

TRENDS OF AGRICULTURAL INSURANCE IN THE SYSTEM OF PROVIDING INNOVATIVE DEVELOPMENT OF AGRIBUSINESS

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Comprehensive development of the agricultural sector is important as one of the main directions of increasing the reliability of the state's food security, diversification of the economy, and expansion of export potential.

The agro-industrial sector plays an exceptional role in solving the economic and social problems of the country, especially in employment of the population. Complex social development of the agrarian sector contributes to increasing the reliability, stability of food security, economy as one of the main directions of diversification and expansion of export opportunities.

Agricultural production is directly related to various risks that negatively affect the sustainability of the industry. Particularly dangerous are risks that are practically impossible to control, for example, extreme weather conditions. According to FAO estimates, there is an increase in natural disasters (hydrological and climatic) in the world. The economic consequences of their influence are significant for agriculture - they account for 26% of the total volume of losses.

Taking into account the diversity and nature of the manifestation of risks in agro-industrial production, their grouping is carried out using various features: types of risks,

forms of influence, negative results of influence, etc. The set of risks that affect the activity of agricultural enterprises is given in the tabl. 1.

Table 1 – The main types of risks and forms of their influence on the activity of agricultural enterprises

Types of risks	Forms of influence	Negative results of influence
Natural	Natural erosion processes	Shortage of agricultural products due to adverse weather conditions
Man-made	Physical and chemical soil pollution, improper use of mineral fertilizers and pesticides, soil pollution with toxic chemicals, fuel and lubricants, overwetting and wind salinity of land, and increased production energy costs	Deterioration of soil quality and reduction of the yield of ecologically clean products
Anthropogenic	Water and wind erosion, deterioration of the soil structure, mechanical destruction and compaction of the soil, permanent depletion of humus and nutrients	Soil degradation, loss of soil cover, reduction of nutrients in the soil and disruption of the natural balance
Radiation	Ionizing radiation of radioactive materials in the environment	Distribution of radioactive materials on agricultural products, which leads to a decrease in its quality or makes it unsuitable for use
Environmental and economic	The use of environmentally hazardous technologies in the production of agricultural products	Decreasing the quality and competitiveness of agricultural products

Source: compiled according to data [1].

The basis of the sustainable development of agriculture is the ability of agricultural formations to resist short-term destructive actions and (or) adapt to fundamental changes in the external environment due to compensatory mechanisms.

Agricultural insurance is a form of compensatory mechanism. Its advantage lies in the possibility of use in managing not only weather and climate risks, but also market personal risks, risks of the spread of diseases and pests, as well as contribute to reducing the level of financial risks.

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The study of the agricultural insurance system showed a tendency to increase insurance tariffs as the size of economic entities decreases. In practice, insurance rates for small businesses are higher than for large agricultural producers. First of all, this is due to the fact that the loss of harvest even from a small area of crops causes an insurance event. In addition, the resources of small farms are limited, which affects the observance of agricultural technologies, the availability of the necessary agricultural machinery, as well as the involvement of professional agronomists and specialized specialists [Yarmolenko, V., et al. 2019].

An important component of the market is insurance related to agricultural producer financing programs, which accounts for approximately one third of all contracts concluded on the market and 22.9% of all insured areas. The terms of insurance under these contracts are slightly different from those that apply on average in the market. In particular, the average premium rate under these contracts is 3.8%. Accordingly, the share of contracts concluded through the Agrarian Fund and DPZKU in the total amount of collected insurance premiums is 53.9%.

Among the insurance programs offered by domestic insurers, total death and multi-risk are the most popular - 40.1% and 26.4% (table 2).

Table 2 – Use of insurance programs by agricultural enterprises of Ukraine, 2019

Program	Part of contracts	Part of the insured share square	Part of the insurance sum	Share of collected premiums	Share in the victim square	Part of payments
Perennial plantation	0,2%	0,1%	1,7%	0,7%	0,0%	0,0%
Complete death	11,0%	12,0%	7,9%	12,2%	0,0%	0,0%
Complete death + spring frosts	40,1%	41,9%	13,9%	14,9%	68,6%	81,7%
Others (roses)	0,1%	0,0%	0,5%	0,1%	0,0%	0,0%
Multi-risk (future insurance crop)	26,4%	21,3%	46,0%	57,7%	31,4%	18,3%
Multi-risk (crop insurance before harvesting)	1,6%	1,4%	2,7%	1,5%	0,0%	0,0%
Named risks	15,4%	11,6%	25,3%	10,8%	0,0%	0,0%
Partial and complete death + spring frosts (winter crops)	5,2%	11,7%	2,0%	2,2%	0,0%	0,0%
In general	100%	100%	100%	100%	100%	100%

Source: compiled according to data [2].

Depending on the period for which agricultural crops are insured (winter or spring-summer season), certain insurance services are in demand. According to the

data of the analytical study of the agricultural insurance market, which was conducted by the Ministry of Agrarian Policy and Food of Ukraine, during the winter period, insurance against total death and spring frosts is in demand (73.1% of the total number of contracts), insurance against total death is in second place (20% of the total number of contracts) and insurance against partial and total death and spring frosts (6.5% of contracts). In the spring-summer season, the largest share of contracts consists of future crop insurance contracts against many risks (57.7% of the total number) and insurance against named risks 34.2%, other types of insurance occupy no more than 4 percent of the share of contracts.

