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INNOVATIVE DEVELOPMENT OF THE AGRICULTURAL MARKET: RESEARCH OF MODERN TENDENCIES AND STRATEGIES

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The global economic crisis and the aftermath of the COVID-19 pandemic are shaping strong trends of deterioration in food security around the world. At the same time, it is expected that in the 2020/21 crop year, world grain markets will remain secure despite the reduction in production and stocks in October compared to September. However, there are certain systemic problems in agriculture in Ukraine exacerbated by quarantine measures, especially at the level of small farms.

The paper presents some of main problematic aspects in the agricultural sector. The solution of the considered problem aspects lying in the plane of development of innovative approaches of sustainable agriculture integration, introduction of special measures and definition of indicators of efficiency of such measures presented in given paper. This study aims to identify strategic approaches to reducing the gap between knowledge creation and dissemination in the innovative development of the agricultural market through the introduction and dissemination of sustainable agricultural practices.

It is shown that in order to ensure competitiveness in the markets of agricultural products, producers need to innovate. The studied examples of successful implementation of innovative projects in the field of agricultural production in the world allowed summarizing the experience and proposing strategic approaches to the development of the domestic agricultural market. The proposed strategic approaches can provide a space for an open dialogue on technologies and ways of commercializing products. The recommendations proposed in this paper are aimed at further research into ways and means of creating horizontal and vertical networks and platforms that provide knowledge dissemination (creation and training), create new markets, resources, and provide political support at various levels of government for interaction with national and international organizations.

Key words: agricultural market, innovation, development, trends, problems, strategies.
Tabl.: 3. Lit.: 16.

ИННОВАЦИОННОЕ РАЗВИТИЕ АГРАРНОГО РЫНКА: ИССЛЕДОВАНИЕ СОВРЕМЕННЫХ ТЕНДЕНЦИЙ И СТРАТЕГИЙ

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Мировой экономический кризис и последствия пандемии COVID-19 формируют мощные тенденции, проявляющиеся в ухудшении продовольственной безопасности во всем мире. При этом ожидается, что в 2020/21 урожайном году мировые рынки зерновых культур будут оставаться обеспеченными, несмотря на сокращение производства и запасов в октябре по сравнению с сентябрем. Но при этом имеют место определенные системные проблемы в ведении сельского хозяйства в Украине, которые усилены карантинными мероприятиями, особенно на уровне мелких фермерских хозяйств.

В работе представлены некоторые основные проблемные аспекты в аграрном секторе. Решение рассмотренных проблемных аспектов находится в плоскости разработки инновационных подходов интеграции устойчивого сельского хозяйства, внедрения специальных мероприятий и определения индикаторов эффективности таких мероприятий, представленных в работе. Данное исследование направлено на выявление стратегических подходов к сокращению разрыва между созданием знаний и их распространением при инновационном развитии аграрного рынка на основе внедрения и распространения устойчивых практик ведения сельского хозяйства.

Показано, что для обеспечения конкурентоспособности на рынках сельскохозяйственной продукции, производителям необходимо внедряли инновации. Исследованные примеры из успешной реализации инновационных проектов в сфере аграрного производства в мире позволили обобщить опыт и предложить стратегические подходы для развития отечественного аграрного рынка. Предложенные стратегические подходы способны обеспечить создание пространства для ведения открытого диалога о технологиях и пути коммерциализации продукции. Рекомендации, предложенные в данной работе нацелены на то, чтобы осуществлять дальнейшие исследования путей и способов создания горизонтальных и вертикальных сетей и платформ, обеспечивающих распространение знаний (создание и обучение), создание новых рынков, ресурсов, а также обеспечивающих политическую поддержку на разных уровнях управления для взаимодействия с национальными и международными организациями.

Ключевые слова: аграрный рынок, инновации, развитие, тенденции, проблемы, стратегии.

Табл.: 3. Лит.: 16.

