting ongoing awareness-raising activities on the benefits of protected employment, using modern means of communication. Increasing the prestige and social significance of living, working and recreation in rural areas

Figure 1. Strategic areas of prevention of risks in social and labour relations in the agricultural sector caused by the coronavirus pandemic and similar Force – majeure circumstances

Source: Summarised by the authors 33. (The economy will almost..., 2021)

Thirdly, there are many potential organisers of SFGs who lease their land plots for 10 years or more and have no right to terminate the lease agreement unilaterally. The final decision of the tenant, and what it will be, depends on many unknown factors (political decisions of the new government, the situation on the world agro-food markets, investment climate, justice reform, curbing land raiding, etc.)

Fourth, despite several state programs to support micro, small and medium-sized farms by the size of agricultural assets, the introduction of a transparent state register of recipients of assistance (DAR), simplification of mechanisms for its receipt, incentives for the legalisation of social and labour relations of the self-employed in the households and other, as mentioned earlier, there are controversial legislative initiatives. It refers to the possible increase in fiscal pressure in case of the adoption of the draft law "On Amendments to the Tax Code of Ukraine and Certain Legislative Acts of Ukraine on Ensuring the Balance of Budget Revenues" (Reg. No. 5600). In particular, owners of land plots outside settlements will have to pay at least the minimum tax amount (approximately UAH 1500 per 1 ha). For citizens, who will not lease land shares, the minimum tax liability is introduced, which can significantly increase the payment for the land. Although many land plots are not cultivated for various reasons. Another innovation is possible. In the case of the sale of agricultural products in the amount of 12 minimum wages per year, which is UAH 78 thousand (until 31.12.2021 – UAH 6500×12), 18% of personal income tax (UAH 14040) and 1.5% (UAH 1170) of military duty must be paid. Hope for positive changes and additions in terms of the establishment and development of the SFG after the second reading.

In case of constant adherence to the initiated measures of national protectionist policy in strategic areas designed to increase the institutional capacity and resource sufficiency of rural AHs, systematic and consistent support for the market activity of micro and small business entities, the institutionalisation of employment of members of SFGs and other micro and small forms of economic activity (see Fig. 1), the willingness and resilience of the rural population to risks such as the coronavirus pandemic will significantly increase. According to expert estimates, the potential for transforma-

tion of households into family farms is about 800 thousand (for reference: the total number of rural households is 4783.1 thousand, or 32.3% of the total with an average size of 2.67 people). Under favourable conditions, some researchers predict that by 2030 the number of private farms under the inertial scenario (maintaining the average annual rate of 2015-2019) will increase to 9241 units, according to the basic scenario (long-term implementation of the protectionist state policy launched in 2021) - up to 12315 and according to the optimistic scenario (adherence to the basic scenario with the simultaneous introduction of preferential conditions for compulsory state social insurance of members of the SFG and other forms of micro and small businesses) - up to 15389 units. Significantly, more than half of them will specialise in dairy farming (Mamchur, 2021, p. 379-380).

► Conclusions

Based on the research on the prevention of socio-economic risks in the field of rural employment and the rural labour market, there are grounds for such generalisations.

1. Considering the impact of quarantine restrictions related to the spread of the COVID-19 pandemic on social and labour relations in rural areas, it is essential to implement the already developed strategic priorities to minimise the destructive consequences of extreme events and to fill human-centred, territorially-oriented state and local programmes of social and economic development of rural AHs with specific measures and resources. The main criterion for their efficiency should be the preservation of existing and establishment of new skilled jobs with decent conditions and remuneration, expansion of sources of income of rural households and state social protection of the rural population.

2. As practice has demonstrated, modernisation of the structure of agricultural production is among several efficient anti-covid strategic measures for micro and small enterprises. Namely: cultivation of various niche crops, livestock development, diversification of agrarian and alternative activities in territorial production clusters, cooperation and integration in extended chains of establishing new jobs and added value and promotion of

their products through various marketing channels to domestic and foreign markets.

1. The institutionalisation of socially protected employment of peasants of working age should become one of the main national priorities of the state. The authorised state authorities should comprehensively assess the role and significance of AHs and newly established SFGs, and not see them only as a source of filling the state and local budg-

ets. By developing micro and small farms, the problems of family unemployment and poverty of rural households are partially solved, the degradation of human and social capital is stopped, the demographic crisis is overcome, and labour emigration of citizens, particularly of reproductive and socially active age, is reduced, administrative control over rural areas, in particular in the border regime zones, is ensured, etc.

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Інноваційні стратегії мінімізації ризиків сільського населення щодо захищеної зайнятості, викликаних пандемією коронавірусу та інституційними обмеженнями

Олексій Миколайович Могильний, Наталія Іванівна Патика

Національний науковий центр «Інститут аграрної економіки»
03127, вул. Героїв Оборони, 10, м. Київ, Україна

► **Анотація.** У статті представлені результати заключного етапу дослідження, отримані під час виконання проєкту «Оцінювання впливу карантинних заходів, пов'язаних з COVID-19 для аграрного сектору й продовольчої безпеки держави та розроблення алгоритму дій щодо мінімізації негативних наслідків» № 2020.01/0313 конкурсу «Наука для безпеки людини та суспільства» за рахунок грантової підтримки Національного фонду досліджень України. Стаття є продовженням публікації в журналі «Економіка АПК». 2021. № 4. С. 51–67. Могильний О.М., Патика Н.І., Грищенко О.Ю. Вплив карантинних обмежень, пов'язаних із COVID-19, на ринок праці та зайнятість у сільській місцевості. Мета статті – опрацювати стратегічні напрями мінімізації ризиків сільського населення у сфері соціально- трудових відносин, пов'язаних із пандемією COVID-19. Монографічний підхід використано для всебічного й глибокого вивчення забезпечення сталості трудової сфери та соціального захисту населення в екстремальних умовах і виявлення причинно – наслідкових зв'язків їх розвитку. Застосування системного і комплексного аналізу надало можливість опрацювати стратегічні напрями підвищення економічної спроможності об'єднаних територіальних громад, активізації ринкової спрямованості сімейних фермерських господарств, інших мікро- і малих форм підприємництва та інституціоналізації захищеної зайнятості в аграрній та позааграрній сфері. Нормативний і позитивний підходи сприяли визначенню перспектив кількісної трансформації особистих селянських господарств у товарні підприємства сімейного типу до 2030 р. Завдяки групуванню ідентифіковано стратегічні пріоритети забезпечення продуктивної зайнятості сільського населення. Залучення абстрактно-логічного інструментарію дозволило сформулювати проміжні та прикінцеві висновки й пропозиції щодо мінімізації соціально - економічних ризиків працівників аграрного сектору в умовах поширення пандемії, спричиненої коронавірусом SARS-CoV-2. Висвітлено наукові та інші публікації з питань забезпечення сталості соціально- трудових відносин і доходів селян в умовах поширення обмежень на економічну діяльність, пропозиції стосовно радикальної зміни солідарної системи соціального захисту, зменшення нерівності у доступу до базових потреб соціально вразливих категорій населення. Розглянуто генезу і розвиток теорій «гвинтокрильних грошей» та безумовного базового доходу як принципово нові постіндустріальні моделі стимулювання економіки та соціального захисту малозабезпечених верств населення, умови їх застосування та можливі макроекономічні наслідки. Виокремлено пріоритетні напрями запобігання ризикам щодо продуктивної і захищеної зайнятості працівників аграрної сфери. Це, зокрема, інституційна спроможність і ресурсна достатність сільських об'єднаних територіальних громад; системна і довгострокова підтримка ринкової активності мікро- і малих суб'єктів господарювання; інституціоналізація зайнятості членів сімейних фермерських господарств та інших форм малотоварного підприємництва. Набули подальшого розвитку антиковідні стратегічні напрями розвитку малих форм господарювання та поширення системи загальнообов'язкового державного соціального страхування на самозайнятих працівників в особистих селянських господарствах. Пропозиції з питань вдосконалення відносин у трудовій сфері аграрного сектору та соціального захисту сільського населення можуть бути враховані під час опрацювання стратегічних напрямів підтримки мікро- і малого підприємництва та самозайнятих осіб в екстремальних умовах сільського соціуму

► **Ключові слова:** державні програми підтримки малого підприємництва, пріоритетні протиковідні заходи, сільські об'єднані територіальні громади, сімейні фермерські господарства, соціальний захист сільського населення, інституціоналізація зайнятості



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Potential Areas of Financial Incentives for the Development of Scientific and Innovation Clusters

Oleksandr Nechyporenko¹, Yurii Nosenko², Lesia Sinelnik³

¹National Scientific Centre "Institute of Agrarian Economics"
03127, 10 Heroiv Oborony Str., Kyiv, Ukraine

²Presidium of the National Academy of Agrarian Sciences of Ukraine
01010, 9 Mykhaila Omelianovycha-Pavlenka Str., Kyiv, Ukraine

³National Scientific Centre «Institute of Agriculture of NAAS»
08163, 2B Mashynobudivnykiv Str., Kyiv, Ukraine

► **Abstract.** Currently, cluster associations are one of the most effective forms of organisation of innovation processes in the region, in which not individual enterprises compete in the market, but entire complexes that reduce their costs through cooperation. Such associations help to increase labour productivity, accelerate the pace of innovation in production, promote the competitiveness of various sectors of the economy, do not require significant funds and consist of various initiatives to encourage participants to cooperate. The establishment of the cluster allows the development of a specific economic space designed to expand free trade, increase exports of the cluster's products, and free movement of capital and human resources. The purpose of the study – summarise the mechanisms of support for cluster developments abroad. To expose modern aspects of the national institutional environment to stimulate the genesis of scientific and innovative agro clusters and identify the main possible areas of financial support for their development. General scientific and specific methods of empirical research were used: comparative-historical and monographic, which allowed evaluation of the dynamics of the development of state support for clustering processes in the European Union and Ukraine, and to identify the sources of their financial incentives; systematic approach - contributed to the study of the mechanisms of interaction of the cluster as a system with the surrounding social environment, to perceive the cluster development as a dynamic, constantly evolving integrity; analysis and synthesis provided an opportunity to identify potential financial methods of cluster support and to integrate approaches to the development of a mechanism for stimulating cluster associations; cognitive operations of comparison and description were used; the abstract and logical method was used for theoretical generalisations and conclusions. The implementation of modern cluster policies in the countries of the European Union is analysed. It is established that, despite the specificity of the development and implementation of cluster programs and their dependence on the context and validity of national/regional policies in different territories, the analysed approaches have some progressive similarities. The priority opportunities of smart specialisation of the region are presented, in the design of which cluster developments are the main "blocks". The best European projects related to the socio-economic growth of regions that stimulate the development of clustering are highlighted. The components of sustainable financing of regional cluster development in Ukraine are defined, which primarily involves start-up state support. The possibility of stimulating the clustering process with funds allocated from the state budget for the development of the regions, and for financing the Sectoral Policy Support Program was assessed. The possibility of self-financing and self-crediting scientific and innovative agricultural clusters, which will be established based on interregional scientific centres of NAAS, was confirmed. The conceptual foundations for the design of sources of financial support for the establishment and development of scientific and innovative cluster

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*Corresponding author

models based on interregional research centres of NAAS were developed. Based on successful European experience, the theoretical and methodological approaches to the development of financial clustering mechanisms in Ukraine have been improved. The areas of financial incentives for clustering processes within the framework of national, sectoral and regional strategies, in particular, strategies for the smart specialisation of regions and territorial communities, strategies to support small and medium-sized businesses as the main element of entrepreneurial initiative and the basic driver of cluster establishment are proposed

► **Keywords:** state support, clustering, regional development, financial mechanism, incentives, interregional scientific centre, smart specialisation

► Introduction

The issue of increasing competitiveness and ensuring innovative development of the agro-industrial complex of Ukraine is one of the most urgent for the national economy. Therefore, new forms of development of economic relations are being developed and implemented in the state, and the search for the most efficient use of available resources continues.

In particular, the Laws of Ukraine's "On Innovative Activity", "On Science Parks" and several other legal acts were adopted to establish and develop innovative structures of various types, intensify the processes of development, implementation, and production of new products both in domestic and foreign markets. In this context and in pursuance of the Program for the Implementation of the Concept of Reforming Agrarian Science, to improve coordination and intensification of scientific research and implementation of innovative developments based on the requirements of the regions, the National Academy of Agrarian Sciences of Ukraine (NAAS) in 2019 established five Interregional Scientific Centers, which included scientific and educational institutions, local authorities, representatives of agribusiness, public organisations, etc.

Therewith, the proposed cluster form of cooperation, which, given the international experience of recognition of its advantages, can ensure effective interaction of all structural units of interregional research centres to obtain a synergistic effect, remains unregulated in Ukraine [1, 2]. Therewith, for the successful implementation of cluster models, as international experience demonstrates, the determining factors are the development and implementation of appropriate strategies and programs to support the clustering process at the state level [3].

Moreover, the budgetary support of clusters, and any organisational form of production, is possible only under the condition of a balanced national policy, coordinated with the policy of regional development, innovation policy, and clearly defined modern tools to support the processes of economic clustering and further development of clusters.

The prospect of clustering was recognised at the state level in 2001 [4]. However, as is known, the practical implementation of this process is too delayed in time, primarily due to the weak state financial support in the form of public investment, budget financing, and loans guaranteed by the government or local governments. In addition, at the stage of cluster model development in Ukraine, the opportunities to receive assistance from international financial institutions are used very limitedly both in the form of cash grants and in the form of technical assistance, consulting services, etc.

As noted earlier [2], in recent years, in particular, government documents have demonstrated the necessity of promoting innovation in all promising areas of economic activity (namely, the agricultural sector of the economy has now become such), the establishment of scientific-innovative-production clusters based on the commercialisation of their scientific developments using unused production capacities of state-owned enterprises and sectoral research institutes. Therewith, back in 2013, it was envisaged to define and legislate a clear procedure for financing (co-financing) of clusters, priority projects, and transparent distribution of profits and assets based on the results of activities [6]. However, in 2021, experts of the European Cluster Collaboration Platform (ECCP), assessing the cluster policy of Ukraine, note that the implementation of the relevant program should be implemented through

financial instruments, but there is no information on the distribution of financial resources among the beneficiaries of the programme (cluster organisations, research institutions, academic institutions, technology centres, etc.) [7]. Thus, financial mechanisms for regulating the activities of clusters, especially scientific and innovative ones, in Ukraine require theoretical research and practical adaptation to economic activity.

► Analysis of recent studies and publications

Several significant developments are known in the study of mechanisms for stimulating scientific and innovation activities in Ukraine. In particular, the prospects and new opportunities for stimulating the innovative development of the macro-region by improving the relevant mechanisms based on the results of monitoring the innovative sphere of the region's economy and forecasting trends in the development of new technologies are identified by the foresight method in S.D. Shchehliuk's research [6]. Scientists O. E. Kuzmin, O.O. Maslak, and T.E. Udovychenko note that there are problems on the way of clustering, to overcome which it is necessary to intensify activities to develop a unified state cluster policy. Therewith, the latter should cover: the development of support programs for small businesses, technology parks, and special economic zones; the development of investment and venture funds, and investment programs; promotion of projects designed to increase the competitiveness of cluster members; development of legislative initiatives for clustering the national economy; establishment of an institutional environment to stimulate cluster developments, etc. [8].

The necessity of establishing and improving the mechanisms of financial support for the development of clusters at the state level and providing them with the necessary methodological, information, consulting, and educational support is noted by V.S. Dubovyk in his work [9].

According to the results of the analysis of the functioning of clusters in nine economic regions of Ukraine, the researcher S.V. Busniuk identifies the peculiarities of their establishment and activity, specifying that the sources of financial capital development of the cluster are the own funds of

participating enterprises, funds of international organisations and programmes, sponsorship of business structures, charitable contributions of legal entities and individuals, grants and subsidies from the state and local budgets [10].

Scientists O.R. Kvasovskiy and E.T. Karapetian, having summarised the relevant definitions of a wide range of researchers, identified the structure of the financial mechanism, which is understood as a specific component of the economic mechanism, a set of interrelated components: financial methods, financial instruments, financial levers, regulatory and legal and information support. They further note that, given the increased importance of sources of financing for the activities of any cluster development at the stage of its establishment, if necessary, various financial institutions can be involved in the association: investment funds, microcredit institutions, venture capital and leasing companies, commercial banks, etc.

Despite the urgency of the problem, a unified approach to possible mechanisms of financial incentives for clusters at the regional and interregional levels has not yet been developed. The purpose of the study – summarise the mechanisms of support for cluster developments abroad. To expose modern aspects of the national institutional environment to stimulate the genesis of scientific and innovative agro clusters and identify the main possible areas of financial support for their development.

► Results and Discussion

As the study of literature demonstrates, in many countries cluster developments are strongly supported by the state. Thus, the published report of the European Observatory for Clusters and Industrial Change on cluster support in 29 European countries demonstrates an in-depth analysis of 30 national and 55 regional programs, specifically designed policies and strategies to support clusters, which are widely used both in Europe and around the world. Therewith, even though the specific development and implementation of cluster policy depend on the context and validity of national/regional policies in different territories, the analysed approaches share some progressive similarities, in particular, support for the participation of small and

medium-sized enterprises in clusters, international cooperation of such enterprises in the same sector, intersectoral (inter-sectoral) cooperation, access to other markets, entrepreneurship development activities; financing of meetings and networking; establishment of new cluster infrastructure; promotion of eco-efficiency and a new culture of cooperation and management; business development [11].

In addition, the EU is gaining weight in the policy of regional innovation development, which is called the Smart Specialisation Strategy, and

should contribute to the economic growth of the regions through the full disclosure of their potential. Smart specialisation is a partnership between representatives of business, government, scientific and technical institutions, and public organisations, in which the authorities encourage and stimulate entrepreneurs, scientists, and developers to cooperate to implement the main areas of specialisation of the region. Therewith, cluster developments are the main “blocks” in the development of such specialisation (Fig. 1).