ІННОВАЦІЙНИЙ РОЗВИТОК АГРАРНОГО РИНКУ: ДОСЛІДЖЕННЯ СУЧАСНИХ ТЕНДЕНЦІЙ ТА СТРАТЕГІЙ

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Світова економічна криза та наслідки пандемії COVID-19 формують потужні тенденції, що виявляються у погіршенні продовольчої безпеки в усьому світі. При цьому очікується, що у 2020/21 врожайному році світові ринки зернових культур залишатимуться забезпеченими, незважаючи на скорочення виробництва та запасів у жовтні порівняно з вереснем. Але при цьому мають місце певні системні проблеми у веденні сільського господарства в Україні, посилені карантинними заходами, особливо на рівні дрібних фермерських господарств.

У роботі представлено деякі основні проблемні аспекти в аграрному секторі. Вирішення розглянутих проблемних аспектів знаходиться в площині розробки інноваційних

підходів інтеграції стійкого сільського господарства, впровадження спеціальних заходів та визначення індикаторів ефективності таких заходів. Наше дослідження спрямоване на виявлення стратегічних підходів до скорочення розриву між виникненням знань та їх розповсюдженням при інноваційному розвитку аграрного ринку на основі впровадження та поширення стійких практик ведення сільського господарства.

Показано, що для забезпечення конкурентоспроможності на ринках сільськогосподарської продукції виробникам необхідно впроваджували інновації. Досліджені приклади з успішної реалізації інноваційних проєктів у сфері аграрного виробництва у світі дозволили узагальнити досвід та запропонувати стратегічні підходи для розвитку вітчизняного аграрного ринку. Запропоновані стратегічні підходи здатні забезпечити створення простору для ведення відкритого діалогу про технології та шляхи комерціалізації продукції. Рекомендації, запропоновані у статті, націлені на те, щоб здійснювати подальші дослідження шляхів та способів створення горизонтальних та вертикальних мереж та платформ, що забезпечують розповсюдження знань (створення та навчання), створення нових ринків, ресурсів, а також забезпечують політичну підтримку на різних рівнях управління для взаємодії з національними та міжнародними організаціями.

Ключові слова*:* аграрний ринок, інновації, розвиток, тенденції, проблеми, стратегії.

Табл.: 3. Літ.: 16.

Problem statement in general and its connection with important scientific or practical tasks. In the context of the global economic crisis caused by quarantine restrictions due to the spread of COVID-19, governments face serious threats to food security, exacerbated by climate change. The world community is in a state of consensus search on the need to ensure greater sustainability of agriculture and agricultural markets than in the past. The transition to sustainable food systems requires a concerted effort on the part of a wide range of stakeholders and organizations involved in supply chains. The Food and Agriculture Organization of the United Nations (FAO) promotes systemic approaches to sustainable development, focusing on more productive and sustainable development of agriculture, forestry and fisheries, as well as on inclusive and efficient agricultural and food systems. Agricultural markets play an important role in these systems in ensuring that the products of sustainable farms receive the advantage and preferences of consumers based on their internal quality characteristics. Market approaches that have proven they effectiveness while implementing in global economic systems and are designed to manage the reorganization of food supply chains can contain useful innovative ways to adapt (and use) sustainable practices in Ukraine. These mechanisms work in an environment where the public, private and civil society sectors work together to overcome institutional constraints and seize opportunities that could lead to the widespread expansion of sustainable agriculture.

Analysis of recent research and publications. Reports of international organizations on agricultural production provide a modern perspective for the development of the world agricultural market. Monthly reviews of the United States Department of Agriculture and the Foreign Agriculture Service (USDA FAS) are supplemented by a detailed assessment of grain production, as well as terms of supply and demand by country / region on a quarterly basis and taking into account the food

situation [7]. Based on these data, it is possible to carry out a more in-depth analysis of the domestic agricultural market.

The Food and Agriculture Organization of the United Nations (FAO) and the French National Institute for Agricultural Research (INRA) presented the results of a study of innovative approaches that allow markets to stimulate the transition to sustainable agriculture that can be implemented in Ukraine [2]. The approaches are based on the experience of small agricultural producers who use sustainable practices and are in demand. Innovations was supported by institutions that manage the sustainable development of agriculture and exchange in the agricultural market.

Kaletnik G. M., & Lutkovska S. M. [3] give priority to the study of innovative strategy for sustainable development and, in particular, establish that its development requires the identification and gradual improvement of an attractive value proposition; development and continuous improvement of business models; drawing up and implementation of an action plan; forming the focus of all stakeholders on achieving strategic goals.

Yaremchuk N. V. [8] points to the implicit potential for expanding productivity horizons. In particular, the fact that the unwillingness to produce value-added products in the country deprives the economy of significant financial infusions is emphasized. Also, attention is focused on the problem of lowering of profitability of grain production and irrational distribution in relation to the producer. It is considered that the reason for this situation [8] is the increasing influence of the level of export activity of grain traders on prices.

Malik M. Y., Shpykulyak O. G. [12] study the development of agricultural cooperation and integration processes in the agricultural sector of Ukraine, deeply explore the theoretical and methodological foundations of cooperation and identify the structural dynamics of changes in cooperation and development of integration processes, in the methodological relationship with management efficiency and offer conceptual cooperation and integration relations in the agricultural sector. Mazur A. G., Mazur K. V. [4] also determines the need to cover the rural economy with cooperative formations. At the same time, determining the prospects for the functioning of enterprises according to the institutional structure of their positioning requires the establishment of indicators of organizational and institutional structure of formations, indicators of development and efficiency, as it is appointed by Shpykulyak O. G., Malik M. Y. [16].

In [15] the peculiarities of state regulation in agriculture of Ukraine are revealed by Furman I. V., Pronko L. M. The results allowed the authors to identify areas of state support for the agricultural sector of Ukraine and determine the need to implement a positive world experience. Also in [14] the importance of establishing the optimal forms of organizational structures of management of agricultural enterprises is determined by Furman I. V., Gontaruk J. V. on the basis of a study of the practice of effective functioning of individual enterprises [13]. Accordingly, Pronko L., Furman I., Kucher A., Gontaruk Y. [5] proposed options for the integration of households into more consolidated economic forms and outlined the prospects for implementing a program for the development of agricultural service cooperatives within Ukraine.

In [1] the essential characteristics of innovations in the agricultural sector are given and their functions, economic content are determined, specifics, tasks and principles of their management are indicated, scientific approaches to the influence of institutional factors on the development of innovative technologies are systematized by Aleskerova Y. V., Fedoryshyna L. I., Todosichuk V. L. The authors emphasize the need to develop measures for the formation of customer-oriented innovative technologies in the agricultural sector. In [6] the analysis of influence of development of innovative technologies in agriculture on formation of professional competences of agroengineers is carried out by Pryshliak V. M. The author also highlights the factors that emphasize the quality of training in agriculture, the development of their ability to perform project functions based on interdisciplinary links.

The key issues that need further research are innovations in organizational and institutional structures that allow the creation of local markets for sustainable agricultural products.

Formulation of the goals of the article (task statement). Given study aims to identify strategic approaches to overcoming the distinction between knowledge creation and dissemination in the innovative development of the agricultural market through the introduction and dissemination of sustainable agricultural practices. Overcoming this distinction can be achieved by summarizing global trends and the current state of the agricultural sector, identifying relevant issues, summarizing the experience of farmers, small and medium enterprises, civil society organizations that develop innovative approaches to local agricultural markets for sustainable products.

Presentation of the main research material. The consequences of the COVID-19 pandemic, mainly due to economic shocks, will be reflected in the deterioration of food security worldwide. Despite the fact that agricultural production is undergoing obvious changes, and the supply of basic foodstuffs is generally sufficient and stable, the loss of income due to measures taken to curb the spread of COVID-19 and the general economic downturn are likely to increase the complexity of agricultural enterprises and farms activities and will contribute to the development of food insecurity. The COVID-19 pandemic has affected the economic systems of all countries by varying degrees, and should be seen as a factor in raising awareness of the problematic aspects of the agricultural sector. It should be noted that the effects of a pandemic have not yet been definitively assessed in terms of food instability, as in most countries assessments have not yet been made or are still being made. Thus, the statistics presented in given study do not reflect the comprehensive situation with food security and only indicate the current state of affairs in the structural elements of the agricultural sector.