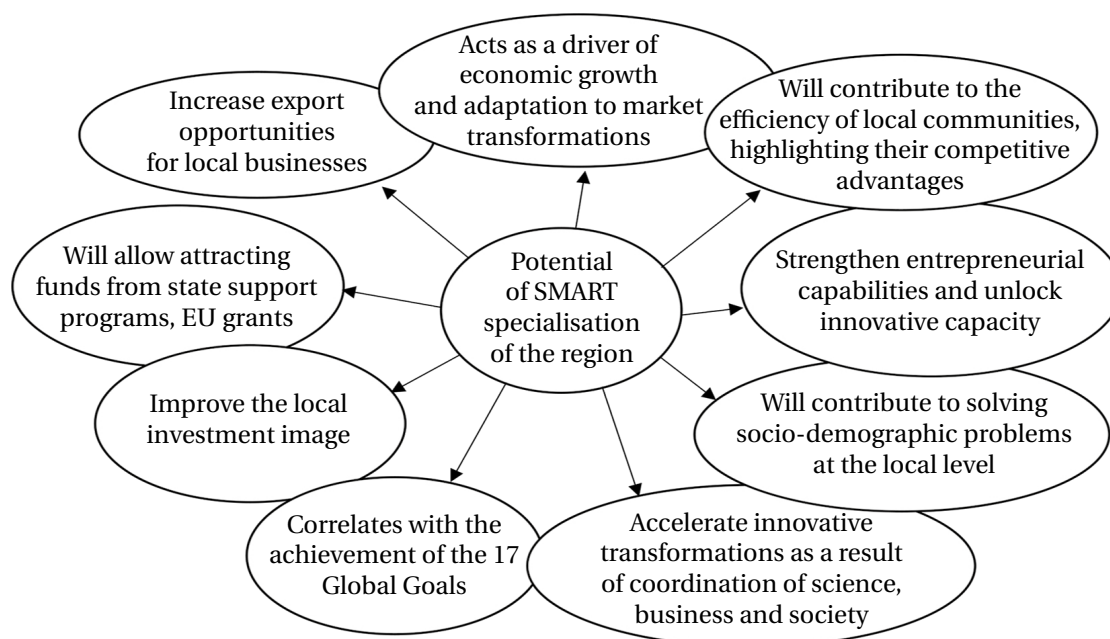


Figure 1. Priority opportunities for smart specialisation of the region

Source: Developed based on [3]

Currently, in European countries, the presence of a specific smart specialisation is considered a condition for obtaining funding from the European Union's structural funds. The International Organisation for Economic Cooperation and Development (OECD) is conducting a relevant audit of “smart” specialisation. Throughout the EU, the authorities encourage the development of national and regional research and innovation strategies for smart specialisation (Research and Innovation Strategies for Smart Specialisation, RIS3) to ensure the proper use of EU structural funds and to increase synergies between different alliance policies: national and regional, and public and private investment [12].

Notably, the European cluster support system is based on the development and implementation

of programs at the European, regional and national levels, the main tasks of which are defined as:

- establishment of an institutional environment – higher, favourable for the development of clusters, based on strengthening the cooperation of stakeholders and increasing their competitiveness;
- modernisation of production and successful implementation of smart specialisation at the regional level;
- further development of innovative (research) developments, including their technological support.

There are several programs in the European Union to stimulate cluster development. Noteworthy are the projects designed for the economic development of the regions. This is Interreg Europe - a project to improve regional policies in four main

areas: innovative development, support for small and medium-sized enterprises (SMEs), green economy, and energy efficiency; SMARTY – a project to develop a unified knowledge base on best practices in regional development approaches; InnoHEI – a project to improve research infrastructure and establish sustainable cooperation between science and business; INNO Industry – a project to improve innovation development policies through the involvement of clusters in smart industry projects, the establishment of regional hubs on the development of the region's innovation ecosystem in a particular industry through regional clusters [13]. In European countries, three main sources can be identified for the financial support of the establishment and functioning of cluster structures:

1. State budget (France, Sweden, Portugal, Norway).
2. Regional budgets (Germany, Great Britain, Lithuania, Poland).
3. EU Structural Funds (Germany, Great Britain, Lithuania, Poland) [3].

In Ukraine, innovative cluster structures could efficiently contribute to the regional socio-economic development of territorial communities in particular. To this end, local authorities should ensure at the initial stage the integration into regional development strategies of tasks designed to establish and develop clusters, develop and constantly update the list of innovative business entities and key technological solutions in key industries, especially in selected areas of smart specialisation of regions and communities. For example, to significantly strengthen communication links between the authorities, business and scientific institutions, and higher education institutions of the region (joint presentations, consultations, specialised innovation days, training, workshops, etc.), to improve and develop cluster infrastructure, including using the infrastructure capabilities of innovative technology parks being established in Ukraine.

However, it is necessary to actively stimulate the processes of clustering development, which is possible both through the direct financial support of cluster initiatives and through indirect mechanisms. Indirect stimulation can be performed within the framework of national, sectoral, and regional strategies, in particular, strategies of smart

specialisation of regions and territorial communities; strategies to support small and medium-sized businesses (SMEs); support for technological transformations and significant modernisation of existing industries; organisation of competitions for the development of competencies, training, information campaigns, financing of relevant fundamental research and development; facilitating access to export markets and increasing participation in global value chains (internationalisation of cluster initiatives) [13].

The “Cluster Support Program in Ukraine: Development Principles and Key Features” proposed by German and Ukrainian experts at the end of 2015 provides for a model of sustainable financing for regional associations, which could include:

1. Basic budget funding (e.g., from state/international institutions/organisations).
2. Income received (e.g., membership fees, income from services such as participation in trade fairs).
3. Third-party funding (e.g., private sector investment project financing, international or government research programmes).

However, the program notes that the initial funding should be provided by the public sector/international organisations. Further, a model of downward financing is proposed, which motivates the cluster to generate income and find alternative sources of funding. Thus, if at the preparation stage 100% of the eligible costs are covered by the public sector/international organisations, their share can be reduced during the following stages [14].

Notably, even in the absence of sufficient legislative regulation, clusters in Ukraine objectively exist, and some of them are financed. Thus, in 2018, within the framework of the implementation of the Agreement on Financing of the Sectoral Policy Support Programme [15], the following funds were allocated: “Regional Innovation HUB” (RInnoHUB) – UAH 1.95 million; for the establishment of an aviation cluster as a “growth point” of the economy of the Kirovohrad region – UAH 9 million; for the development of rural entrepreneurship and infrastructure of the agro-tourism cluster “HorboHory” – UAH 18.37 million [3].

Currently, three projects, which can be identified as cluster start-up programs, are being funded from the EU budget through sectoral support,

amounting to approximately \$ 16.2 million. The total amount of funding for the 70 projects in Ukraine is USD 1.5 billion, which is 5% of the total funding for 70 projects in Ukraine. Therewith, co-financing from local budgets and other sources accounts for only about 1% [3, 16].

Stimulating the design of cluster developments is possible with the funds allocated from the state budget for the development of regions. Thus, the State Regional

Development Strategy for 2021-2027 (SRDS) provides for the targeted allocation of funds for the implementation of regional development programs that correspond to the priorities and objectives defined in it and regional development strategies, the annual amount of which, according to the legislation, will be at least 1% of the general fund revenues in the state budget [14].

The Action Plan for 2021-2023 for the implementation of the State Regional Development Strategy provides for the area "Support for interregional cooperation and exchange programs between the regions of Ukraine", one of the tasks of which is to establish conditions for stimulating regions and territorial communities to cooperate and implement joint interregional projects. In addition (which is important for the development of interregional scientific centres of NAAS as cluster structures), some operational purposes of the mentioned plan, to promote the introduction of innovations and the growth of the technological level of the regional economy, support innovative enterprises and startups, provide for the development and implementation of an efficient mechanism for supporting startup companies, innovation clusters that unite legal entities-residents and individual entrepreneurs engaged in innovative activities, technology transfer centres. To this end, first of all, it is necessary to conduct an inventory of the existing research and innovation infrastructure in higher education and research institutions to assess the possibilities of their participation in the development of regions based on smart specialisation, participation in the development of efficient interaction between the educational and scientific environment and business [17].

According to the SFDRR, and for the implementation of regional development strategies until 2027, separate measures of immediate support for cluster development are envisaged at the regional

level. In particular, using such support tools as the establishment of technology transfer centres, databases of domestic developments of the profile area, educational environment for the population of the region, business incubators for start-up companies; training and retraining of personnel to ensure the activities of clusters by specialists; search for investors; consulting support, etc. Therewith, the focus of regional strategies is mainly the establishment at the level of the best European standards within the framework of smart – specialisation and strategic vision of the relevant conditions, basic facilities, and infrastructure elements to ensure an investment attractive and environmentally – the correct image of the territory through the introduction of a cluster model of development and effective use of the innovative potential of the region [12].

Along with the instruments of external support, it is important to establish a financial mechanism in the cluster structures, based on the principle of ensuring the effective interaction of all its elements (methods, tools, and levers) that influence the process of reproduction of scientific and innovative and production and economic activities of the cluster association. The structure of the financial mechanism of cluster development includes such financial methods as financial forecasting and planning, financing, investment, lending and self-lending, pricing, taxation, incentives and responsibility, financial control, etc.

Under the current conditions, the priority financial methods that should be used in the process of establishment and further functioning of clusters, including scientific and innovative ones, include, in addition to investment, financing, lending (with which there are some difficulties), and, importantly, self-credit and self-financing.

Within the cluster association, self-financing means that covering the costs of both transformational and transactional (very relevant for science and innovation clusters) should be performed at the expense of own funds of development funds established by deductions from the profits of participating entities or the total profit of the cluster establishment. Therewith, self-lending provides an opportunity for cluster members to avoid raising funds on the credit market and mobilise internal loan sources for this purpose. Notably, the potential for practical

implementation of the self-lending method at the level of cluster structure is much more significant than at the level of a separate independent entity, as cluster members can establish their credit union [5].

If considering the interregional scientific centres of NAAS as scientific and innovative cluster structures that unite homogeneous regional clusters, their establishment will depend primarily on the mobilisation of internal resource capabilities of a particular territory and the possible attraction of funds from the above state sources. Thus, the current aggregate potential of scientific, natural, labour, institutional and financial resources can stimulate the development of favourable conditions for the implementation of the plan, and in the future the established integrated system of local authorities,

science, education, and agricultural business will develop independently, using generally accepted methods of financial management.

To some extent, financial support for the activities of the newly established, based on the mentioned centres, scientific and innovative agricultural clusters can be provided in the estimates of using the funds of the special fund of the National Academy of Agrarian Sciences of Ukraine. The availability of such potential opportunities is evidenced by the reported financial performance of NAAS (Table 1). Although for this purpose it is necessary to initiate and introduce appropriate amendments and additions to the budget legislation and to revise the internal regulations on the procedure for the development and use of the particular fund.

Table 1. Financial performance of NAAS, UAH million

Indicator	Approved with amendments		In fact	
	2016-2020	including 2020	2016-2020	including 2020
Total amount of funding	5014.6	1298.0	5527.4	1255.8
1. General fund, UAH million	1988.1	517.9	1986.2	517.5
including for scientific and research activities	1892.6	495.5	1894.3	495.2
2. Specific fund, UAH million	3026.4	780.1	3541.1	738.2
including proceeds from operating activities	989.0	210.9	964.6	206.0
3. The share of the special fund of scientific institutions in the total amount of funding, %.	60.3	60.1	65.9	60.8
4. Received own funds of scientific institutions per 1 UAH of the general fund, UAH	1.52	1.51	1.78	1.60

Source: Developed based on [18, 19, 20]

► Conclusions

World experience demonstrates that financing of cluster initiatives and further activities of associations can be performed both through direct budget support of clusters and indirect mechanisms. Indirect incentives are available within the framework of national, sectoral, and regional strategies, in particular strategies for the smart specialisation of

regions and territorial communities, strategies for supporting small and medium-sized businesses as the main element of entrepreneurial initiative, and the main driver of cluster establishment. The regional development strategies developed in Ukraine mostly only declare the current trends of social and economic growth, including the establishment of clusters, but do not provide financial support.

Therewith, it is necessary to establish the productive activity of clusters, including scientific and innovative ones:

1) financial capital for the launch of cluster initiatives (cluster management), which is based on a partnership with the participation of the public and private sectors and provides start-up assistance for the development of associations on the principle of co-financing and a progressive basis;

2) financial capital for cluster development (funds for joint cluster projects) provided for individual projects only based on a competitive basis and considering specific results and thematically combined with projects of other clusters in the region. The decisive share, in this case, maybe the EU structural funds under the condition of a balanced relaxation of competitive requirements for financial support.

The RDDs can become a guideline for the preparation of regional development projects that will include the development of cluster models based on interregional scientific centres of NAAS, the establishment of regional cluster initiatives/clusters, cluster research on the ground, cluster infrastructure development, etc. Budgetary support for cluster development projects under programmes of regional development, implemented at the expense of funds received from the European Union within the framework of improving the regional policy of Ukraine can be performed under the condition of simplifying the procedure for obtaining funds to increase the number of incentives.

Innovative agro-clusters established based on the Interregional Scientific Centers of NAAS, using at the initial stage state incentives, in the future have potential opportunities for self-financing and self-crediting of their activities.

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Потенційні напрями фінансового стимулювання розвитку науково-інноваційних кластерів

Олександр Миколайович Нечипоренко¹,
Юрій Михайлович Носенко², Леся Михайлівна Сінельник³

¹Національний науковий центр «Інститут аграрної економіки»
03127, вул. Героїв Оборони, 10, м. Київ, Україна

²Президія Національної академії аграрних наук України
01010, вул. Михайла Омеляновича-Павленка, 9, м. Київ, Україна

³Національний науковий центр «Інститут землеробства НААН»
08163, вул. Машинобудівників, 2Б, смт Чабани, Київська обл., Україна

► **Анотація.** На сьогоднішній день кластерні об'єднання є однією з найефективніших форм організації інноваційних процесів в регіоні, за якої на ринку конкурують вже не окремі підприємства, а цілі комплекси, які скорочують свої витрати завдяки кооперації діяльності. Такі об'єднання сприяють підвищенню продуктивності праці, прискорюють темпи впровадження інновацій на виробництві, сприяють підвищенню конкурентоспроможності різних галузей економіки, не вимагають значних коштів і складаються з різних ініціатив, спрямованих на стимулювання учасників для співпраці. Створення кластера дозволяє сформувати специфічний економічний простір, метою якого є розширення сфери вільної торгівлі, збільшення обсягів експорт продукції кластера, вільного переміщення капіталу та людських ресурсів. Мета статті – узагальнити механізми підтримки кластерних утворень за кордоном. Розкрити сучасні аспекти національного інституційного середовища стимулювання генезису науково-інноваційних агрокластерів та визначити основні можливі напрями фінансової підтримки їх розвитку. Використано загальнонаукові та специфічні методи емпіричного дослідження: порівняльно-історичний та монографічний, які дозволили оцінити в динаміці розвиток державної підтримки процесів кластеризації в Європейському Союзі та в Україні, а також з'ясувати джерела їх фінансового стимулювання; системний підхід – сприяв дослідженню механізмів взаємодії кластера як системи з оточуючим суспільним середовищем, сприймати кластерне утворення динамічною цілісністю, що постійно розвивається; аналіз і синтез надали можливість розкрити потенційні фінансові методи підтримки кластерів та інтегрувати підходи до формування механізму стимулювання кластерних об'єднань; використано пізнавальні операції порівняння й опису; абстрактно-логічний метод застосовано для теоретичних узагальнень та формування висновків. Проаналізовано реалізацію сучасних кластерних політик у країнах Європейського Союзу. Встановлено, що, незважаючи на конкретність розробки та реалізації кластерних програм і їх залежність від контексту та обґрунтованості відносно національної/регіональної політики на різних територіях, в аналізованих підходах вирізняється їх певна прогресивна схожість. Наведено пріоритетні можливості смарт-спеціалізації регіону, в розбудові якої кластерні утворення виступають основними «блоками». Висвітлено кращі європейські проекти, пов'язані із соціально-економічним піднесенням регіонів, які стимулюють розвиток кластеризації. Розкрито складові сталого фінансування регіональних кластерних утворень в Україні, що насамперед передбачає стартову державну підтримку. Оцінено можливість стимулювати процес кластеризації коштами, що направлятимуться з державного бюджету на розвиток регіонів, а також на фінансування Програми підтримки секторальної політики. Підтверджено можливості самофінансування та самокредитування науково-інноваційних агрокластерів, що будуть утворені на основі міжрегіональних наукових центрів НААН. Розвинуто концептуальні засади формування джерел фінансового забезпечення становлення і розвитку науково-інноваційних кластерних моделей, утворених на базі міжрегіональних наукових центрів НААН. На основі успішного європейського досвіду вдосконалено теоретико-методичні підходи до побудови фінансових механізмів кластеризації в Україні. Запропоновано напрями фінансового стимулювання процесів кластеризації в межах загальнонаціональних, галузевих та регіональних стратегій, зокрема стратегій смарт-спеціалізації регіонів і територіальних громад, стратегії підтримки малого і середнього бізнесу, як основного елемента підприємницької ініціативи та базового драйвера створення кластерів

► **Ключові слова:** державна підтримка, кластеризація, регіональний розвиток, фінансовий механізм, стимулювання, міжрегіональний науковий центр, смарт-спеціалізація



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Foreign Trade in Agricultural Goods of Ukraine in the Context of the Association Agreement with the European Union

Habriiel Spaskyi*

Institute of Agricultural Microbiology and Agroindustrial Manufacture of NAAS
14027, 97 Shechenko Str., Chernihiv, Ukraine

► **Abstract.** Foreign trade plays an essential role in the economy of Ukraine. The leading role of agro-industrial export for Ukraine is gaining the level of national, in particular, food security of the state. Thus, changes in foreign trade in agricultural products should be based on both the fundamental principles of sectoral production and the shifts in modern production. The purpose of the study – identify, based on the analysis, trends in foreign trade and areas for improving the competitiveness of agricultural products of Ukraine with the European Union (EU) in the context of the implementation of the Association Agreement. The following methods were used: analysis and synthesis, analytical generalisations – in the process of analysing foreign trade in agricultural goods; tabular – for a visual representation of the results of the study; economic and statistical – to assess the trends in foreign trade; abstract and logical – in the development of conclusions. The volumes, dynamics, and structure of exports and imports of agricultural goods of Ukraine with the EU countries are analysed, changes in the foreign trade regime are assessed, and trends and impact of the implementation of the Association Agreement between Ukraine and the European Union on the development of foreign trade of Ukraine are established. The place and importance of the agricultural sector in European markets are explored. The foreign trade turnover of agricultural goods in Ukraine is determined. The algorithm for assessing the level of competitiveness of agricultural products is summarised. It is established that with the strengthening of the export orientation of raw materials to the EU market of crop production, therewith, there is a high import dependence on finished food products, and the structure of imports is more diversified. Adaptation of Ukrainian legislation in the field of agriculture, sanitary and phytosanitary measures are incomplete and do not correspond to the planned pace. Ways to diversify exports and increase the profitability of foreign trade in agricultural products from Ukraine in the EU market are proposed

► **Keywords:** agriculture, foreign trade, agricultural goods, export-import, competitiveness, Association Agreement between Ukraine and the European Union

► Problem statement

Agriculture plays an important role in the economy of every country. It provides the population with food products, is the foundation of food security of the state and is an important element of world trade. International trade as a form of international economic relations is a component of balanced economic development and contributes to strengthening the competitiveness of the national economy and raising the living standards of peasants.