Wheat production in Ukraine in October 2020/21 of the crop year (c. y.) is estimated at 25.5 million tons, which is almost 6 percent less than in September and almost 13 percent less than last year. Wheat yield is 3.75 tons per hectare, which is 6 percent less than last month and 10 percent less than last year. The area of wheat cultivation is 6.8 million hectares, which remained unchanged compared to the previous month, but decreased by 3 percent compared to last year (Table 1, Table 2).

Wheat in Ukraine is harvested over two seasons: winter wheat, which accounts for 97 percent of production, and spring wheat, which yields about 3 percent of total production. The monthly decrease in yield is explained by the final adjustments of the harvest results from the State Statistical Service of Ukraine. Throughout the growing season, wheat growing conditions varied by region. Arid and moderately arid conditions were typical in most southern regions of Ukraine (Steppe zone), which led to a deterioration in yields. There were more favorable conditions in the northern region of the country (Forest Zone). Areas with high yields in the north could not compensate for the decline in yields due to lower than average wheat yields in the southern regions of the country. On average, Ukraine provided 3.35 percent of world wheat production in the fall of the 2020/21 harvest year.

Corn production in Ukraine in October 2020/21 of the harvest year is estimated at 36.5 million tons, which is 5 percent less than in September, but 2 percent more than last year's production. Corn yield is estimated at 6.76 tons per hectare, which is 5 percent less than in September and 6 percent less than last year's production. The area of corn cultivation in Ukraine is 5.4 million hectares, which remained unchanged compared to September and increased by 8 percent compared to last crop year.

The monthly decrease in yield is explained by the results presented by the Ministry for Development of Economy, Trade and Agriculture of Ukraine, which are early harvest due to constant drought and above average temperatures during August and September in areas of Ukraine where corn is grown, including areas with higher than average yield in the forest-steppe zone. It is expected that the yield will remain quite high and will provide Ukraine with 3rd place in the ranking, even in arid conditions, due to increased use of hybrid varieties. The harvest is still ongoing, and as of October 1, about 18 percent of the total crop has already been harvested.

Sunflower production in Ukraine during the October 2020/21 crop year is estimated at 15.0 million tons, which is 12 percent less than in September and 9 percent compared to the previous harvest year. Sunflowers yield is estimated at 2.21 tons per hectare, which is 12 percent less than in September and 14 percent less than last year. The area of sunflower cultivation in Ukraine is estimated at 6.8 million hectares, which is unchanged compared to last month and 6 percent less than last year. The monthly decrease in yield is explained by the data of the Ministry for Development of Economy, Trade and Agriculture of Ukraine and is caused by droughts and changes made in the initial results of harvesting. Yields in Ukraine's two main sunflower cultivation regions, the steppe zone, which accounts for about 55 percent of production, and the forest-steppe zone, which accounts for about 41 percent of production, are declining from year to year.

The Ministry for Development of Economy, Trade and Agriculture of Ukraine publishes the yields in the bunkers, but the conversion of net yields into bunkers has been increasing over the last few years. In the last few years, bunker yields have been approaching to net. As of October 1, the sunflower crop is harvested by about two-thirds, and its yield usually increases during the harvest season.

It is expected that in the 2020/21 harvest year, world grain markets will remain secure despite the reduction in production and stocks in October compared to September. With the growth of grain trade in the 2020/21 crop year, world grain

markets continue to demonstrate their resilience to the challenges and uncertainties posed by COVID-19. However, it is important to notice that some systemic problems in agriculture in Ukraine are exacerbated by quarantine measures, especially at the level of small farms.