The involvement of the Ukrainian agrarian sector in the global food chains contributes to the expansion of Ukraine's trade opportunities in international markets. Along with unfavourable external conditions for export development, there are internal obstacles, i.e. military-political conflict in the east of the country, deterioration of economic relations with Russia, crisis state of the state economy, etc. The changes that have occurred today in

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*Corresponding author

Ukraine's foreign trade indicate the beginning of the process of transformation of the model of established trade relations and the development of new foreign economic relations in the world space, where other rules of the game apply [1].

Recently, the agricultural sector provides about 40% of foreign exchange earnings to the country [2]. Ukraine ranks first in the world in terms of production and export of sunflower oil and sunflower cake, second among exporters of rapeseed and barley seeds, fourth among exporters of corn in 2019 and rose from fifth to fourth place among exporters of wheat [3]. The development of the domestic economy will be influenced by the European integration of Ukraine and the establishment of the Deep and Comprehensive Free Trade Area (hereinafter – DCFTA) with the European Union.

► Analysis of recent studies and publications

Based on the results of the literature analysis, the conclusion is substantiated that the Association Agreement between Ukraine and the European Union and its implementation, in particular in terms of agriculture, has become the subject of research for many Ukrainian and European scientists. Among them, in particular: Ya. Hadzalo [1], B. Dukhnytskyi [4, 5], M. Emerson [6], Yu. Luzan [2], Ju. Lupenko [3], V. Movchan [7, 8], M. Pugachov [5, 9] and others. Therewith, the impact of the implementation of the provisions of the Deep and Comprehensive Free Trade Area Agreement between Ukraine and the EU on foreign trade in agricultural products, the state and prospects of further adaptation of Ukrainian legislation on sanitary and phytosanitary measures to the EU legislation, the possibility of increasing the competitiveness of agricultural products in the market of the countries were not sufficiently studied.

The purpose of the study – identify, based on the analysis, trends in foreign trade and areas for improving the competitiveness of agricultural products of Ukraine with the European Union (EU) in the context of the implementation of the Association Agreement.

► Results and Discussion

In the context of the ongoing economic crisis, the importance of foreign trade in agri-food products is growing for Ukraine. Domestic entrepreneurs are trying to expand their trade activities outside the ter-

ritory of Ukraine. Therefore, the European market, which is quite capacious and with a high-paying population, is considered promising.

Therewith, notably, foreign trade is both a priority area of the national policy (improvement of the investment climate, establishment of the foundation for the development of competitive goods) and one of the most important sources of state budget revenues. It affects the establishment of conditions for the implementation of, first of all, environmental protection programmes, stimulation of scientific and technological progress, solving structural problems, and ensuring the country's defence capability.

After signing the Association Agreement between Ukraine and the European Union, Ukraine has undertaken to approximate its national legislation to the European one, in particular, in the field of agriculture. In 2017-2018, the agricultural sector of Ukraine provided about 4 and 19% of the gross domestic product of the state, respectively, and was determined as the leading export sector in Ukraine. In 2017, exports of agri-food products reached 17.8 billion USD, which is 16.3% more than in 2016 (15.3 billion USD), in 2018 it increased to 18.6 billion USD – by 4.5%, and in 2019 the volume increased to 22.1 billion USD, or 18.8% compared to the previous year. Therewith, during these years, the volume of imports of agricultural commodities was significantly less than the volume of exports. Import volumes are lower compared to 2012, 2013 and 2014: in 2016, import volumes amounted to 3.8 billion US dollars, in 2017 they were already 4.3 billion US dollars, which indicates an increase of 9.3%, in 2018 they reached 5.0 billion US dollars, that is, an increase of 17%, in 2019 this figure was 5.7 billion US dollars, an increase compared to last year – 3.6% [3, 9]. All this is evidenced by the dynamics of exports and imports of agricultural goods (Fig. 1).

The volume of agricultural exports increased by 23.6%, while imports decreased by 23.7%. According to Ukrainian statistics, in 2019, plant products in the export structure reached the level of 12.9 billion USD, which is 31.6% more than in the previous year, and accounted for 58.4% of the value of agricultural exports. Most of all, they exported grain – 43.5% and seeds – 11.6%. Fats and oils in the structure of exports constituted 21.4% or the value of USD 4.7 billion. Compared to the previous year, the growth was 5.3%. Finished products account-

ed for 14.5% of the value of agricultural exports (or USD 3.2 billion), with a growth rate of 6.7% compared to 2018. The main volume of exports of fin-

ished products was represented by residues and waste of the food industry – 6.7% of total exports of agricultural products.

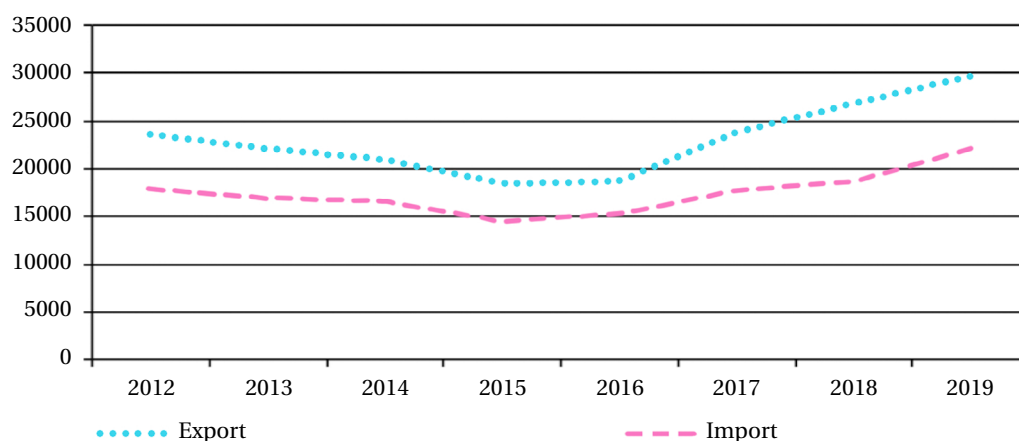


Figure 1. Volumes of Ukrainian exports and imports of agricultural products, USD billion

Source: Calculated based on [10, p. 63-65; 11, p. 29-31]

In turn, animals and animal products in 2019 were exported for the amount of USD 1.2 billion, with a share of 5.8%, which was the smallest in the total export of agricultural products of Ukraine. Among the goods of animal origin, Ukraine in 2019 exported meat and edible offal (3.2% of total exports of agricultural products), milk and dairy products, poultry eggs; natural honey (2.05% of total exports of agricultural products) [3].

Scientists note the importance of the development of foreign trade in agri-food products, in addition to the abolition of tariff barriers (including gradual for individual product groups), to ensure cooperation on the approximation of Ukrainian legislation to the legislative provisions of the EU Member States in matters of non-tariff regulation and the introduction of common standards in agriculture [5, 12].

According to the provisions of the Agreement, Ukraine and the EU will eliminate import duties on about 97 and 96.3% of tariff lines respectively [13, 14]. Since the provisional application of the Agreement by the EU and its ratification by Ukraine, duties for agricultural commodities have been abolished for 35.2% of tariff lines in Ukraine and 83.1% – in the EU. As for other goods, Ukraine introduces transitional periods lasting from 1 to 7 years for 52% of tariff lines, partial liberalisation for 9.8%, and duty-free tariff quotas for 3.0%. It means that for particularly sensitive sectors, the DCFTA gives Ukrainian agricultural producers more time to adapt to a more competitive environment while

providing consumers with more food choices at lower prices. In its turn, the EU established transitional periods for 2.0% tariff lines (lasting 3 and 7 years), and for the most sensitive products offered market access within duty-free tariff quotas. They were granted to Ukraine for grains, pork, beef and poultry, and some other food products [15; 16, p. 35-39, 5].

After the signing of the Association Agreement between Ukraine and the EU, the majority of trade flows of agricultural goods were reoriented to the European food market. Thus, in 2019, 41.5% of Ukraine's total exports and 41.1% of imports were sent to the EU countries. Therewith, the total trade balance for all goods with the EU member states was adverse and amounted to USD 4.2 billion in 2019 [3].

Unfortunately, a significant number of goods of Ukrainian origin do not correspond to the current EU standards and have low quality or low added value. As for agricultural goods, Ukrainian agricultural enterprises have received additional opportunities to expand their exports to the EU countries through gradual trade liberalisation, unification of sanitary and phytosanitary measures, and establishment of tariff quotas for individual groups of goods. During 2015-2019, Ukraine was a net exporter of agricultural goods in trade with the EU countries [2, 3].

The analysis demonstrates a gradual increase in Ukrainian agricultural exports to the EU (from USD 2.8 billion in 2015 to USD 9.2 billion in 2019). According to statistics, imports of agricultural goods are

growing. Over the past five years (from 2015 to 2019), imports have increased by 82%, and exports – by 78.6%, while the trade surplus in agricultural goods is constantly increasing. A significant increase in agricultural exports (by 24% in 2017 compared to 2016) occurred after the unification of sanitary and phytosanitary measures and the reduction of tariff barriers.

It is established that import and export flows between the EU countries and Ukraine are characterised as having a significant level of concentration. The five largest trading partners in 2019 accounted for more than 67.0% of exports (the Netherlands, Spain, Germany, Poland, and Italy) and 66.4% of imports (Poland, Germany, Italy, France, and the Netherlands) [3].

The increase in exports of agricultural goods from Ukraine is facilitated by the EU tariff quotas. According to the European Commission, quotas for honey, sugar, barley groats, flour, and starch, including processed, processed tomatoes, apple and grape juices were fully used in 2019. However, tariff quotas for lamb, mushrooms and processed animal oil products were not used at all. The quotas for the following goods were almost unused: cigars and cigarettes, processed dairy cream products, sweet corn and syrups [17].

After the signing of the Association Agreement, the share of agricultural goods in the structure of imports from the EU countries in 2019 increased to 50.6%, compared to 40.8% in 2012. Therewith, if considering the overall structure of imports of goods, the share of European goods in the total import flow to Ukraine in 2012-2018 reached 40.1% and in 2019 amounted to 41.1%. In this case, it can be argued that Ukraine is more

dependent on imports of agricultural goods from the EU compared to the total imports of Ukraine [4, 3].

The structure of Ukraine's foreign trade exports of agricultural products is not diversified, oriented to products of plant origin. Thus, 67% of total exports of agricultural goods to the EU countries in 2019 were provided by corn (32.2%), sunflower oil (18.5%) and rapeseed (16.3%). Sunflower oil cake and other wastes accounted for 4.8% of total food exports, poultry meat and edible by-products – 2.6, soybeans – 3.3, wheat – 1.6, honey – 1.2%, other commodity items provided less than 1% of total agricultural exports to the EU. The structure of agricultural imports is quite diversified, the share of most goods does not exceed 5% of total agricultural imports from the European Union. In 2019, only tobacco and tobacco products, protein concentrates and animal feed products exceeded 5% in the structure of imports [9, 6].

Instead, the structure of imports is dominated by finished products with a large share of added value. If considering the European value chains in the agricultural sector, Ukrainian products are at the very beginning of such a chain and accumulate the least added value [12]. Other factors that hinder the export of Ukrainian agricultural products are the inconsistency of EU import quotas with the structure of Ukrainian exports and the non-compliance of Ukrainian products with European sanitary and phytosanitary standards [8]. To assess the role of mutual exports and imports of agricultural goods to and from the EU countries were calculated indicators of the level and intensity of intra-industry trade in 2012-2019 (Table 1).

Table 1. Ukraine's foreign trade with EU countries in agricultural products (groups 1-24), USD million

Year	Export of agricultural goods to the EU	Import of agricultural goods from the EU	Intensity of intra-industry trade
2012	4931	2974	0.60
2013	4468	3067	0.68
2014	4765	2479	0.52
2015	4049	1503	0.37
2016	4121	1711	0.41
2017	5649	2014	0.36
2018	6126	2420	0.39
2019	7314	2840	0.39

Source: Calculated based on the data of the State Statistics Service of Ukraine [10, p. 63-65; 11, p. 29-31]

High values of indicators of the level and intensity of intra-industry trade indicate that Ukraine simultaneously exports and imports a

large number of agricultural products. According to calculations, the level of intra-industry trade in agricultural goods has been growing since 2015,

since 2012 – due to an increase in exports to the EU market. The maximum intensity of intra-industry trade was recorded before the signing of the Association Agreement between Ukraine and the European Union (2011 – 0.92 and 2013 – 0.68).

During 2015-2019, the values of the intensity indicator ranged from 0.36 to 0.41, which indicates a relatively low level of competition for agricultural producers in the EU market, their emphasis on low-value-added products. The conclusions are confirmed by the structure of export-import: export of agricultural goods is dominated by raw materials, and import – is by finished food products.

To implement the Association Agreement between Ukraine and the EU, the Cabinet of Ministers of Ukraine approved the “Action Plan for the Implementation of the Association Agreement” by Resolution No. 1106 of 25 October 2017. It provided for measures to adapt European legislation on quality, organic farming, fisheries, genetically modified organisms, and standards of trade in plants and animals. This Plan has 1943 tasks, of which 434 are designed to implement the provisions of the Agreement in terms of agriculture and rural development [18].

Work on the main part of the activities was planned for 2020 and 2021 with the implementation of 183 and 135 activities in this area, respectively. According to the Ministry of Economy of Ukraine, according to the results of 2018, 8% of all planned measures were not implemented, and in 2019, 36% of the planned measures were not implemented. In the area of sanitary and phytosanitary measures, as of February 2020, the overall success in the implementation of tasks is estimated at 55%. The Action Plan provides for the active implementation of European sanitary and phytosanitary measures from 2016 to 2021. In 2016, 93% of all measures were implemented, in 2017 – all measures were implemented, in 2018 – 76%, in 2019 – 43% [3, 18].

Along with this, it is recommended to implement measures to improve the economic situation in the agricultural sector, to increase the volume of possible exports of finished goods. In addition, it is proposed to reduce the dependence on imports of resources, which will reduce the cost of manufactured commodities, plan larger volumes of their production for export and other measures to improve Ukraine's foreign trade (Fig. 2).

Strengthen state support for foreign trade
Deepen awareness of foreign trade
Increase the competitiveness of agricultural enterprises oriented to foreign trade
Introduce innovations in agricultural enterprises to improve the quality of their activities
Increase the efficiency of national policy on foreign trade in agricultural goods

Figure 2. Measures to improve foreign trade in the agricultural sector of Ukraine

Source: Developed by the authors based on [12]

Currently, Ukraine is a commodity export country and the largest exporter of sunflower oil, corn and wheat. Considering the high level of openness of Ukraine's economy and the dependence of its exports on commodity prices on world markets, it is advisable to diversify the commodity structure, namely: to increase exports of agricultural products with medium and high added value, i.e. finished products.

The growth of total Ukrainian agri-food exports has a price foundation, thus, it is necessary to consider the risks of the impact on both domestic and foreign markets to a greater extent. However, the competitiveness of agricultural products on the world market is mainly price-based. The national agricultural

policy on pricing and regulation of prices for agricultural commodities should be extremely well-considered and balanced. In addition, the algorithm for assessing the level of competitiveness of agricultural products in the domestic and foreign markets is essential in determining the competitiveness of agricultural products, which consists of the system of a counting of economic, technical and regulatory parameters (Fig. 3).

The algorithm demonstrates that the competitiveness of commodity products of the agricultural sector should be understood as a level of its economic, technical and operational dimensions or parameters, at which it can compete with analogues

of foreign and Ukrainian origin. Products are more competitive in the market when their features com-

ply with all the requirements, namely technical and quality characteristics, and European standards.

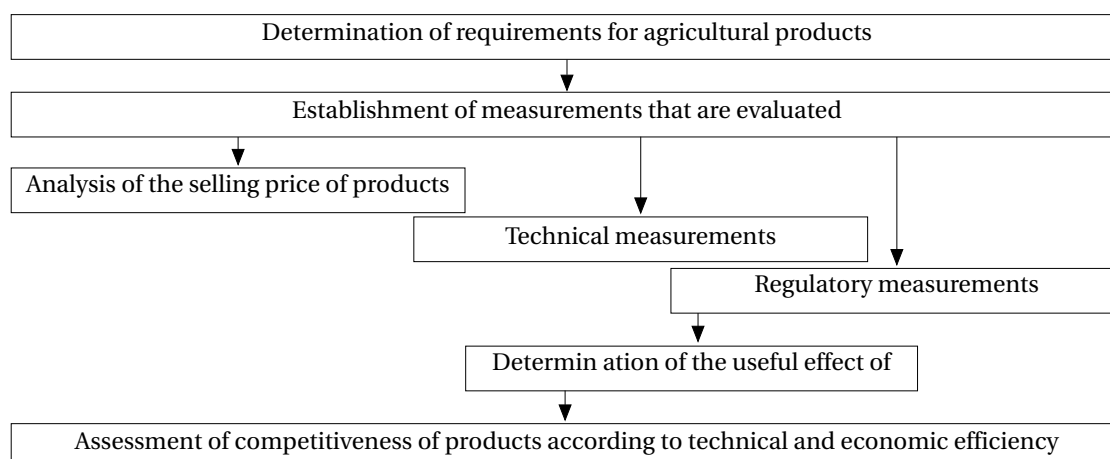


Figure 3. Algorithm for assessing the level of competitiveness of agricultural products

Source: Developed based on [19]

Competitive commodity products of the agricultural sector, the sale and consumption of which depend on the behaviour of sellers and buyers, easily penetrate food markets. The behaviour of producers depends on the trading strategy, the practice of setting prices, on the extent to which consumers can influence trade processes, which, given the situation, should make appropriate decisions to increase or decrease investments, introduce or change the advertising strategy, introduce innovative activities to achieve the final result [19].

According to the author, the behaviour of sellers and buyers depends on the existing structure of the domestic market, namely: on the number of sellers and buyers, the presence of different levels of barriers to entry and exit of producers to the market, the degree of differentiation of products, and the development of the network of market infrastructure institutions.

When developing a strategy to improve the competitiveness of commodity products, it is necessary to proceed from the innovative model of competitiveness, with the growing role of competition at the enterprise level, where the main advantages are becoming more important than production costs, but the quality and originality of products. Thus, the joint efforts of the state and enterprises should actively use the innovative development area. If Ukraine successfully masters innovative models of development, it will have an opportunity not to remain an outsider of the European community and change the current raw material area of foreign trade development. The emphasis of the national innovation policy should

be on: the development and implementation of state scientific, technical and innovation programs; stimulation of investments in scientific research and their implementation; an increase of funding for scientific research; support of small and medium innovative enterprises; encouragement of import of advanced technologies; improvement of the legal framework; international cooperation on innovation policy; state coordination and information support; state control over the implementation of innovation policy.

Under the current conditions, Ukraine needs to intensify innovation processes that can ensure the proper development of the agricultural sector. With the lower solvency of the population, exports become a reliable source for innovation processes in the agricultural sector, thereby establishing a chain to increase the competitiveness of agricultural products. Thus, the size of exports will increase, and the domestic market will be replenished with much more diverse and high-quality agricultural products. Repeated innovation should ensure the continuity and scale-up of the innovation process. More competitive products in the foreign market will allow for obtaining a stable profit, which will contribute to the accumulation of capital for the expansion of production.

► Conclusions

Interaction of dairy market participants is based on commodity-money relations, including price characteristics of raw milk – dynamic fluctuations, quality standards, volumes and regional deviations.

The analysis of the production and financial statements of the Group of Companies "Milk Alliance" demonstrated that the decrease in the efficiency of the economic mechanism of dairy processing enterprises is explained by the following factors: increase of borrowed capital by enterprises (long-term and short-term bank loans) to finance current activities, respectively, and increase of financial expenses for servicing their obligations, which significantly reduces the net financial result; excess of the growth rate of net sales income compared to the growth rate of milk cost; decrease in coverage and quick liquidity indicators with simultaneous growth of absolute liquidity of the enterprise, which is associated with the development of unproductive assets; decrease in the level of financial stability of enterprises, indicators of autonomy and financial stability, coefficients of equity mobility and provision

with own working capital, which increases the dependence of enterprises on borrowed funds; decrease in the level of provision of enterprises with their own working capital and asset turnover, increase in the period of their turnover and increase in the operating cycle of enterprises; decrease in the level of business activity of enterprises by indicators of turnover of receivables and payables, turnover of assets and inventories, equity and borrowed capital.

Considering the above, the solution to the problem of improving the efficiency of the economic mechanism of functioning of dairy processing enterprises should emphasise the following areas that require further scientific study: optimisation of the structure of assets and liabilities of business entities and forecasting of receivables; introduction of a system for assessing the solvency and financial discipline of potential buyers; operational control over the efficiency of production costs to increase profitability.

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Зовнішня торгівля аграрними товарами України в контексті Угоди про асоціацію з Європейським Союзом

Габрієл Васильович Спаський

Інститут сільськогосподарської мікробіології та агропромислового виробництва НААН
14027, вул. Шевченка, 97, м. Чернігів, Україна

► **Анотація.** Зовнішня торгівля відіграє важливу роль в економіці України. Провідна роль агропромислового експорту для нашої країни набуває рівня національної, зокрема, продовольчої безпеки держави. Тому зміни в зовнішній торгівлі аграрною продукцією мають спиратися як на фундаментальні засади галузевого виробництва, так і на зсуви сучасної. Мета статті – встановити на основі аналізу тренди зовнішньої торгівлі та напрями поліпшення конкурентоспроможності аграрних товарів України з Європейським Союзом (ЄС) у контексті імплементації Угоди про асоціацію. Використано методи: аналізу і синтезу, аналітичних узагальнень – у процесі аналізу зовнішньої торгівлі аграрними товарами; табличний – для наочного відображення результатів дослідження; економіко- статистичний – для оцінки тенденцій розвитку зовнішньої торгівлі; абстрактно-логічний – при формуванні висновків. Проаналізовано обсяги, динаміку, структуру експорту та імпорту аграрними товарами України з країнами ЄС, надано оцінку змінам зовнішньоторговельного режиму, встановлено тренди і вплив імплементації Угоди про асоціацію між Україною та Європейським Союзом на розвиток зовнішньої торгівлі України. Досліджено місце і значення аграрного сектору на європейських ринках. Визначено зовнішньоторговельний обіг аграрних товарів України. Узагальнено алгоритм оцінки рівня конкурентоспроможності аграрних товарів. Встановлено, що за посилення експортної сировинної орієнтації на ринок ЄС продукції рослинництва, разом із тим зберігається висока імпортна залежність від готових продовольчих товарів, причому структура імпорту диверсифікованіша. Адаптація українського законодавства в частині сільського господарства, санітарні й фітосанітарні заходи незавершені й не відповідають запланованим темпам. Запропоновано шляхи диверсифікації експорту та підвищення прибутковості зовнішньої торгівлі аграрними товарами з України на ринку країн ЄС

► **Ключові слова:** сільське господарство, зовнішня торгівля, аграрні товари, експорт-імпорт, конкурентоспроможність, Угода про асоціацію між Україною та Європейським Союзом



UDC 657.1

Classification of Financial Instruments: Accounting and Control Aspect

Oľha Lukova*

National Scientific Centre "Institute of Agrarian Economics"
03127, 10 Heroiv Oborony Str., Kyiv, Ukraine

► **Abstract.** The global derivatives market is expanding rapidly. An important reason for the emergence and turnover of a significant number of financial instruments is the process of money saving. This process is the main one to influence the entire course of economic reproduction. An example of the implementation of the process of accumulation, movement, distribution and redistribution of monetary capital within and through the financial market is a variety of financial instruments. The purpose of the study – supplement the classification of financial instruments for accounting and its expert verification. In the course of the research the following set of methods was used: dialectical – for cognition of the substantive features and essence of financial instruments; analysis and synthesis – for studying the completeness of the classification of their types; induction and deduction – for deepening and supplementing the classification features of financial instruments; monographic – for systematising knowledge about the types of financial instruments, their identification as objects of accounting and reporting; systematisation - when filling the identified gaps in the grouping of financial instruments and developing a comprehensive classification of them for accounting and its expert verification. The study of individual types of financial instruments and existing methods of their grouping identified a significant number of options for classifying the latter. It is established that not all existing classification features should be used in accounting, as the current arsenal of accounts and reporting forms does not allow recording such detail. Therewith, some of the most common ways of grouping financial instruments leave some of their types outside the classification groups. To eliminate the identified shortcomings, it is proposed to supplement the classification of financial instruments with new features "by the profile of the enterprise" and "by the regularity of transactions with financial instruments". The classification of financial instruments has been improved, which differs from the known ones by the allocation of new classification features "by the profile of the enterprise" and "by the regularity of transactions with financial instruments", based on an in-depth analysis of the specific features of disclosure of information about them in the reporting and allows identifying potentially risky accounting transactions that require expert verification. It consists in identifying incomplete classification groups of financial instruments, their supplementation, and the development of new ones, which together are designed to establish a generalised accounting and reporting vision of the essence of financial assets, financial liabilities and equity instruments for their full coverage by the provisions of the accounting policies of enterprises.

► **Keywords:** accounting, classification, financial instruments, financial assets, financial liabilities, equity instruments, derivative financial instruments

► Introduction

An entity, having identified an accounting object as a financial instrument, must understand to which classification group it belongs. In Ukraine, the methodological principles of accounting measurement, classification and disclosure of information

about financial instruments are determined by the National Accounting Standard 13 "Financial Instruments" (NAS 13). There are several such documents in international practice: IFRS 7 "Financial Instruments: Disclosures" (IFRS 7), IFRS 9 "Financial

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*Corresponding author

Instruments" (IFRS 9), IAS 32 "Financial Instruments: Presentation" (IAS 32), IAS 39 "Financial Instruments: Recognition and Measurement" (IAS 39).

Comparing how national and international standards classify financial instruments, it becomes apparent that there is only one difference. Namely: IAS 32 divides financial instruments into financial assets, financial liabilities and equity instruments, while PAS 13, in addition to the above, distinguishes derivative financial instruments.

However, if to consider the options for the distribution of financial instruments, which are offered by scientists, representatives of international consulting structures, and used by enterprises in practice, then by definition, such a classification is incomplete. In addition, the proposed options are often complex and impractical for use in the accounting system. No less important is the problem of considering the control aspect when the accounting of financial instruments is considered one of the most difficult for enterprises, in particular non-core ones.

For the most part, the consideration of accounting issues of financial instruments in scientific publications is based on the analysis of the requirements of IFRS 7, IFRS 9, IAS 39, IAS 32 and P (C) BU 13. As a rule, scientists compare their provisions, and critically evaluate the targeting of these standards, sometimes, their content is disclosed in an arbitrary form. Therewith, deeper research is being conducted. In particular, Professor N.O. Lokhanova proposed approaches to the identification and classification of financial instruments and identified elements of an accounting policy that specifically relate to such accounting objects [1, p. 21]. In their studies, O.M. Petruk, O.S. Novak and T.S. Osadcha improved the classification of derivative financial instruments, which distinguished the concepts of derivative financial instruments, derivative securities, and derivatives, which established the prerequisites for their appropriate accounting reflection [2].

Therewith, the complexity of accounting and procedures for reflecting financial instruments in the financial statements necessitates the search for a comprehensive classification of such objects, in particular, considering industry specifics, for accounting and its expert verification.

The purpose of the study – supplement the classification of financial instruments for accounting and its expert verification.

► Materials and Methods

In the process of studying this problem, the following methods were used: dialectical – for cognition of the substantive features and essence of financial instruments, analysis and synthesis – for studying the completeness of the classification of their types, induction and deduction – for deepening and supplementing the classification features of financial instruments, monographic – for systematising knowledge about the types of financial instruments, their identification as objects of accounting and reporting, systematisation – when filling the identified gaps in the grouping of financial instruments and developing a comprehensive classification of them for accounting and its expert verification.

► Results and Discussion

According to the regulations, financial instruments include only contracts that result in liability for one party to the contract and an asset for the other party. The non-contractual liabilities, namely: debt to the budget and compulsory pension and social insurance funds, operating lease, are not included in this category.

Thus, financial assets include all available cash, cash receivables from customers, suppliers, investments and securities. According to the definition proposed in PAS 13, financial assets in the accounting system are presented in the first and third classes, namely:

- account 14 "Long-term financial investments";
- account 18 "Long-term receivables and other non-current assets";
- account 30 "Cash";
- account 31 "Bank accounts";
- account 33 "Other funds";
- account 34 "Short-term promissory notes received";
- account 35 "Current financial investments";
- account 36 "Settlements with buyers and customers";
- account 37 "Settlements with various debtors".

Therewith, it should be understood that not all sub-accounts of the above accounts are intended to reflect financial assets. Thus, if in the future it is expected to receive goods, fixed assets, intangible assets, works or services, but not cash or other financial assets, such debt is a commodity and cannot be recognised as a financial asset.

By NAS 13, a financial liability is a contract under which one party to the contract has a claim on the financial assets of the other party to the contract. In accounting, such a contractual obligation includes: accounts payable, which is recorded on account 61 "Current debt on long-term liabilities", account 63 "Settlements with suppliers and contractors", account 68 "Settlements on other transactions", liabilities on borrowed funds, which are recorded on account 50 "Long-term loans", account 60 "Short-term borrowings", account 61 "Current liabilities on long-term liabilities", liabilities on debt securities, which are accounted for in account 51 "Long-term promissory notes issued", account 52 "Long-term bond liabilities", account 62 "Short-term promissory notes issued", other financial liabilities (account 53 "Long-term lease liabilities", account 55 "Other long-term liabilities", account 67 "Settlements with participants").

Therewith, financial liabilities may not include accounts payable and liabilities that are of a commodity nature and do not involve the payment of cash or transfer of another financial asset.

As for the presentation in the accounting system of the third type of financial instruments - equity instruments, the situation is somewhat different compared to financial assets and financial liabilities. On the one hand, it is more complicated, which is due to the widespread practice of working with such accounting objects. On the other hand, it is simpler as the set of accounts is much smaller. Usually, this is account 40 "Registered (share) capital".

But it is not always the case that the objects recorded on account 40 "Registered (share) capital" are equity instruments. It follows from the provisions of national and international standards that the equity instrument has a contractual nature and embodies the right to a share in the assets of the enterprise after deducting the number of its liabilities. According to the classification of this type of financial instruments given in PAS 13, they include: ordinary shares, shares, other types of equity.

Part 7 of Art. 9 of the Law "On Capital Markets and Organised Commodity Markets" states that "ordinary shares give their owners the right to receive part of the profit of the joint stock company in the form of dividends, to participate in the management of the joint stock company, to receive part of the property of the joint stock company in case of

its liquidation and other rights provided by the law governing the establishment, operation and termination of joint stock companies" [3]. Such a security is not convertible into another and does not contain any guarantees of payment of income to its holder, i.e. there is no right to demand early repayment. Such financial instruments are called equity instruments.

In addition, an example of an equity instrument is a bond, which is usually a debt instrument and is classified as a financial liability when it is convertible into shares. In both the first and second examples, such securities do not impose an obligation on the entity to contribute specific amounts or transfer another type of financial asset. This obligation will arise only upon the distribution of profits and payment of dividends and will be equal to the amount fixed in the relevant administrative document of the enterprise.

Thus, another criterion for the classification of financial instruments is "by the type of liability arising". According to this feature, financial instruments are classified as debt or equity. This division is covered in their publications by V.S. Ambarchian [4], Ya.B. Dro-pa [5], Yu.M. Kovalenko [6], Yu.I. Kholod [7] and others.

Such distribution of financial instruments is logical but does not cover all their types, ignoring, in particular, some financial assets (for example, cash, and money in bank accounts). Considering the above, it is advisable to supplement this classification group with another one – "Debt-free (accompanying)", which includes cash, cash equivalents, and bank accounts. These financial assets are not legally binding, but they serve as an instrument to settle a past obligation. Thus, according to the type of liabilities arising, financial instruments should be divided into three classification groups - equity, debt and debt-free (accompanying).

By their nature (depending on the subject of the contract) financial instruments are divided into primary and secondary (derivatives). The regulatory and methodological documents do not have a precise interpretation of the content of the mentioned groups of financial instruments. However, scientists offer their definitions.

Thus, primary financial instruments are those "which with confidence provide for the purchase and sale or delivery-obtaining of a financial asset, resulting in mutual financial claims" [8, p. 129]. They in-

clude equity instruments, financial liabilities and financial assets. For example, shares, bonds, bills, bank certificates, accounts payable and receivable, etc.

Secondary financial instruments “provide for the possibility of buying and selling the right to purchase and supply the underlying asset or receiving-paying income associated with a change in some characteristic of this asset” [8, p. 133]. These include options, options, swaps, forwards, futures, depositary receipts, etc. Derivatives are based on the underlying financial instruments. Their value is determined based on the value of the underlying asset.

The role of the underlying asset can be played by the primary financial instrument – foreign currency, accounts payable, securities, etc., assets - agricultural products, shares, real estate, etc. Therewith, such a group of financial instruments can be traded both on the stock market (for example, futures contracts) and outside it (for example, forward contracts).

When analysing the professional literature and Internet resources [9, 10], there is a division of financial instruments by the period of circulation. The study of the essence of this feature demonstrates that it is inherent only in some types of financial liabilities, equity instruments and, to a greater extent, derivative financial instruments. In particular, it is about futures and forward contracts, options, and debt securities. Using financial instruments is intended to balance the surplus or shortage of monetary resources in different sectors of the economy. Enterprises can choose various forms of investment, and the duration – short-term or long-term period. Therefore, along with the listed methods of classification of financial instruments for accounting purposes, the period (term, duration) of their validity is important. Therefore, according to the period of turnover, financial instruments are divided into short-term (current) financial instruments and long-term financial instruments.

Short-term financial instruments are those with a life cycle not exceeding twelve months from the date of recognition (balance sheet) to the maturity date. Long-term financial instruments are those with a maturity of more than one year.

In addition, the scientific and professional literature considers a separate group of financial instruments that have a life cycle of one to five years. It is called medium-term financial instruments.

However, such classification for accounting purposes is not particularly relevant as it cannot be separated in the accounting and reporting system (in particular, in the Statement of financial position), as the above financial instruments will be reflected in non-current financial instruments.

Therewith, among financial instruments, there are financial assets, financial liabilities and equity instruments for which there is no specific “expiration date”. For example, cash and funds in bank accounts have no expiration date. In addition, not all shares are necessarily redeemed within a specific period or have an expiration date. It is advisable to separate such financial instruments into a separate group and call them “perpetual”, as they have no maturity.

In addition to the above positions on the classification of financial instruments, economic scientists concentrate on such a classification feature as “risk level”. Usually, this feature is applied to debt securities and derivative financial instruments, but not only to them. According to the risk level, financial instruments are divided into the following classification groups: risk-free (relatively risk-free), low-risk, and high-risk. Risk-free (relatively risk-free) are financial instruments with a minimum level of risk, which is close to zero. Examples of such financial instruments are cash on hand, precious metals, and domestic government bonds (there is a guarantee from the state to repay the obligation on the security).