Table 1

Area and yield grain in Ukraine and in the World in 2018-2021 crop years

Grain product	Area (mln. Ha)				Yield (T/Ha)			
	2018/ 2019	2019/ 2020	Sep	Oct	2018/ 2019	2019/ 2020	Sep	Oct
Wheat								
World	215,42	217,06	222,29	222,20	3,39	3,52	3,47	3,48
Ukraine	6,72	7,02	6,80	6,80	3,73	4,16	3,97	3,75
Coarse								
World	331,09	333,84	337,31	338,00	4,22	4,23	4,33	4,32
Ukraine	7,58	8,22	8,51	8,51	5,87	5,67	5,75	5,37
Кукурудза								
World	192,08	193,25	196,76	196,73	5,85	5,78	5,91	5,89
Ukraine	4,57	4,99	5,40	5,40	7,84	7,19	7,13	6,76
Barley								
World	48,83	51,79	50,81	51,31	2,85	3,02	3,09	3,05
Ukraine	2,57	2,78	2,60	2,60	2,96	3,42	3,54	3,08
Oat								
World	9,99	9,55	9,69	9,83	2,23	2,39	2,45	2,46
Ukraine	0,20	0,18	0,20	0,20	2,14	2,32	2,31	2,31
Rye								
World	3,74	3,91	4,17	4,17	2,68	3,11	3,13	3,15
Ukraine	0,15	0,12	0,14	0,14	2,66	2,90	2,96	2,96
Soy								
World	124,97	122,44	127,59	127,28	2,89	2,75	2,90	2,89
Ukraine	1,88	1,96	1,50	1,50	2,58	2,29	2,20	2,20
Oilseeds								
World	248,21	245,05	249,81	248,93	2,32	2,25	2,33	2,33
Ukraine	9,38	9,70	9,40	9,40	2,42	2,52	2,43	2,21
Sunflower								
World	25,80	26,37	26,75	26,61	1,96	2,09	2,02	1,93
Ukraine	6,50	6,40	6,80	6,80	2,31	2,58	2,50	2,21
Rapeseed								
World	36,81	34,90	34,71	34,70	1,98	1,98	1,97	1,98
Ukraine	1,00	1,34	1,10	1,10	2,85	2,59	2,27	2,27

Source: compiled by the author based on data [7]

Involving small farmers in agricultural marketing activities in both traditional and modern markets, such as supermarkets, provides an opportunity to improve the living conditions of farming families. At the same time, the opportunities to involve small farmers in activities in agricultural markets are conditioned by the availability and access to a number of necessary resources, including rural infrastructure, financial assistance and reliable market information. There are many small farmers face numerous obstacles to selling their agricultural products in Ukraine (Table 3).

A key constraint faced by farmers is the influence of intermediaries in determination or setting prices. In many cases, intermediaries set unreasonably low prices and, because farmers generally do not have a strong association in order to trade, they are often forced to accept intermediary prices.

Table 2

Grain production in Ukraine and in the World in 2018-2021 crop years

Grain product	Production (T)				Change in production			
	2018/ 2019	2019/ 2020	Sep	Oct	Comp. to last month		Copm. to last year	
					Mln. T.	%	Mln. T.	%
Wheat								
World	730,93	764,49	770,49	773,08	2,59	0,34	8,60	1,12
Ukraine	25,06	29,17	27,00	25,50	-1,50	-5,56	-3,67	-12,58
Coarse								
World	1397	1410	1460	1458	-1,42	-0,1	48,12	3,41
Ukraine	44,50	46,55	48,90	45,70	-3,20	-6,54	-0,85	-1,83
Кукурудза								
World	1123	1116	1162	1158	-3,56	-0,31	42,48	3,80
Ukraine	35,81	35,89	38,50	36,50	-2,00	-5,19	0,61	1,71
Barley								
World	139,36	156,41	156,98	156,75	-0,23	-0,14	0,34	0,22
Ukraine	7,60	9,53	9,20	8,00	-1,20	-13,04	-1,53	-16,04
Oat								
World	22,24	22,83	23,72	24,15	0,44	1,83	1,32	5,80
Ukraine	0,42	0,43	0,45	0,45	0,00	0,00	0,02	5,39
Rye								
World	10,01	12,17	13,07	13,13	0,05	0,40	0,96	7,86
Ukraine	0,40	0,34	0,40	0,40	0,00	0,00	0,06	17,99
Soy								
World	361,06	336,59	369,74	368,47	-1,27	-0,34	31,88	9,47
Ukraine	2,20	4,83	4,50	3,30	0,00	0,00	-1,20	-26,65
Oilseeds								
World	547,67	551,09	583,00	579,25	-3,75	-0,64	28,16	5,11
Ukraine	22,68	24,46	22,80	20,80	-2,00	-8,77	-3,66	-14,98
Sunflower								
World	50,58	55,02	54,02	51,49	-2,53	-4,68	-3,53	-6,42
Ukraine	15,00	16,50	17,00	15,00	-2,00	-11,76	-1,50	-9,09
Rapeseed								
World	72,86	69,09	68,45	68,87	0,42	0,62	-0,22	-0,32
Ukraine	2,85	3,47	2,50	2,50	0,00	0,00	-0,97	-27,85