Low-risk financial instruments are financial instruments that are characterised by insignificantly higher risk than risk-free ones. To this group can be attributed funds on the current account, deposits in the bank, checks and bills issued by reliable (systemically important) banks, and shares of financially active and reliable enterprises, which are called “blue chips”.

High-risk – are financial instruments that are characterised by a significant risk of non-performance and often high returns. These are shares of second and third-tier companies, shares of venture funds, high-yield bonds, futures contracts, and options.

The system of accounting accounts and the form of the balance sheet do not allow for presenting information on the allocated groups of financial assets, financial liabilities, and equity instruments in a full and detailed manner. However, such disclosures may be included in the notes to the financial statements, including an explanation of the judgments

made and the measurement bases used to measure those assets, liabilities or equity.

In addition, it is advisable to provide such a division in non-financial reporting, in particular, the management report. It is necessary to ensure a fuller understanding of the users of reporting data about the probable risks of non-receipt (shortfall) of income, possible losses and ways to prevent them, which the company uses or plans to use if necessary. To disclose such information, the Methodological Recommendations on the preparation of the management report provide for a separate section "Risks" [11].

The vast majority of publications of accounting scientists [12, 13, 1], specialists of international audit and consulting structures [14, 15], which are to some extent related to the problem of classification of financial instruments, cover the issue of valuation of these accounting objects [16, 17]. By international rules, in particular IFRS 9, a distinction is made between initial and subsequent measurement of financial instruments. As for the initial measurement (i.e., measurement at the date of recognition of the accounting object) of financial assets, financial liabilities and equity instruments, it is always at fair value (plus or minus (depending on the type of financial instrument) immediately attributable costs).

In the national specialised UAS, the initial measurement is performed at actual cost, which, according to the standard, corresponds to the method of measurement under IFRS 9. Therefore, there are no questions regarding the classification of financial instruments on this basis. They appear and are related to the subsequent assessment, more precisely the features and variability of its application.

The international rules lay the foundation for the choice of further evaluation of financial instruments based on the business model chosen by the company (the concept of "strategy" is used, but IFRS 9 operates with the concept of "business model") – indicative (expected, planned) actions for a specific financial instrument in the future and the way of generating funds by such a group of objects. The business model determines the "key management personnel of the enterprise" [17, p. 17]. Such personnel may include both the financial officer and the chief accountant of the enterprise; thus, they should be oriented on the specifics of the contracts that a particular component of a financial instrument pro-

duces in the enterprise and provide recommendations on the choice of a business model.

According to international rules, there can be three such models for financial assets:

- 1) receipt of contractual cash flows – involves holding a financial asset to maturity,
- 2) to receive contractual cash flows or to sell – involves holding a financial asset to maturity and selling it,
- 3) receipt of cash flows through sale – involves holding a financial asset for sale.

Depending on which of the above business models an entity chooses, the following valuation options for financial assets are possible. If an entity elects the first model, such assets are measured at amortised cost at the balance sheet date. In other cases, fair value measurement will be applied:

- for the second business model – at fair value through other comprehensive income,
- for the third business model – at fair value through profit or loss.

Thus, financial assets for their further measurement under IFRS 9 can be divided into three classification groups:

- 1) those measured at the balance sheet date at amortised cost,
- those measured at the balance sheet date at fair value through profit or loss (P/L),
- 2) those measured at the balance sheet date at fair value through other comprehensive income (OCI).

As for financial liabilities, according to Section 4.2.1 of IFRS 9, two classification groups can be distinguished:

- 1) those measured at the balance sheet date at amortised cost,
- 2) those measured at the balance sheet date at fair value through profit or loss.

Research and analysis of the features used, in particular, in accounting for the classification of financial instruments have demonstrated that several characteristics (features) that affect the accounting and reporting presentation of these objects, indicate the likelihood of data distortion and require additional control (verification) measures remain unattended. In particular, it is about such features as the profile of the company and the regularity of transactions with financial instruments (Fig. 1).

According to the first feature, financial instruments should be divided into financial instruments of

core enterprises (institutions, organisations) and financial instruments of non-core enterprises (institutions, organisations). This feature is necessary to understand how transactions with financial instruments affect the

activities of the entity and will be disclosed in the financial statements, in particular in Form 2 “Statement of Financial Performance (Statement of Comprehensive Income)” and Form 3 “Statement of Cash Flows”.

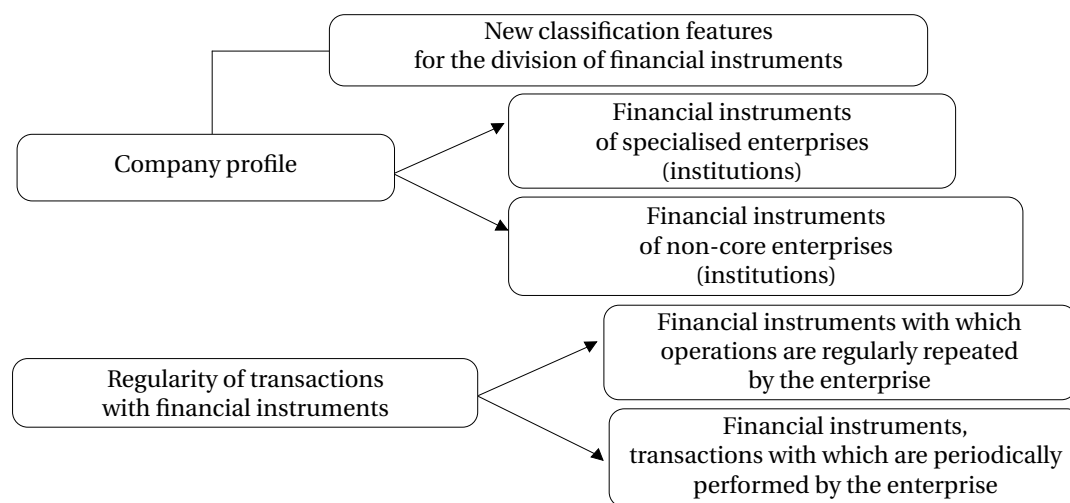


Figure 1. Supplemented classification of financial instruments for the purposes of accounting and its expert verification

Source: : Developed by the author

Thus, if the company specialises in financial activities, and the financial instruments themselves act as a commodity for it, then such activity for the company is operational (main). Accordingly, gains and losses resulting from transactions involving financial instruments will be recognised in the statement of income and cash flows as a component of operating activities. If financial instruments are non-core for the company (for example, for agricultural enterprises), i.e., the company uses them in the ordinary course of business and does not concentrate on them as the main sources of income, then such transactions should be divided between operating and financial activities and disclosed accordingly in Forms 2 and 3 of the company's financial statements.

Since the financial market of Ukraine is at the initial stage of development, for most accountants (especially in the agricultural sector), financial instruments inherent in it have not become a common object of accounting. Their specificity is complex in content and significant in the volume of international and national regulations, which increases the probability of making unintentional mistakes by accounting officers. Thus, the less the company performs economic operations with a particular type of financial instruments, the less

often the accounting department faces the possibility of their recognition, classification, valuation, etc. Therefore, financial instruments with which transactions are regularly repeated by the enterprise are the objects of accounting to which the standard approach is applied. It increases the likelihood of their reliable accounting and reporting presentation. And vice versa, if financial instruments, transactions with which are periodically (infrequently) performed by the company, are available in the company's statements, then such information may be erroneous and requires more attention from the responsible person of the accounting service and additional verification.

► Conclusions

The variety of accounting objects, which are united by the concept of “financial instruments”, determines a significant number of options for their classification. Therewith, not all possible classifications are necessary for accounting reflection of such (for example, medium-term).

Therewith, a separate division of financial instruments (classification by the period of turnover and by the type of liabilities arising) excludes some of their types – cash, funds on accounts, etc. To develop a comprehensive classification of financial

instruments for accounting and its expert verification, it is advisable to distinguish such features as “by the profile of the enterprise” and “by the regularity of transactions with financial instruments”.

Their application is of a controlled nature and will allow assessing the probability of distortion of accounting and reporting data and the necessity for additional verification measures.

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Класифікація фінансових інструментів: обліково-контрольний аспект

Ольга Степанівна Лукова

Національний науковий центр «Інститут аграрної економіки»
03127, вул. Героїв Оборони, 10, м. Київ, Україна

► **Анотація.** Світовий ринок похідних фінансових інструментів стрімко розширюється. Важливою причиною виникнення та обороту значної кількості фінансових інструментів є процес грошового заощадження. Цей процес є головним для впливу на увесь хід економічного відтворення. Прикладом реалізації процесу нагромадження, руху, розподілу та перерозподілу грошового капіталу в межах та за допомогою фінансового ринку є найрізноманітніші фінансові інструменти. Мета статті – доповнити класифікацію фінансових інструментів для цілей бухгалтерського обліку та його експертної верифікації. У процесі дослідження використано такий набір методів: діалектичний – при пізнанні змістовних ознак і сутності фінансових інструментів; аналізу і синтезу – при дослідженні повноти класифікації їх видів; індукції й дедукції – щодо поглиблення та доповнення класифікаційних ознак фінансових інструментів; монографічний – при систематизації знань про види фінансових інструментів, їх ідентифікацію як об'єктів обліку і звітності; систематизації – під час заповнення виявлених прогалин у групуванні фінансових інструментів та побудові комплексної їх класифікації для цілей бухгалтерського обліку та його експертної верифікації. Виявлено при вивченні окремих видів фінансових інструментів та наявних способів їх групування значну кількість варіантів класифікації останніх. Встановлено, що не всі існуючі класифікаційні ознаки доцільно застосовувати в обліку, оскільки чинний арсенал рахунків та звітних форм не дозволяє зафіксувати таку деталізацію. Водночас частина найбільш поширених способів групування фінансових інструментів залишають поза класифікаційними групами окремі їх види. Для усунення виявлених недоліків пропонується доповнити класифікацію фінансових інструментів новими ознаками «за профілем підприємства» та «за регулярністю операцій з фінансовими інструментами». Удосконалено класифікацію фінансових інструментів, яка відрізняється від відомих виділенням нових класифікаційних ознак «за профілем підприємства» та «за регулярністю операцій з фінансовими інструментами», що базується на глибокому аналізі особливостей розкриття інформації про них у звітності та дозволяє означити потенційно ризикові облікові операції, які потребують експертної верифікації. Полягає у виявленні неповних класифікаційних груп фінансових інструментів, їх доповненні, а також формуванні нових, що в комплексі спрямовано на побудову узагальненого обліково-звітного бачення сутності фінансових активів, фінансових зобов'язань та інструментів власного капіталу для їхнього повного охоплення положеннями облікової політики підприємств

► **Ключові слова:** бухгалтерський облік, класифікація, фінансові інструменти, фінансові активи, фінансові зобов'язання, інструменти власного капіталу, похідні фінансові інструменти



UDC 339.5

Ways to Increase Profits from the Export of Ukrainian Corn on the World Market

Denys Lialko*

National Scientific Centre "Institute of Agrarian Economics"
03127, 10 Heroiv Oborony Str., Kyiv, Ukraine

► **Abstract.** Currently, there is a stable specialisation in the world grain market: production is concentrated in developed countries, and many developing countries are unable to solve their grain problems and are forced to go for large-scale imports. Ukraine is one of the key exporters to the foreign market of such grain crops as wheat, corn and barley, their production in the country significantly exceeds domestic consumption. The purpose of the study – perform a comprehensive analysis of the world corn market and determine the main areas of development of the domestic corn market. In the course of the study the following methods were used: abstract-logical – for developing conclusions; monographic – for detailing the functioning of the corn market; comparative analysis and dynamics series – for comparing indicators and identifying trends in their change over time; statistical – for analysing supply and demand in the corn market; graphical – for identifying and illustrating trends in the studied economic phenomena; economic and mathematical methods – for determining economic indicators that affect the supply and demand of corn. The author's opinion on the modern process of development of foreign trade in corn grain in Ukraine is presented. The main problematic issues of a further increase in corn exports were identified and the areas of mutually beneficial cooperation in the future, which will provide economic benefits to Ukrainian producers, were substantiated. The areas of development of Ukrainian corn export and mutually beneficial cooperation in the agricultural sector of the economy were proposed. These areas of market development can be used by public authorities to improve production efficiency and maximise profits from trade

► **Keywords:** agrarian economy, free trade area, international integration, food, agriculture, forecast, market, development

► Introduction

The role of international trade is constantly growing in the global economy. The main factor of this growth is globalisation processes, the satisfaction of consumer requirements and profit for the business.

Each state is interested in the business to receive high profits and generate taxes for the state treasury. As a result, competition in sales markets is increasing every year and it is becoming more difficult for companies to sell their products. In Ukraine, the agricultural sector is recognised as one of the main areas of trade, where grain is of primary importance.

To export grain products efficiently and rationally, it is necessary to analyse and systematise current trends in foreign trade. In addition, it is important to forecast the vectors of trade and economic cooperation between countries using various information processing and modelling tools.

Regarding the problems of demand for Ukrainian corn on the world market, the developments of Ukrainian scientists are known, in particular: O. Bilorus [1], O. Zakharchuk [2], T. Zinchuk [3], M. Ilchuk [4], S. Kvasha [5], I. Kyrylenko [6], A. Kliuchnyk [7],

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*Corresponding author

Yu. Lupenko [8], S. Melnyk [9], P. Sabluk [10], L. Strashynska [11] and others. In addition, foreign scientists paid attention to this subject: M. Li, J. Reimer [12].

The purpose of the study – perform a comprehensive analysis of the world corn market and determine the main areas of development of the domestic corn market.

► Results and Discussion

Currently, Ukraine has significantly increased the production of grain crops. It is evidenced by the current statistics, according to which Ukraine is among the leading corn-exporting countries in the world.

In recent years, the Ukrainian market has been saturated with food due to food imports. According to experts, a significant share of the growing domestic demand for meat and meat products is provided by imports, which is considered to be a nominal growth rate, outpacing the increase in exports of these food products. The reduction in the production of domestic entrepreneurs is compensated by imports of not always high-quality, but cheaper products. Therewith, domestic consumer demand for such products is growing faster than domestic producers can provide them. Therewith, a significant share of imports comes from the countries of the European Union.

Among the main reasons for the adverse dominance of imports over exports are the low competitiveness of domestic products, the requirements for harmonisation of national standards of quality and food safety with international provisions and standards, the quota of national exports to the European market, which becomes a deterrent to the development of food production. As a positive development of the food market, it should be noted the possibility of

saturation of the domestic market with relevant products and the search for new markets in Asia and Africa. In recent years, the dynamics of sales of domestic producers in the domestic market demonstrates an upward trend. Currently, Ukraine can export to only a limited number of countries, as the EU countries protect their markets, the Russian market is closed for domestic producers, and the search for markets in the Asian region and Africa is associated with some difficulties. Therewith, Ukraine's accession to the WTO contributed to greater openness of the domestic market to imports, which significantly increased competition in the market. However, there is an improvement in investment activity, intensification of work of domestic enterprises to increase the competitiveness of products, and the efficiency of combating unfair competitive actions of foreign companies is growing.

Corn by definition – the third most important feed grain in Ukraine. The planted area has increased despite the existing obstacles: outdated and inadequate harvesting equipment, high production costs (in particular, post-harvest drying costs) and theft. The main production region is eastern and southern Ukraine, although rainfall in some areas in the far south is currently too low to support corn production. Corn is usually sown in late April or early May. Harvesting begins in late September and usually comes to an end in early November. Only 25 to 50% of the total area of corn is harvested for grain, the rest is allocated for silage, which is harvested in August. Since corn is used mainly for feeding poultry and pigs, the expansion of the area under the crop is justified, as food production and consumption have increased. It is confirmed by the dynamics of changes in corn acreage in the regions of Ukraine (Fig. 1, 2).