Source: compiled by the author based on data [7]

Another problem, farmers face when selling their agricultural products, is poor road conditions and outdated vehicles. In many rural areas with poor roads, transport owners are reluctant to use their own vehicles due to the potential threat of rapid wear and tear, thus depriving farmers of access to this resource. This circumstance causes delays of agricultural production in production centers, which leads to significant losses after harvesting.

The poor quality of rural roads also causes high transport costs, which raises the price of agricultural products. Rising prices occur in two ways: in the market of raw materials, when farmers transport raw materials; in the food market, when farmers transport their products to sales centers. However, it is also observed that rising prices for agricultural products due to the poor quality of rural roads do not often compensate by the increase in transport costs, which often reduces the profitability of farming.

Low-quality of roads in rural areas also influences the choice of crops grown in different communities. However, contrary to the common hypothesis that small farmers regularly use more land and other resources to cultivate low-yielding crops than the cultivation of more expensive crops, in the scientific works of domestic scientists there is evidence that small farmers use much of their land for the cultivation

of crops that are more profitable as a result of the implementation of the terms of contracts between small farmers and landowners. It is also observed that farmers prefer to grow products that do not spoil longer and require less labor, especially in areas where road networks connecting food markets are of low quality. In those areas, where the distance from the center of sale to the farm is significant and the quality of roads is poor, farmers mostly grow food crops directly in households, and industrial and more expensive crops are grown in relatively remote areas of the household. The reasons for such a model of farming might be the desire of farmers to provide adequate nutrition and reduce the risk of crop losses.

Low market prices for agricultural products due to factors such as rapid deterioration, lack of processing and storage facilities and limited funding force small farmers to sell their products quickly after harvest and are considered an important issue in small-scale agriculture.

Despite that fact that the price of agricultural products should be directly related to production costs, crop variety and market differentiation, practical experience shows that prices for agricultural products in rural areas vary depending on geographical and spatial characteristics. Pricing decisions are often determined mainly by the conspiracy of sellers in a particular market. However, a small percentage of farmers have now started to set up marketing associations to sell their agricultural products. In these cases, farmers can set their own prices.

Farmers also often have to deal with intermediaries in the sale of their products. For example, during the rains, when low-quality roads are in the worst condition and are virtually impassable for many vehicles, it becomes extremely difficult to negotiate with intermediaries and transporters of agricultural products. Some intermediaries use rainy periods when harvesting or the roads obstruction, not only to lower prices, but also to liaise with farmers so that, even when prices rise, they can buy agricultural products at low prices.

Table 3

Restrictions on the sale of agricultural products

Restrictions	Weight coefficient (over five-point scale)
Intermediary policy	4
Transport	4,5
Low market price	3,5
Lack of storage species	4

Source: generated by the author.

Post-harvest losses are common in rural areas. A large percentage of produce rots in the field, largely due to a lack of processing capacity or processing skills, warehousing or transportation. Some farmers confirm that it is not economically feasible to transport products from the farm to the market, where the income from its sale cannot even compensate for transportation costs to sales centers. Summing up, it should be noted that farmers face numerous problems in the market of agricultural products that deserve immediate attention and the development of measures to address them.

Global and domestic experience justifies the need for sustainable social development based on the support of such social values as security, food security, independence, development of rural areas, farmers and communities to adapt sustainable practices to local conditions along with economic development through new food markets. The main problematic aspects that led to the development of innovative approaches of the development of agricultural markets based on the integration of sustainable agriculture, the implemented measures and indicators of the effectiveness of such measures are presented below.

Innovative approaches to sustainable agricultural practice. The experience of Indonesia. The essence of the approach – business-oriented advocacy programs aimed at ensuring sustainable cocoa production: institutional innovation.

Problem aspects – not effective knowledge sharing; not effective approach to technology transfer from top to bottom; farmers' response to new technologies is not in line with expectations.

Implemented measures – development of an advanced platform for knowledge exchange, which is integrated into a wider value chain of cocoa; development of a methodology for local farmers' participation in the selection and testing of promising cocoa genotypes on farms; introduction of a radial (fan) model of knowledge dissemination.

Performance indicators – establishment of cocoa development centers with researchers who play the role of network dissemination of knowledge; establishment of village cocoa clinics managed by entrepreneurial farmers, the so-called cocoa doctors, who create and disseminate knowledge among farmers.

The experience of Namibia. The essence of the approach – system of guarantee participation in organic associations.

Problem aspects – arid climate; limited pastures and unsatisfactory conditions of their operation; land clearing for crops growing; application of inappropriate cultivation methods; creation of artificial watering places; dangerous land use; degradation of natural resources and reduction of soil fertility; low purchasing power of the local population; agricultural universities are located in cities; university graduates have no practical experience; undeveloped infrastructure in rural areas; low awareness, low prices, lack of modern technology and funding / support.

Implemented measures – formalization of the sector; labeling of organic products; market differentiation; transparency of the production system; creating a system of internal organic certification; creating local organic standards; creating a system for recognizing organic products.

Performance indicators – growth of the local market of organic products; emergence of new farmers producing organic products.

The experience of Nigeria. The essence of the approach – Public Farming Schemes in Nigeria: Developing Sustainable Agriculture.

Problem aspects – agricultural universities are located in cities; university graduates have no practical experience; undeveloped infrastructure in rural areas; low level of awareness, low prices, lack of modern technologies and funding / support.

Implemented measures – at the Federal University of Agriculture, an interdisciplinary working group has been established to develop technologies for

organic farming; research in four communities on an innovative program to link sustainable agricultural practices to Nigerian markets; a national conference was organized to raise awareness of organic agriculture at the national level, especially in higher education; development of the program of organic agriculture Work, Earn, Study; allocation of 180 hectares for training facilities without payment of fees; establishing interaction between students and farmers at the community level; during the fourth year of study, an extended version of organic farming was introduced as one of the training modules.

Performance indicators – increasing involvement of students in the production of more organic products to meet growing demand; conducting seminars, workshops, establishing public-private partnerships, disseminating innovations; dissemination of practice at the interregional and international levels.

The experience of Colombia. The essence of the approach – Familia de la Tierra participation system in Colombia: business innovation as a tool for social and productive change.

Problem aspects – third party certification of agricultural products; lack of state policy on systematic promotion of sustainable agriculture; lack of connection between sustainable agricultural practices and local markets; lack of sustainability of the system and sustainability of agricultural practices on farms.

Implemented measures – association of rural producers with representatives of the public and private sectors; conducting marketing research to establish an alternative sales channel for agricultural products; development of a local development plan for the district in Bogota; introduction of a small grants program for environmental and innovative practices; consolidation of the sales channel on the basis of previous orders; adoption of a sustainable development program based on land use planning at the Bogotá; implementation of an internal certification system; public discussion platforms, forums, city meetings, organic farming markets and farmers 'dialogue have led to the creation of farmers' organizations with local, regional, national and international influence.

Performance indicators – the transition from the sale of land and seeds to the marketing of value added products; diversification of crops, including promising varieties to meet the demand of market niches; creating a network of public sector-funded public stores but managed by local organizations; creating an international network of organizations.

The experience of Ecuador. The essence of the approach – strengthening the local healthy eating system: an experiment in the central highlands of Ecuador.

Problem aspects – limited forms of trade; unsatisfactory from the point of view of farmers the ways of the traditional market acts; limited influence of farmers on pricing; control of operations by intermediaries; a significant share of profits from the sale of agricultural products falls on intermediaries; consumer dissatisfaction with food quality, prices, supply instability.

Implemented measures – creation of a legal framework that promotes the development and support of initiatives for the development of local systems of production and marketing of food and agricultural products based on changes in the

Constitution of Ecuador; involve local and international development organizations to support the entry of small farmers into local markets with direct sales; creation by the government of institutional space for the implementation of the Law on Food Sovereignty; establishment of the National Consumer Commission with the representation of various social institutions to develop bills on agrobiodiversity, seeds and promote the development of agri-environment and responsible consumption and food sovereignty; a national force has been launched to educate consumers about the benefits of healthy food, to disseminate knowledge about changes in response to the food crisis and to engage in alternative initiatives.