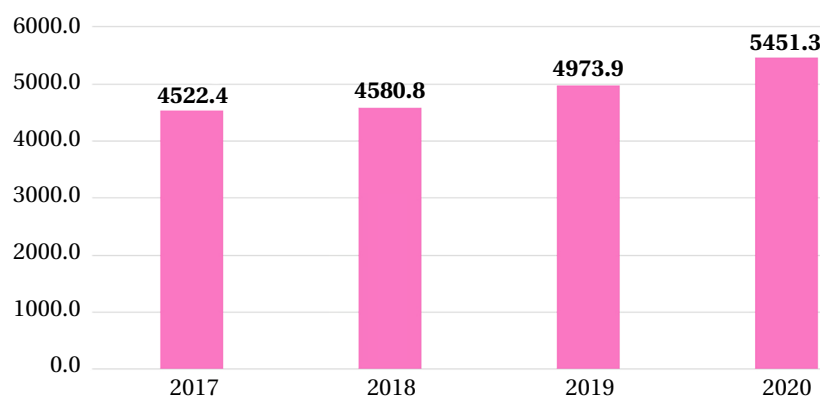


Figure 1. Dynamics of corn acreage in Ukraine in 2017-2020, thousand hectares

Source: [13]

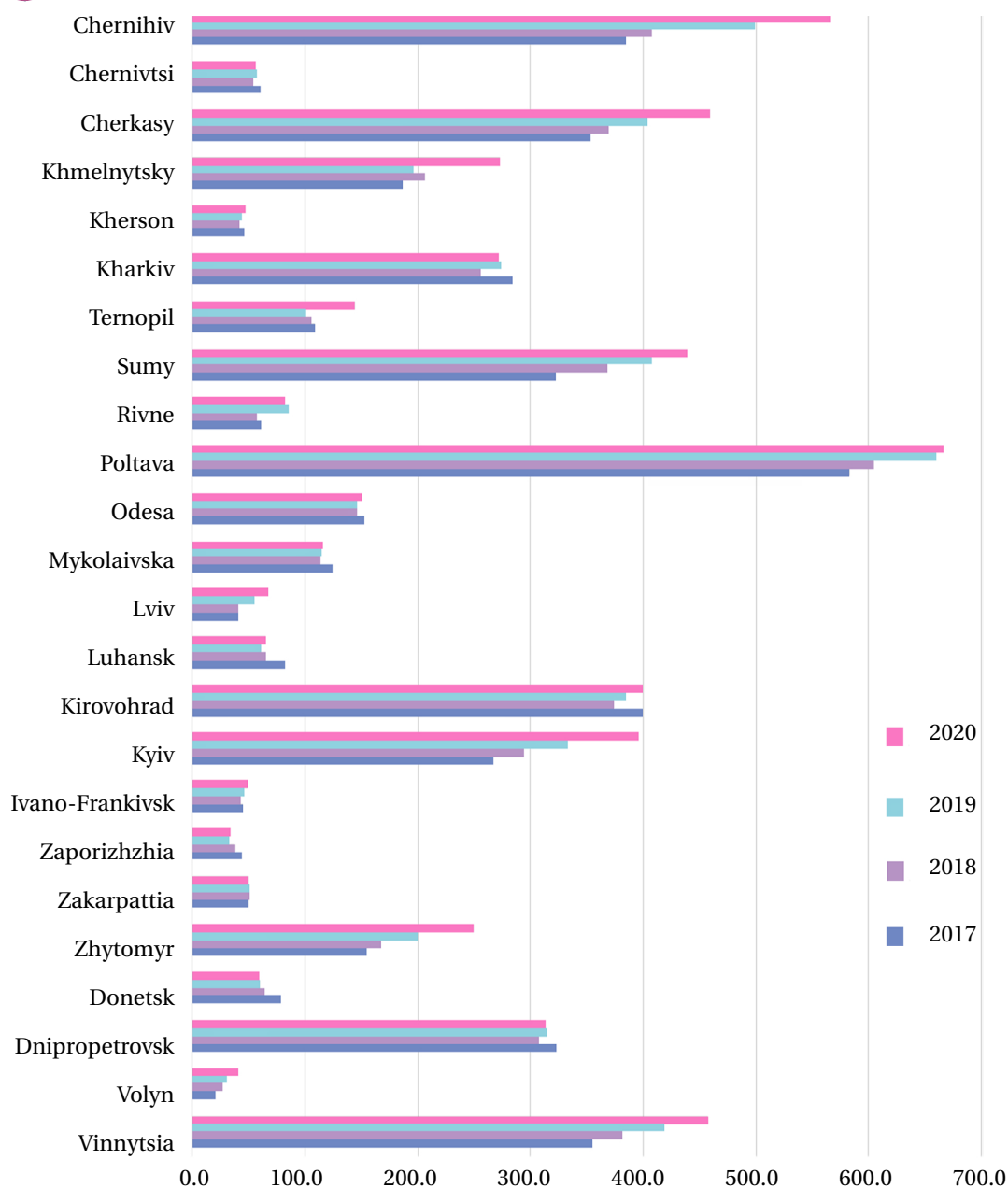


Figure 2. Dynamics of corn acreage by regions of Ukraine for 2017-2020, thsd ha

Source: [13]

According to the analysis of the growth rate of corn acreage by regions of Ukraine, it is the highest in five regions: Volyn (+100.5%), Lviv (+66%), Zhytomyr (+61.7%), Kyiv (+48.2%), Chernihiv (+47.5%) (Table).

The world corn market in 2019 reached a volume of 1118 million metric tons. The corn market is expected to grow at a CAGR of 5.3% between 2020 and 2025, reaching nearly 1524 million metric tons by 2025. Among the main producing countries are the USA, China and Brazil, with the USA accounting for almost 36% of world production. In addition, the latter is responsible for more than 36% of world exports, followed by Brazil, Argentina,

Ukraine and Russia as the next major exporters of the crop among others [14]. The presented dynamics of growth of sown areas under corn confirms the leadership of Ukraine in the list of the world's largest exporting countries of this crop.

Corn as a crop is characterised by high biological adaptability but by specific requirements for growing conditions. The growth rate, development of its plants and, as a result, the yield depends upon these conditions. Corn is a light and heat-loving crop, belongs to plants of short daylight hours, and requires intensive lighting for 12-14 hours a day. Shading (by weeds or thickening), especially in the first phases of

vegetation, dramatically reduces the yield. The period when corn can actively develop and synthesise

organic matter is limited by the terms of stable transition of the average daily temperature above +10°C.

Table. Dynamics of changes in corn acreage by regions of Ukraine

Administrative-territorial unit	2017	2018	2019	2020	Growth rate, %
Ukraine	4522.4	4580.8	4973.9	5451.3	20.5
Vinnitsia	354.6	381.3	418.9	456.9	28.8
Volyn	20.6	26.9	30.5	41.3	100.5
Dnipropetrovsk	323.0	307.6	314.4	313.0	-3.1
Donetsk	78.2	64.2	60.3	59.0	-24.6
Zhytomyr	154.1	167.4	199.8	249.2	61.7
Zakarpattia	50.3	51.3	51.3	50.4	0.2
Zaporizhzhia	43.5	37.5	32.9	33.8	-22.3
Ivano-Frankivsk	44.5	42.7	46.0	48.5	9.0
Kyiv	267.0	294.0	332.9	395.6	48.2
Kirovohrad	399.1	373.9	384.1	399.3	0.1
Luhansk	82.3	64.9	61.0	65.0	-21.0
Lviv	40.4	40.4	54.9	67.1	66.1
Mikolaivska	124.0	113.5	114.8	116.2	-6.3
Odesa	152.4	146.3	146.5	150.0	-1.6
Poltava	583.5	604.1	660.1	666.0	14.1
Rivne	61.0	57.1	85.8	82.4	35.1
Sumy	322.1	368.1	407.3	439.3	36.4
Ternopil	108.9	105.3	100.1	144.4	32.6
Kharkiv	283.9	255.8	273.9	272.1	-4.2
Kherson	45.6	41.5	44.0	47.1	3.3
Khmelnitsky	186.5	205.8	195.5	272.6	46.2
Cherkasy	353.1	369.3	403.3	459.8	30.2
Chernivtsi	59.9	54.0	56.6	56.1	-6.3
Chernihiv	383.9	407.9	499.0	566.2	47.5

Source: [13]

Corn is a drought-resistant crop that uses soil moisture sparingly, spending about 250-400 units of water per unit of dry weight, which is half as much as wheat, barley and oats, which require 600-800 units. Therewith, corn consumes much more water than other crops, as it has a long growing season and develops a powerful above-ground mass.

Market analysts note that Ukraine is gradually reorienting the structure of grain production in the field of corn, as this crop has a high yield, is resistant to weather conditions and is in demand in international markets. Currently, corn production accounts for more than 50% of the total grain production in the country, and this figure has been growing gradually over the past 20 years. Farmers will not refuse to grow the crop in the future, despite the difficulties that arise. Notably, the profitability of corn cultivation is the highest among all grain crops in Ukraine.

In 2019, the area of corn in Ukraine reached 4.97 million hectares, which is 8.6% more than in

2018. Steady tendencies to increase the area of the crop are observed in all recent years [15, 16].

However, it should be remembered that corn cultivation can cause several environmental problems. The biggest environmental problem when growing corn – the danger of soil erosion. Erosion can be caused by the following factors: corn depletes and impoverishes the soil of organic matter, corn is sown with wide row spacing and low planting density, row closure occurs later than in other crops, and therefore the leaf cover of the soil is weaker, which reduces the penetration of nutrients into the soil, corn is very demanding on nitrogen and responds well to organic matter, in particular to liquid manure, but manure often contains harmful impurities in the form of herbicides, insecticides and zoocides, which can be applied to the surface of the soil. All this together with manure subsequently gets into the soil.

To avoid problems with the environment and yields, it is necessary to rotate corn with other crops.

The tendency to increase the share of corn cultivation among other crops should not reach a critical point, as this may adversely affect the soils in Ukraine and the harvest of Ukrainian farmers. Thus, by definition, the main challenges of growing corn as one of the most profitable and promising export items in Ukraine are weather conditions (humidity and low temperatures) and the rotation of corn with other crops.

Significant markets for corn consumption are the United States, China, the European Union, Mexico and Brazil. This growing demand in these regions is supported by end-use sectors such as animal feed and corn starch markets. The United States and China are among the largest consumers with a significant presence in their territories of most end-use sectors. The countries relying on imports are Mexico, Japan, South Korea, the European Union and Egypt. Growth in demand for corn in the United States due to the strengthening of the feed and industrial sectors. The dominant sector of application in the region is animal feed, followed by ethanol production. Growing corn starch processing industries are driving the demand for corn in China, as it is recognised as a key player in corn starch production [14].

The world corn market is moving towards the increasing use of this crop in the end-use industries. Among them is the production of corn starch. They are developing rapidly, especially the latter. Corn starch is used, in particular, in the production of food ingredients, paper, ethanol and sweeteners. Significant volumes of it are used for the production of animal feed. The growing market demand for all these products gives a boost to the overall corn market. With the high demand for animal feed and ethanol, there is a necessity to increase yields. After all, corn is used for the production of biofuels due to its starch content, which is easily converted into ethanol.

The rapidly growing demand for the product in the US and China is mainly driven by the increasing use of the crop in end-use industries. Thus, the US is known as an important confectionery market, which contributes to the growth of the corn market, as corn starch is used in the production of sorbitol and sweeteners. With the demand for significant volumes of sorbitol, which is the end-use segment, the corn market is growing. Considering its low-calorie content, sorbitol is widely used by people who care about their health. In addition, it is present in personal care products and pharmaceuticals.

The corn market is determined by easy availability and low production cost of the product. Favourable government policies and increasing flows for pharmaceuticals, and personal care products have contributed to its growth, especially in the Asia Pacific region. Here, the main markets for this product are India and China [17].

Corn occupies a leading position in modern agriculture due to its wide use and high yield. It is a high-energy feed, even compared to such crops as wheat, barley and oats. Corn is suitable for feeding all kinds of animals and poultry. In addition, with rising energy prices, there is growing interest in using corn grain as the cheapest raw material for bioethanol production. Therefore, it is quite logical that in 2019, world producers allocated 192 million hectares of sown areas for this crop, which is 3 million more than in 2018 [18, 19].

According to the US Department of Agriculture (USDA), the leaders in corn production are the United States, China and Brazil, which account for 48% of the world's corn area. The US is in this position due to the high yield of 10.5 t/ha last year. In general, American farmers harvested 347 million tons of grain in an area of 33.1 million hectares, which is about 33% of world production.

China ranks second, given the significant area under crops. In 2019, Chinese farmers harvested 254 million tons of grain in an area of 41 million hectares. In Brazil, 18.1 million hectares were allocated for corn and 101 million tons of grain were harvested.

Ukraine ranked sixth in the world corn production in 2019, while in terms of sown areas – ninth, with 4.9 million hectares. As an export-oriented crop, it is strategically important for the development of agricultural production in Ukraine. In 2019, Ukrainian farmers received 35.5 million tons of grain. For comparison, in 2017 the harvest was 24.7 million tons. Such indicators were achieved with an increase in corn yield from 5.4 t/ha in 2018 to 7.2 t/ha in 2019.

Corn exports in 2018/19 MY amounted to 29.822 mln tonnes, according to the State Statistics Service, exports in 2017 – were 19.4 mln tonnes, while in 2008 – only 2.8 mln tonnes. Thus, corn exporters have increased their turnover almost 8 times over the past decade. Import of corn to Ukraine is performed in insignificant volumes. In 2018 – at the level of 37 thousand tons [13]. The deficit of corn on the world market results in its outflow from the Ukrainian

market and, as a consequence, in the growth of the price of this crop, in the increase in the cost of feed, and subsequently – meat, milk, eggs and other livestock and poultry products. The authorities must understand that livestock breeding and processing are industries that produce added value and bear the social burden along with the state: they provide jobs in rural areas and develop the tax base for newly established communities. However, the reduction of cattle and pigs has become a threatening trend: in recent years, the number of livestock has decreased by 5-6.5% annually. Currently, it is essential to support the livestock industry and processors, as this issue relates specifically to the food security of Ukraine and selling prices for socially important products.

Among the steps to overcome the threat are the following: the state, as a regulator, restricts the export of corn, thereby leaving part of it for the production of mixed fodder in the domestic market, keeping the balance of demand, the state, represented by the State Reserve, sells corn exclusively to feed enterprises, livestock and poultry complexes, the state supports the industry with targeted funds from the budget.

By adopting the Law of Ukraine “On Grain and the Grain Market in Ukraine” in 2002, the state identified the priority of grain production and undertook to promote the development and stable functioning of its market. The defined principles of the national policy on regulation of the grain market are, first of all, the provision of priority budgetary, credit and investment support to the subjects of pledged grain purchases and intervention operations, ensuring the domestic demands of the state in food, seed, fodder, technical grain and measures to increase its exports, establishment of a minimum guaranteed price for pledged grain, prevention of restrictions on the movement of grain and its products, control over the quality of grain and its safety [20, 21].

► Conclusions

Further development of the industry requires a thorough economic assessment, and revision

of several positions on technical, technological, organisational, economic and market conditions of the entire complex. The priority steps in solving the grain problem are achieving a balance of supply and demand, improving state regulation and mechanisms to support production, ensuring a balanced pricing policy, increasing export potential, developing appropriate infrastructure of the grain market, etc. Therewith, it is necessary to consider the environmental problems that may arise due to improper management of corn cultivation. It is essential to rotate it with other crops so that the soil is not depleted and the yield is as high as possible in the long term. It is necessary to conduct information campaigns to bring this information to Ukrainian farmers and companies. In addition, the state regulation of this issue is to establish the provisions of crop rotation at the legislative level, which will guarantee the preservation of fertility and quality of Ukrainian soils.

Currently, the infrastructure of the grain market in Ukraine is developed – a network of exchanges, agro-trading houses, and wholesale food markets are being established, but the level of their functioning is far from desirable. At the regional level, such structures exist mostly formally, and producers continue to sell products to intermediaries. Less than half of the agro-trading houses, service cooperatives, and procurement points are working, and the product content of these market infrastructure facilities, and accordingly their impact on pricing, is quite insignificant. Less than 1% of grain is sold by producers through exchanges and the bulk of products is sold through commercial intermediaries who control export, wholesale and small wholesale commodity flows and dictates their prices. Therefore, it is necessary to take measures to develop an efficient market infrastructure as one of the tools to improve the financial condition of agriculture and increase its investment attractiveness and competitiveness.

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Шляхи підвищення прибутку від експорту української кукурудзи на світовому ринку

Денис Миколайович Лялько

Національний науковий центр «Інститут аграрної економіки»
03127, вул. Героїв Оборони, 10, м. Київ, Україна

► **Анотація.** Сьогодні на світовому ринку зерна склалася стійка спеціалізація: виробництво концентрується в розвинених країнах, а багато країн, що розвиваються, не в змозі вирішити свої зернові проблеми й змушені йти на масштабний імпорт. Україна є одним із ключових експортерів на зовнішній ринок таких зернових культур як пшениця, кукурудза та ячмінь, їх виробництво всередині країни значно перевищує внутрішнє споживання. Мета статті – здійснити комплексний аналіз світового ринку кукурудзи та визначити основні напрями розвитку вітчизняного ринку кукурудзи. У процесі дослідження використано методи: абстрактно-логічний – для формулювання висновків, монографічний – при деталізації функціонування ринку кукурудзи, порівняльного аналізу і рядів динаміки – для порівняння показників та виявлення тенденцій їх зміни у часі, статистичний – при проведенні аналізу попиту і пропозиції на ринку кукурудзи, графічний – для виявлення й ілюстрації тенденцій досліджуваних економічних явищ, економіко-математичні методи – при визначенні економічних показників, що впливають на попит і пропозицію кукурудзи. Представлено авторський погляд на сучасний процес розвитку зовнішньої торгівлі зерном кукурудзи в Україні. Визначено основні проблемні моменти подальшого нарощування експорту кукурудзи та обґрунтовано напрями взаємовигідного співробітництва у майбутньому, які забезпечать отримання економічних вигід українськими товаровиробниками. Запропоновано напрями розвитку експорту української кукурудзи та взаємовигідної співпраці в аграрній сфері економіки. Вказані напрями розвитку ринку можуть бути використані органами державної влади для підвищення ефективності виробництва та максимізації прибутку від торгівлі

► **Ключові слова:** аграрна економіка, зона вільної торгівлі, міжнародна інтеграція, продовольство, сільське господарство, прогноз, ринок, розвиток



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E-Governance of the Economy of the Future: World Experience and Prospects of Ukraine

Oleksandr Vasylovych Lebid*

Vinnytsia National Agrarian University
21008, 3 Soniachna Str., Vinnitsa, Ukraine

► **Abstract.** The urgency of implementing e-government in practice is explained not only by the priority of reforms of decentralization of power and public administration, which should result in the creation of an effective, transparent, open and flexible structure of public administration using the latest information and communication technologies (e-government), as well as implement an integrated state policy aimed at sustainable social development and adequate response to internal and external challenges. The purpose of the article is to study the development of e-governance worldwide and assess the prospects for its use in Ukraine. Sociological, general scientific, theoretical and empirical methods are used in the study, in particular, the method of unification of analysis and synthesis, the method of observation and comparison. Theoretical and methodological basis was presented by concepts, approaches, theories, regulations, conclusions considered in the scientific works of Ukrainian and foreign scientists, communication theory, information technology, project management, electronic governance and electronic democracy; legal acts of state authorities (Constitution of Ukraine, laws of Ukraine, decrees of the President of Ukraine, resolutions and orders of the Cabinet of Ministers of Ukraine). The normative legal acts on the use of e-government technologies in Ukraine are characterized. The main issues concerning modernization of public administration with the help of information and communication technologies are considered. The analysis of standards and regulations for e-governance technologies are carried out. The basic instruments of e-governance in the European Union and Ukraine are defined. The expediency of creation and use of e-government is substantiated. The structure of public administration, methods of e-governance, components of its information and technological infrastructure, state policy on the development of e-government, its technical components and their purpose, problems and organization of measures for the implementation and development of e-government, foreign and national experience in the use of e-government, its regulatory and legal framework are considered. The methodological approaches and results of monitoring the implementation of e-governance tools as the basis for the provision of administrative services in electronic form (2020) are analyzed. Stages of development and mechanisms of e-governance development management in Ukraine are investigated. The analysis of Ukrainian and foreign practice of application of e-governance technologies is carried out. Global processes of e-governance of the economy are determined. The main regularities of formation and development of electronic governance in Ukraine and the world are investigated; the essence and meaning of the basic methods and principles of e-government is revealed; various models of implementation of e-governance at the national, regional and local levels was studied; problems and prospects of formation and development of e-governance, taking into account domestic practice, was highlighted; the main stages and tasks of e-governance implementation in the context of the study of the best foreign practice are analyzed. The period of crisis requires decisive, reasonable actions from the authorities, which is possible provided that the full amount of information on the state of affairs in the state is available. Such needs can be met by a system of national electronic information resources. Therefore, the organizational model of national information resources of Ukraine in e-government is considered. The importance of implementation of the proposed plan of actions of authorities on the organization of information resources in e-government is determined. The use of recommendations on improving the organizational and information support of public administration in the spheres of information society

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*Corresponding author

development and the introduction of e-governance will allow expanding electronic information resources useful for consumers, characterized by various forms of information, organizational and technological decisions, and are the basis for information and analytical support for management decision-making in the system current and strategic planning

► **Keywords:** management, methodology, regulations, problems, tasks, technical components, experience, organization

► Introduction

Accelerated technological development in the context of the Fourth Industrial Revolution changed the nature of competition in world markets, increasing the value of technological capabilities as a source of competitive advantage and identifying technology as a key factor in production.