Performance indicators – establishing communication between farmers and consumers; organization of farmers' markets; organization of farm shops; organization of public procurement; organization of schemes of work to order; achieving greater profitability of custom schemes compared to sales in the wholesale market; increasing the number of people involved in solving the problems of agri-environmental farming; increasing community involvement in agri-environmental farming.

The experience of Bolivia. The essence of the approach – an innovative mechanism for combining producers and consumers: short value chains and a system of guaranteed participation in the multinational country of Bolivia.

Problem aspects – farmers have limited access to production resources and to production and distribution chains; financial opportunities for international certification of agricultural products by small farmers are limited.

Implemented measures – implementation of social control (expert assessment), which is a mechanism of audit and monitoring at various levels and enshrined in the Constitution of Bolivia; development of public policy (where organized civil society helps to shape the social agenda in which public policy is developed); introduction of public administration control at all levels (where organized civil society requires participation in public administration planning and control); introduction of transparent information management; introduction of a private system of internal certification of organic products and products for sale at fairs; reducing value chains to the producer-consumer model; a system of laws, decrees and plans to support small farming has been developed.

Performance indicators – involvement of small farmers and households in the guaranteed participation system; increasing involvement of women in the production, processing and sale of agricultural products; an increase in the number of developers or managers of farmers' markets; product diversification; diversification of ways of using agricultural products; increasing the number of consumers who are able to recognize agri-environmental products; diversification of marketing distribution channels.

The globalization of the world creates new demands on the properties of final consumption products. Other such properties include quality, appearance and organoleptic properties, which are important for the sale of goods in consumer markets. Such product properties in combination with the final price are decisive factors in the process of consumer decision to purchase goods. To ensure competitiveness in agricultural markets, producers need to innovate. The world experience of innovation activity demonstrates that small farmers can innovate in the following areas:

– product innovations;
– functional innovations;
– innovation processes;
– intersectoral innovations.

A common feature of these types of innovations is that they are essentially collective and based on systemic or network interaction of individuals or organizations.

A number of examples of successful implementation of innovative projects in the field of agricultural production in the world allow us to summarize the experience and offer strategic approaches to the development of the domestic agricultural market:

– providing a direct link between consumers and producers, which should help increase farmers' incomes and meet consumer needs;
– improving farmers management skills to work on their own farms, as well as building participation in knowledge dissemination networks;
– creation of communication and coordination networks between different producers who are involved in the creation of similar innovations, such as organic farming;
– providing access to technical and business services provided by stakeholders in value chains;
– promotion of alternative ways to provide farmers who carry out agri-environmental production access to a local certification scheme, which is based on greater interaction and corresponds to the realities of small farmers in different contexts;
– internationalization of schemes through cooperation within similar initiatives in different countries and / or universities in order to institutionalize innovation.

Conclusions and prospects for further research. World experience shows that for sustainable development based on innovations, private businesses and civil society in the agricultural sector should build partnerships with the government in the areas of market infrastructure development, integration of sustainable agriculture into the education system, the development of the amplification programs and transparent market opportunities information exchange. The results of such a partnership are: system innovations that provide appropriate marketing rules when creating quality sustainable products; new organizational forms of activity that ensure the multifaceted integration of economic entities into food value chains; new forms of exchange in accordance with market requirements; new technologies of sustainable agriculture. The public sector plays a key role in providing a legal, political and physical environment that allows all actors to jointly create and share knowledge, practices and products aimed at sustainable development.

The proposed strategic approaches can provide a space for an open dialogue on technologies and ways of commercializing products. In the future, it is worth exploring ways and means of creating horizontal and vertical networks and platforms that provide knowledge dissemination (creation and transition), market development, resources and political support at various levels of government to interact with national and

international organizations. In order for the proposed approaches to be effective as drivers of adaptation (and utilization) of sustainable practices in Ukraine, they need the support and recognition of public, private and civil society.

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