The changes that are taking place as a result of the revolution in information technology, and the multifaced political changes taking place in the world, signal the need for new approaches to politics. Technologies are being improved at a rather rapid pace, but the legislative framework at the level of both countries and individual cities is adapting to such changes slowly, which accordingly slows down the processes of somatization. The need to reform infrastructure policy is exacerbated not only by the challenges associated with digitalization, but also with the growing urbanization that forces the city authorities to abandon traditional management approaches ("from top to bottom"), to move to flexible management based on multilevel network structures. This requires new forms of global cooperation and an understanding of the shared responsibility for the spread of digital technologies around the world, as well as effective interaction between the public, private and scientific sectors in order to coordinate actions and control.

Studies of the aspect of e-governance and the main prerequisites for its implementation in Ukraine are covered in the works of such scientists, as Hrytsyak N., Demkova M., Dreshpak V., Koliushko I., Malinovsky V., Malukova I., Semenchenko A. In particular, the question of conceptual principles of e-governance and e-democracy is investigated in the book of Semenchenko A. and Dreshpak V.; scientific achievements of Demkov M. and Koliushko I. reveal the peculiarities of world experience in the implementation of e-governance and its specifics in Ukrainian realities, the mechanism of e-governance implementation at the local level was revealed in Dmytrenko's V. thesis; in the scientific study of Il'nytskyi M., the peculiarities of administrative regulation of e-governance in the field of public administration in Ukraine were studied. Whereas, for example, Hasimov R. investigated e-governance as a

mechanism for public administration and administration. It is observed that most scientific papers are aimed at researching the aspect of e-governance in the prism of a political tool and a means of achieving tasks in the field of public administration and administration. However, it can be said that in general, research on the role of e-governance in strengthening the competitiveness of the country's economy is not enough, which is the object of research.

The purpose of the article is to study the development of e-governance in the countries of the world and assess the prospects for use in Ukraine.

► Results and Discussion

The implementation of e-governance in Ukraine should be considered in the context of administrative reform, where it is an integral part thereof and is aimed primarily at providing state and administrative services online, creating a unified information telecommunication system for supporting personnel management in the civil service, introducing internal and inter-agency document management technologies without paperwork, integrating Ukraine into the global information space, ensuring openness and transparency of power, etc.

The authors of e-governance definitions apply different approaches, each of which reveals its features depending on the scope of application. At the same time, the most used are the following ones [1, 2]:

- technocratic, in which e-governance is considered as one of the basic technologies of the information society together with technologies such as e-commerce, culture, healthcare, science, environmental protection, etc., or as one of the stages of implementation of information and communication technologies (ICT) in public administration (computerization – informatization – e-governance), as an appropriate organizational and technical system;
- theoretical, in which e-governance is considered as an appropriate ideology, concept, theory or as one of the modern forms of public administration competing or based on approaches such as new state management, political networks, synergistic and new institutional approaches [3].

For the first time, the term “e-government” was used in 1997 on the initiative of the U.S. National Science Foundation to determine the process of administrative reform based on the ideology of new government management and the widespread implementation of ICT in public administration, primarily in executive authorities. In the future, to determine the reforms in public administration, which covered all public authorities and local self-government bodies, this term was modernized into an “electronic state”. Democratization of public administration, including the introduction of e-democracy in e-government, led to the emergence of a new term – “e-governance” [4, 5].

E-governance is a form of public administration that promotes efficiency, openness and transparency of the activities of state authorities and local self-government bodies using information and

telecommunication technologies to form a new type of state aimed at meeting the needs of citizens [6]. Taking into account international experience, the development of e-governance is one of the main factors in ensuring the success of reform and increasing the competitiveness of the country. The reform of any industry in modern conditions is aimed at the widespread use of modern information and communication technologies to achieve the necessary level of efficiency and effectiveness [7]. The purpose of e-governance is to develop e-democracy in order to achieve European standards of quality of e-public services, openness and transparency of government for citizens, society and business. Achieving this goal involves the implementation of a system of interrelated goals within the framework of the relevant state policy. On the basis of the above, the main goals and strategic tasks of e-governance were formed (Fig. 1).

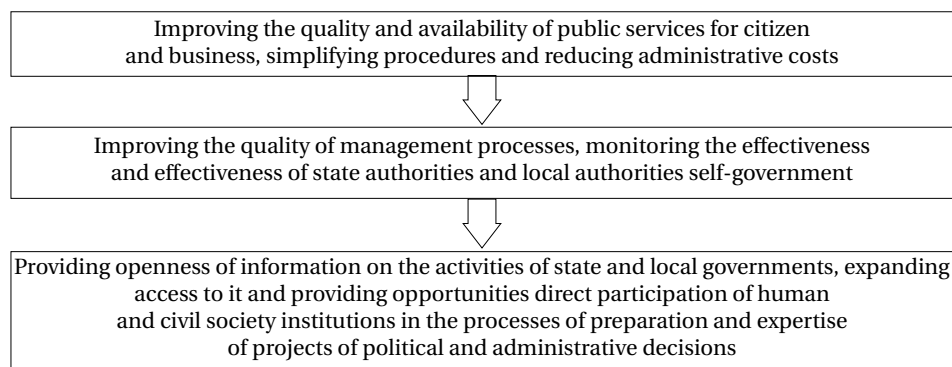


Figure 1. The main goals of e-governance

Source: Formed by the author

Unfortunately, these goals in the existing official documents in Ukraine are presented mainly in qualitative form without the use of clear quantitative indicators of their achievement, which greatly

complicates public administration (regulation) in this area. According to the theory and practice of strategic planning and management, these goals are specified and detailed in the system of strategic tasks (Fig. 2).

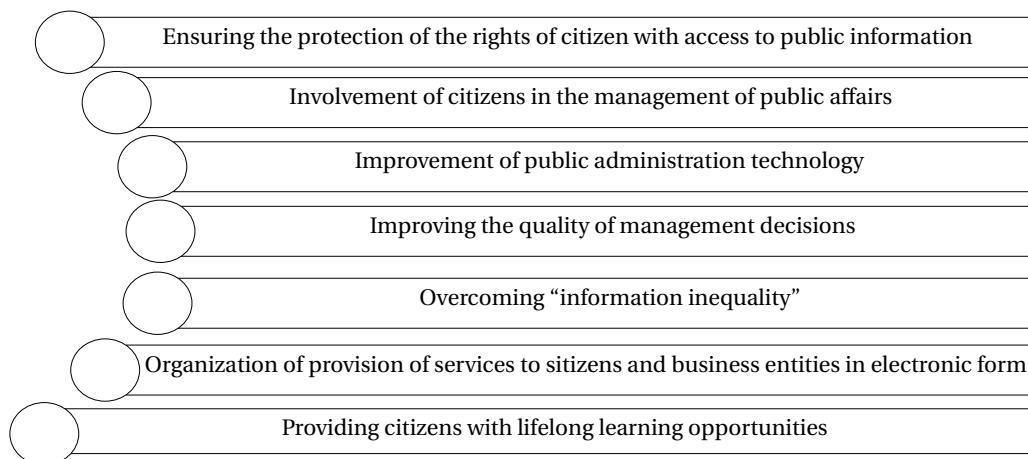


Figure 2. Strategic tasks of e-governance

Source: Formed by the author

The Cabinet of Ministers of Ukraine approved the Concept for the development of e- governance in Ukraine, which will determine the main goals, priority directions and development measures by 2020. The Government adopted the relevant order at a meeting on September 20, 2017. It is important to note that over the past two years, Ukraine has risen by 25 positions in the world ranking of e-governance, by 45 positions and by 30 positions in the open data rankings. Further rapid development is possible only if revolutionary approaches and the most promising technologies are applied, which,

in fact, is envisaged by the draft Concept. For example, the use of blockchain technology, which can really optimize many processes qualitatively. In September 2017, the state System of electronic trading of seized property SETAM has already been transferred to the blockchain technology. By the end of the year, it is planned to transfer the Register of Property Rights and the State Land Cadaster of Ukraine to the blockchain. According to the document, the State Agency for E-Governance is instructed to implement measures in key areas (Figure 3).

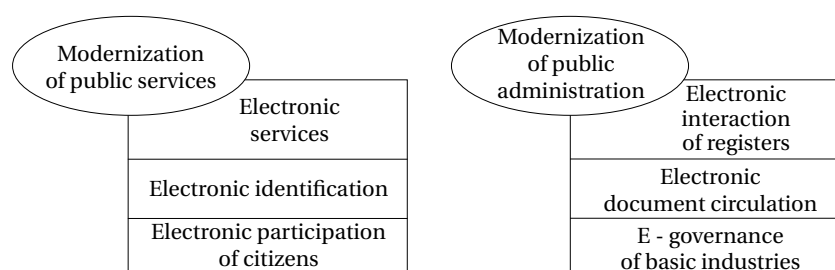


Figure 3. Priority areas

Source: general Ed by author based on source [8]

Diya is an online service where you can get public services, download digital versions of documents, such as a driver's license, a student ticket and create an electronic cabinet of a citizen (Fig. 4).



Figure 4. Available services of the e-democracy online platform "Interaction"

Source: : Generated by author based on source [8]

Through the application “Diya” it is possible in particular: apply for registration of a person as an individual entrepreneur; apply for the status of unemployed; get a police clearance certificate; get an extract about the land plot; check the license of truckers; receive social assistance at the birth of a child; restore or exchange a driver's license; Sign documents with an electronic digital signature. etc.

The Ministry of Digital Information plans to ensure 100% accessibility of public services to citizens and businesses by 2024; cover 95% of the population, social facilities and major roads coverage of high-speed Internet; attract 6 mln. citizens to the digital skills development program, to increase up to 10% the share of IT funding in the country's GDP.

The State Regional Development Strategy for 2021-2027 defines the general vector of sustainable development of the regions, namely: the new regional development policy should be based on the key challenges affecting the person, infrastructure, economy and the environment, as well as include building a culture of partnership and cooperation focused on the interaction of citizens and public institutions for development [2].

Today, more than 300 regulatory acts related to the information society, informatization, information security, information policy, e-governance, etc. have been developed in this area. In general, the regulatory framework established [9, 7, 2] is necessary for the implementation of e-governance, these documents define the basic principles of state policy, basic principles, priority goals and strategic objectives, mechanisms of public administration, etc. in the field of information policy, informatization, development of the information society and knowledge society, information security, e-governance and open government. is: its fragmentation, incompleteness, fuzziness, inconsistency, inconsistency, and sometimes the contradiction of some documents and the opacity of procedures, not adaptability to international acts, etc. A separate problem is the implementation of adopted legislative acts.

In Ukraine, changes in the creation of e-governance infrastructure are taking place. The factors that might prevent the accelerated development of this sphere are primarily the issue of inter-agency cooperation (including the lack of relevant regulations and regulatory and technical documents) and

the lack of formalized standard solutions for the provision of services by executive authorities remotely.

According to the Strategy for Sustainable Development “Ukraine-2020”, approved by the Decree of the President of Ukraine No. 5/2015 of January 12, 2015, the development of e-governance, in particular the introduction of electronic services, has been identified as one of the main priorities for reforming the public administration system. Also, within the framework of the implementation of the Association Agreement with the European Union, Ukraine should ensure the comprehensive development of electronic services in accordance with European requirements. E-governance is aimed at using the latest information and communication technologies that will help improve the quality of governance, as well as the interaction of government and citizens and promote social innovation in Ukraine [2].

In the Strategy for Public Administration Reform of Ukraine until 2021, the creation of an e-government is the main goal of the State Strategy for Regional Development for 2021-2027, which was approved by the Resolution of the Cabinet of Ministers of Ukraine no. 695 of 05.08.2020 [7].

In recent years, progress has been made in some areas: most government departments are represented online; some ministries and local self-government bodies have made significant progress in the field of internal automation, electronic document management, the creation of specialized databases and even the provision of a number of electronic services. A number of key elements of the e-government infrastructure have been created, and the necessary regulatory framework has been partially developed. However, in most areas, further work is needed to ensure the long-term benefits of e-governance for people, businesses and civil servants.

The slow progress, low efficiency and decisive role of the proposed solutions, rather than customer demand in e-governance projects in Ukraine, are explained by the delay in the start of the implementation of administrative reforms, which were the main driver of e-government development in most developed countries.

Among other approaches to the stageization of e-governance, it is necessary to note the approach, which is based on the degree of automation of the processes of electronic interaction of authorities

between themselves, society, business and international organizations, as well as the level of ensuring administrative reforms with the introduction of information technologies [6; 7].

Unlike Ukraine, both the European Union itself and the governments of most EU member states have a long and extensive experience in legislative and project support for the development of e-governance and the information sphere of society (it is, of course, about its innovative, computer-based sector). A somewhat conditional reference point here can be considered the appearance in 1994 of a recommendation document for the European Council – “Europe and the Global Information Society” prepared by a group of experts chaired by Martin Bangemann and now known as the “Bangemann Report”.

Worldwide, it is evident that e-governance is continuing to increase, with 65% of member states now in a group with a high or very high level of performance. While it is possible to trace the relationship between the level of e-governance and the country's income level, financial resources are not the only critical factor according to the UN report [5]. The availability of modern legislation in the field of e-governance and clarity of the set short and long-term goals for the development of the state is also an important factor on which the results in a particular state directly depend.

In particular, in the modern world, the following regional models of e-governance are considered the main [3]:

The continental European model is characterized primarily by the presence of non-governmental institutions, such as the European Parliament, whose recommendations are binding on all EU member states, a high degree of integration into a single information space and free access to information, strict legislation governing information relations. difference in the economic, political, cultural and technical potential of EU members. The most successful European model is implemented in France, Germany, Estonia, Norway, Austria, Bulgaria, etc.

Special features of the Anglo-American e-governance model is the fact that all electronic services are evenly provided through any information channels: the Internet, mobile communication, digital Television, etc.; in addition, countries using this e-governance model are leaders in the implemen-

tation and application of various forms of distance learning, primarily using the Internet network, which is also one of the most significant indicators of the level of development of a state. An important component of the success of the introduction of the Anglo-American e-government model was significant reforms of the entire structure of the state's work with information flows and the introduction of a system of personal responsibility for the informatization of state agencies [3].

Asian – built taking into account the high level of corporate culture of the countries of the region and the historical specifics of governance. Singapore, which has the first prototype of e-governance, is a classic representative of the Asian model of e-governance [10, 3].

Among the results of the introduction of e-governance in Ukraine, it should be noted that the implementation of the “single window” principle – the Unified State Portal of Administrative Services (poslugy.gov.ua), improved the content of the official web portals of public authorities, registered their accounts in the social networks “Facebook” and “Twitter”. The next step is to create state authorities' own channels on YouTube, in particular with online broadcasts of their activities. The system of electronic declaration of public assets was launched on the website of the National Agency on Corruption Prevention (nazk.gov.ua). Work has begun in the field of “electronic medicine” (ehealth-ukraine.org). The “electronic legal proceedings” are being implemented. The system of electronic appeals using the Internet in accordance with the Law of Ukraine “On Citizens' Appeals” was introduced, first of all, petitions to the Verkhovna Rada (itd.rada.gov.ua/services/petitions/) and the President of Ukraine (petition.president.gov.ua) were the e-data.gov.ua most demanded electronic reporting to the bodies of the State Fiscal Service, state statistics bodies and the Pension Fund of Ukraine. Access to the electronic VAT refund register has been opened. The system of public and public procurement has been reformed. In particular, public procurements are carried out exclusively in electronic form in the ProZorro system (prozorro.gov.ua). Banks (PrivatBank and Oschadbank) have developed a secure BankID system that allows confirming the user's identity on official websites through his account in Internet banking [1, 4, 5].

Ukraine is actively implementing the idea of a “state in a smartphone”. In particular, to this end, the Ministry of Digital Transformation was established in September 2019. One of the main achievements of the Cabinet of Ministers of Ukraine and the Ministry of Digital Transformation is the creation of the Diya application (State and I), which provides a number of administrative services online.

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procedures, not adaptability to international acts, etc. A separate problem is the implementation of adopted legislative acts.

According to the United Nations E- Government Survey 2020, Ukraine joined the group of countries with a high level of e- governance and became one of 12 countries that moved to a very high level in the e- participation index. The study analyzes the level of e-governance of states by calculating two key indexes: the E-Governance Development Index (EGDI) and the Citizens Electronic Participation Index (EPI).

The EGDI index analyzes the level of e- government development. To calculate it, the data of independent surveys of the international level are analyzed, including the Online Service Questionnaire (OSQ), which analyzes the level of development of “online presence” of all 193 UN member states [3].

The EPI Index is an electronic citizen participation index that is key to measuring governance and one of the bases for sustainable development. Epi is evaluated by analyzing the level of development of national e-governance portals or other government platforms related to providing up-to-date information to citizens, public consultation and decision-making.

The results of the study of the UN Department for Economic and Social Affairs allow us to track and analyze the ratings of countries by the level of e-government development, as well as to determine trends in the development of this index of Ukraine.

List of countries of the world and Ukraine by e-government development index for 2014 and 2020 is shown in Table 1 [11].

Table 1. E-Governance Development Index in some countries of the world and in Ukraine for 2014 and 2020

Country	E-Governance Index		Difference, %
	2014	2020	
France	0,8938	0,8718	-0,022
Denmark	0,8162	0,9758	+0,1596
Singapore	0,9076	0,915	+0,0074
Poland	0,6482	0,8531	+0,2049
United States	0,8748	0,9297	+0,0549
Sweden	0,8225	0,9365	+0,114
Czech Republic	0,607	0,8135	+0,2065
Slovakia	0,6148	0,7817	+0,1669
Romania	0,5362	0,7605	+0,2243
Ukraine	0,5032	0,7179	+0,2147
Somalia	0,0139	0,1293	+0,1154

Source: Raccoons of the Author

From the data in Table 1, we see that over the past 6 years in all countries except France (the EGDI value in 2014 is 0.8938, while in 2020 – 0.8718, which is less by 0.022 in relation to 2014), we observe the development of e-governance, which reflects the value of the E-Governance Development Index, in particular: Denmark – 0.8162 (2014) and 0.9758 (2020), 0.1596 in relation to 2014; Singapore – 0.9076 (2014) and 0.915 (2020), which is more than 0.0074 in relation to 2014; Poland – 0.6482 (2014) and 0.8531 (2020), which is more than 0.2049 in relation to 2014; U.S. – 0.8748 (2014) and 0.9297 (2020), which is more than 0.0549 in relation to 2014; Sweden – 0.8225 (2014) and 0.9365 (2020), which is more than 0.114 in relation to 2014; Czech Republic –

0.607 (2014) and 0.8135 (2020), which is more than 0.2065 in relation to 2014; Slovakia – 0.6148 (2014) and 0.7817 (2020), which is more than 0.1669 in relation to 2014; Romania – 0.5362 (2014) and 0.7605 (2020), which is more than 0.2243 in relation to 2014; Ukraine – 0.5032 (2014) and 0.7179 (2020), which is more than 0.2147 in relation to 2014 and, finally, Somalia – 0.0139 (2014) and 0.1293 (2020), which is more than 0.1154 in relation to 2014.

Thus, we observe that during the analyzed period, the most rapid growth is inherent in such countries as Slovakia, Poland, the Czech Republic, Ukraine and Romania. Also, it should be noted that there are a number of countries that have lost their place in the ranking (Table 2) [12].

Table 2. Rating of e-governance development of the countries of the world for 2014 and 2020

Country	2014	2020
Moldova	6	79
Georgia	56	65
Hungary	39	52
Greece	34	42
Italy	23	37
Germany	21	25
Spain	12	17
United States	7	9
United Kingdom	8	7
Ukraine	87	69

Source: Raccoons of the Author [12, 13]

Ramsbottom of Table 2 data, a sharp decline may be seen in the position of countries in the world for the development of e-governance, in particular Moldova – 6 position in 2014 and 79 in 2020, Georgia – 56th position in 2014 and 65th position in 2020; Hungary – 39th position in 2014 and 52nd position in 2020; Greece – 34th position in 2014 and 42nd position in 2020; Italy – 23rd position in 2014 and 37th position in 2020 year; Germany – 21 positions in 2014 and 25th position in 2020; Spain – 12th position in 2014 and 17th position in 2020; U.S. – 7th position in 2014 and 9th position in 2020; The UK is 8th in 2014 and 7th in 2020. However, we see that in Ukraine the e-governance development index indicates that Ukraine ranked 69th in 2020, rising 18 places compared to 2014.

Thus, according to the forecasts of the index “e-government development” in Ukraine (Fig. 5) on the use of a polynomial mathematical model of

3 degrees, the expected growth of this indicator in 2022 to the value of ~0.82 was obtained, which will characterize the approach of the level of development of e-governance in the country to the level of developed countries of the EU and the world.

When constructing a regression forecast for the “e-participation” index, none of the standard mathematical models will be able to give a sufficient explanation of the variation of this indicator. Therefore, given the significant fluctuations in the value of this index for the study period (Fig. 6) and taking into account the intensification of the government's actions in the development and maintenance of e-governance in Ukraine, it is possible to talk about fixing the level of index reached in 2020 at 0.81 and insignificant growth, which characterizes a fairly high level of interaction between Ukrainians and executive authorities through the use of online services [14].

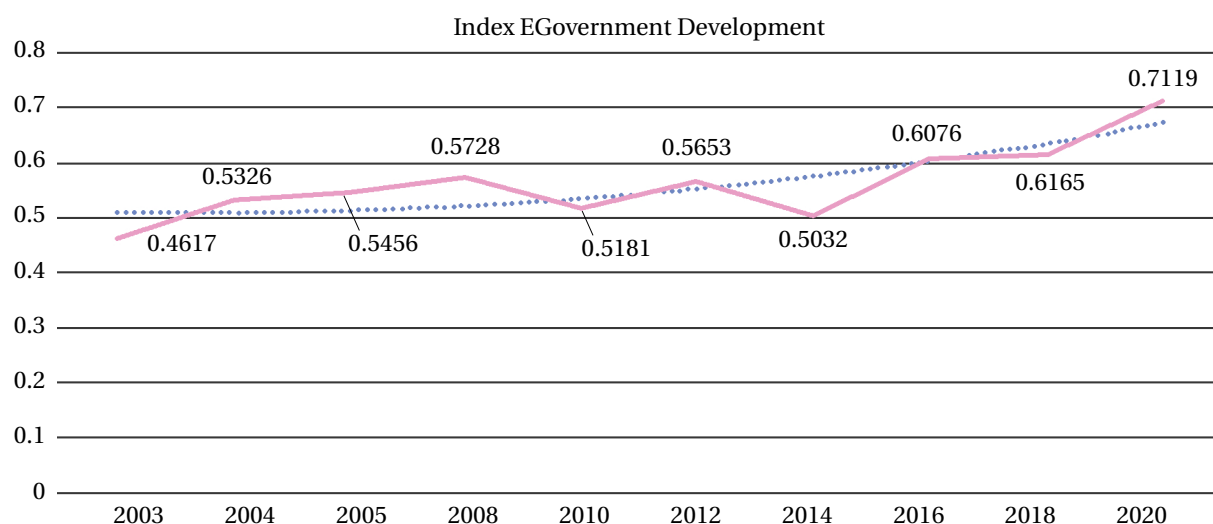


Figure 5. Trends in changing the value of the index “e-government development” in Ukraine

Source: : [9]

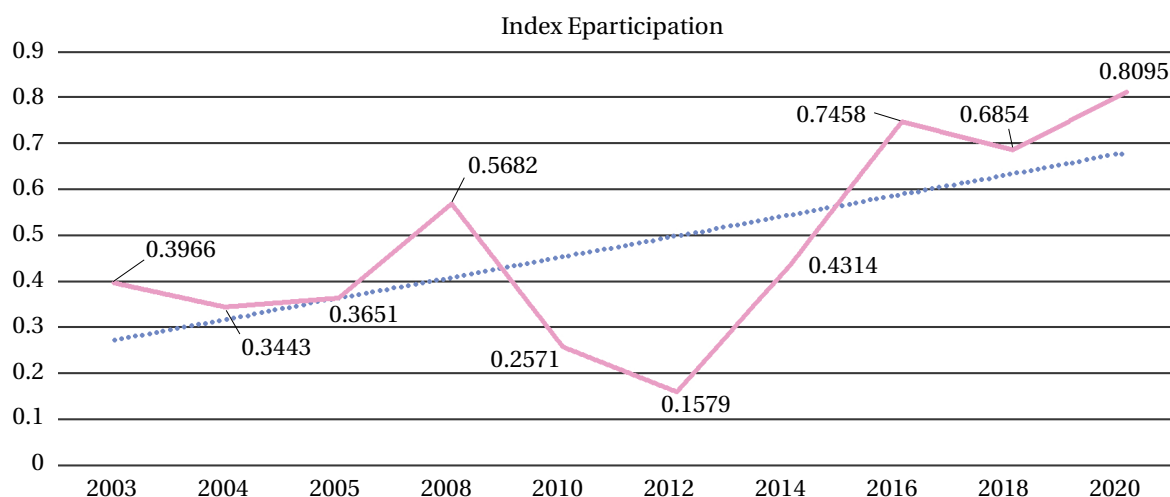


Figure 6. Trends in changing the value of the index “e-participation” in Ukraine

Source: : [10]

Thus, the State Regional Development Strategy for 2021-2027 provides for a number of measures aimed at the development of e-governance and e-democracy at the regional level, namely:

- to provide full coverage of the territories of agglomerations, large cities and settlements bordering them, modern means of mobile communication and high-speed Internet in order to simplify citizens' access to administrative, social and commercial services;
- to promote the introduction of innovative technologies in urban development management systems based on the smart city concept;
- to provide all social institutions with broadband Internet speeds of 100 Mbps and arrangement of

open Wi-Fi zones for visitors and staff;

- ensure the availability of social services and administrative services;
- to stimulate the development of information and communication technologies in rural areas: to provide coverage of 100% of rural areas with fixed broadband Internet access and 95% of the population with mobile Internet for the possibility of forming new interregional connections;
- to stimulate the development of small and medium-sized enterprises in rural areas, primarily remote and low-density population, through the use of financial, methodological and organizational tools, including providing affordable training for

entrepreneurship online, offline and mixed learning format, as well as expanding the network of entrepreneurship support centers “Diya. Business”.

- ensure the use and administration of the national portal for entrepreneurs “Diya. Business” to inform the entrepreneurs of the region about opportunities in a particular region; – to popularize the development of entrepreneurship in the regions by introducing educational programs on entrepreneurship in schools and higher education institutions, affordable (free) training for entrepreneurs using the possibility of a free online school for entrepreneurs “Diya. Business”;

- to introduce tools to support the participation of small and medium-sized enterprises in smart specialization projects;

- to attach all regions of Ukraine to the European Smart Specialization Platform (S3 Platform) in order to open access to the platform tools for the regions of Ukraine;

- provide modern technical and informational and software for the functioning of the electronic healthcare system;

- to ensure proper material and technical equipment of healthcare institutions, in particular, broadband Internet access and modern technical and informational software for the functioning of the electronic healthcare system;

- to conduct a full computerization of general secondary education institutions with the involvement of various sources of funding, training of pedagogical workers of digital literacy;

- to increase the level of digital literacy of rural population, in particular, through the implementation of the project “Diya. Digital education”. A number of reforms are envisaged in the areas of digital communications and digital infrastructure.

Therefore, it should be expedient to form the main ways and aimed at strengthening the development of e-governance in Ukraine, namely: to analyze the needs of citizens, business and government

in the medium and long term and prospects; the creation of a single centralized database and data on the identified needs of all stakeholders; developed guidelines for e-governance; developed a unified National Standard in e-governance based on the European e-governance standard, taking into account the loss of validity of the Concept for the Development of E-Governance in Ukraine at the end of 2020; modernize the ICT-based public administration structure and institutional transformations; conduct regional projects and case studies; refocus on long-term projects, abandoning the short-term; creating such conditions for transparency and accountability in e-governance projects; creating institutional governance. to promote initiatives aimed at synergistic use of ICT as a stimulating tool for improving the effectiveness and effectiveness of e-governance; to restructure state and administrative institutions in order to improve public administration through the use of ICT achievements.

► Conclusions

Summing up the above, it should be noted that e-governance is a form of public administration organization that contributes to increasing the efficiency, openness and transparency of the activities of state authorities and local self-government bodies using information and telecommunication technologies to form a new type of state aimed at meeting the needs of citizens. Thus, to date, the regulatory and legislative framework has already been adopted and appropriate organizational prerequisites for the successful implementation and development of e-governance in Ukraine have been formed. The state and society clearly understand that the implementation and development of e-governance will significantly increase the level of transparency and openness of public authorities, the level of citizen involvement in democratic processes and, most importantly, reducing the level of corruption in Ukraine.

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Електронне урядування економіки майбутнього: світовий досвід та перспективи України

Олександр Васильович Лебідь

Вінницький національний аграрний університет
21008, вул. Сонячна, 3, м. Вінниця, Україна

► **Анотація.** Актуальність впровадження електронного урядування на практиці пояснюється не лише пріоритетністю реформ децентралізації влади та державного управління, результатом яких має стати створення ефективної, прозорої, відкритої та гнучкої структури державного управління з використанням найновішої інформації та комунікаційних технологій (електронне урядування), а також реалізовувати інтегровану державну політику, спрямовану на сталий суспільний розвиток та адекватне реагування на внутрішні та зовнішні виклики. Метою статті є дослідження розвитку електронного урядування в усьому світі та оцінка перспектив його використання в Україні. У дослідженні використовуються соціологічні, загальнонаукові, теоретичні та емпіричні методи, зокрема метод об'єднання аналізу та синтезу, метод спостереження та порівняння. Теоретико-методологічну основу було представлено концепціями, підходами, теоріями, положеннями, висновками, розглянутими в наукових працях українських та зарубіжних вчених, теорії комунікації, інформаційних технологій, управління проектами, електронного урядування та електронної демократії; нормативно-правові акти органів державної влади (Конституція України, закони України, укази Президента України, постанови та розпорядження Кабінету Міністрів України). Охарактеризовано нормативно-правові акти щодо використання технологій електронного урядування в Україні. Розглянуто основні питання модернізації державного управління за допомогою інформаційно-комунікаційних технологій. Проведено аналіз стандартів і регламентів технологій електронного урядування. Визначено основні інструменти електронного урядування в Європейському Союзі та Україні. Обґрунтовано доцільність створення та використання електронного урядування. Структура державного управління, методи електронного урядування, складові його інформаційно-технологічної інфраструктури, державна політика щодо розвитку електронного урядування, його технічні компоненти та їх призначення, проблеми та організація заходів щодо впровадження та розвитку електронного урядування, розглянуто зарубіжний та національний досвід використання електронного урядування, його нормативно-правову базу. Проаналізовано методичні підходи та результати моніторингу впровадження інструментів електронного урядування як основи надання адміністративних послуг в електронному вигляді (2020 р.). Досліджено етапи розвитку та механізми управління розвитком електронного урядування в Україні. Проведено аналіз української та зарубіжної практики застосування технологій електронного урядування. Визначено глобальні процеси електронного управління економікою. Досліджено основні закономірності становлення та розвитку електронного урядування в Україні та світі; розкрито сутність і значення основних методів і принципів електронного урядування; досліджено різні моделі впровадження електронного урядування на національному, регіональному та місцевому рівнях; висвітлено проблеми та перспективи становлення та розвитку електронного урядування з урахуванням вітчизняної практики; проаналізовано основні етапи та завдання впровадження електронного урядування в контексті вивчення передового зарубіжного досвіду.

Кризовий період вимагає від влади рішучих, зважених дій, що можливо за умов наявності повного обсягу інформації про стан справ у державі. Такі потреби може задовольнити система національних електронних інформаційних ресурсів. Тому розглянуто організаційну модель національних інформаційних ресурсів України в електронному урядуванні. Визначено важливість реалізації запропонованого плану дій органів влади щодо організації інформаційних ресурсів в електронному урядуванні. Використання рекомендацій щодо удосконалення організаційно-інформаційного забезпечення державного управління у сферах розвитку інформаційного суспільства та запровадження електронного урядування дозволить розширити корисні для споживачів електронні інформаційні ресурси, що характеризуються різноманітними формами інформування, організаційними та технологічними рішеннями, і є основою для інформаційно-аналітичного забезпечення прийняття управлінських рішень у системі поточного та стратегічного планування

► **Ключові слова:** менеджмент, методологія, регламент, проблеми, завдання, технічні складові, досвід, організація

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ЗМІСТ / CONTENTS

Колонка головного редактора

Економіка насінництва 5

Editor-in-Chief's column

Economics of seed production.....5

Ю. О. Лупенко, О. В. Захарчук, Я. Ф. Навроцький

Наукове забезпечення організації державного регулювання розвитку насінництва в Україні 6

Y.O. Lupenko, O.V. Zakharchuk, Ya.F. Navrotskyi

Scientific support of the organisation of state regulation of seed production development in Ukraine.....6

П. Т. Саблук

Проблеми модернізації земельних відносин в Україні..... 21

P.T. Sabluk

Problems of land modernisation in Ukraine..... 21

А. О. Зайнчковський, М. В. Кривун

Ефективність господарського механізму взаємодії учасників молочного ринку та функціонування молокопереробних підприємств..... 30

A. O. Zainchkovskyi, M. V. Kryvun

The efficiency of the economic mechanism of interaction of dairy market participants and functioning of dairy processing enterprises..... 30

О. М. Могильний, Н. І. Пати́ка

Інноваційні стратегії мінімізації ризиків сільського населення щодо захищеної зайнятості, викликаних пандемією коронавірусу та інституційними обмеженнями 43

O. M. Mohylnyi, N. I. Patyka

Innovative strategies to minimise rural population's risks of vulnerable employment caused by the coronavirus pandemic and institutional constraints..... 43

О. М. Нечипоренко, Ю. М. Носенко, Л. М. Сінельник

Потенційні напрями фінансового стимулювання розвитку науково-інноваційних кластерів 61

O. M. Nechyporenko, Yu. M. Nosenko, L. M. Sinelnik

Potential areas of financial incentives for the development of scientific and innovation clusters 61

Г. В. Спаський

Зовнішня торгівля аграрними товарами України в контексті Угоди про асоціацію з Європейським Союзом 72

H. V. Spaskyi

Foreign trade in agricultural goods of Ukraine in the context of the Association Agreement with the European Union..... 72

О. С. Лукова

Класифікація фінансових інструментів: обліково-контрольний аспект 81

O. S. Lukova

Classification of financial instruments: accounting and control aspect 81

Д. М. Лялько

Шляхи підвищення прибутку від експорту української кукурудзи на світовому ринку 90

D. M. Lialko

Ways to increase profits from the export of Ukrainian corn on the world market 90

О. В. Лебідь

Електронне урядування економіки майбутнього: світовий досвід та перспективи України 98

O. V. Lebid

E-Governance of the economy of the future: world experience and prospects of Ukraine..... 98

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