As for combined insurance, it is only beginning to be in demand among consumers.

Thus, despite the fact that agricultural insurance is the most important method of reducing losses from climate change and despite the significant need for such protection, only the first steps have been taken in Ukraine to develop it.

Today, Ukraine does not have a sufficient basis for the use of various types of insurance products, therefore, the most common for combating the consequences of climate change on the domestic insurance market are classical insurance products (ie, insurance against individual risks). As a result, there is a need to form a balanced model of agricultural risk insurance, which should include: improvement of risk assessment methodology; formed normative and legal basis of agricultural insurance activity; a wide range of insurance products that can be applied to various business entities (large and small farmers); formation of a multi-level structure of types and forms of insurance; Ukraine is included in the list of world leaders in the production of agricultural products, and occupies a leading position in the cultivation of many crops - wheat, sunflower, barley, corn. At the same time, we do not have an effective national agricultural risk insurance system that would provide the necessary protection to both farmers and state investments. The agricultural insurance market covers about 5% of domestic agricultural producers, while in developed countries this figure exceeds 60%, and in some it even reaches 100% (Cyprus, Israel).

This level of domestic agricultural insurance is unacceptable for a country that is able to feed, if not the entire world, then at least a significant part of it. Ukraine is constantly increasing the volume of production of agricultural products, for example, last year a record grain harvest was collected - 63 million tons, and currently, despite all the difficulties of political and economic life, it is expected to surpass this result. But this in no way affects the increase in the volume of insurance in this area, which is caused by the too high cost of insurance protection for farmers.

Let's give a simple example: to sow 1 ha of winter wheat, you need to spend 2500 hryvnias, but to insure it, you have to spend another 90-150 hryvnias. In addition, each region has its own tariffs and this circumstance must also be taken into account. In favor of insurance, the fact that when the vegetation resumes in the spring in the event of a loss of 50% or more of crops, the insurance payout will range from UAH 1,750 to UAH 2,000. Insurance compensation is considerable, but not all producers of agricultural products manage to get it and not always, because insurers delay the return of these payments or find numerous reasons not to do it at all.

Insurance companies can be understood, because they have their own business interest, but state bodies often correct the behavior of agricultural producers, when district agricultural administrations often "give" farmers which insurance companies to enter into business relations with, and which to refuse.

The second important player in the agricultural insurance market is himself. For a long time, the Ukrainian agricultural insurance market belonged to those that are developing and worked, mostly not for the long term, but was guided by immediate profit. The main task for insurers was to maximize the collected insurance premiums, even under dumping conditions, while insurance contracts were sometimes signed without prior review, and crop inspections, according to insurance rules, were not carried out at all. It seems that the insurers did not intend to fulfill their obligations.

To a large extent, the transition to civilized rules of the game is connected with the arrival of insurance companies with foreign capital on the Ukrainian agricultural insurance market. They brought with them a different culture of agricultural insurance,

which does not involve quick money, but constant work with clients who are offered high-quality services at market prices, and contract agreements are actually fulfilled.

Insurance companies with foreign capital pay great attention to the formation of a stable insurance portfolio by establishing long-term relationships with clients, because cash receipts and prospects for further work depend on this. In the table 3. the results of the activities of the main insurers engaged in the insurance of agricultural products in 2019 are given.

Table 3 – The main indicators of the work of insurance companies for voluntary insurance of agricultural products, 2019

Insurance Company	Insurance premiums, thousand UAH	Insurance payments, thousand UAH	Payout rate, %
1. «PZU Ukraine»	98 376	51 689	52,54
2. «ARX»	43 984	27 875	63,38
3. Insurance company «Etalon»	30 132	2 108	7,00
4. Insurance company «UAIC ASKA»	19 778	1 636	8,27
5. AIC «INGO Ukraine»	12 376	23 717	191,64
6. «Universalna»	7 837	55	0,70
7. «Brokbisnes»	4 532	–	–
8. «Inter-Plus»	1 771	–	–
9. «Ukrainska pozhezhno-strakhova kompaniia»	1 694	149	8,81
10. «IG «TAS»	1 390	138	9,93

Source: compiled according to data [2].

At the same time, not a single insurance company from the group of classics of domestic agricultural insurance entered the Agrarian insurance pool. Although it was assumed that they will form the basis of this public association of insurers and will significantly influence the formation of the principles of its activity. In 2021, the provision regarding the insurance of agricultural products through the Agricultural Insurance Pool was abolished at the legislative level.

The beginning of the formation of a new ideology of agricultural insurance should be based not on who and how many hectares were insured, but on who and how serves agricultural producers. Simply put, we must implement the modern culture of agricultural insurance, which has already been tested by agriculturally developed countries. The necessary toolkit, which makes it possible to significantly increase the level of agricultural insurance culture, was offered by the IFC Project "Development of agricultural insurance in Ukraine", which ended in 2018. First of all, we are talking about a thirty-year crop yield database, which cannot be dispensed with when calculating tariff rates rates, about standard insurance products developed for 11 field crops, about the accident commissioners certification program, about the web platform used for concluding and maintaining insurance contracts, about legislative developments [Velychko, A., et al. 2020].

Technological innovations can significantly reduce costs in agricultural insurance. From this point of view, it is difficult to disagree with the following opinion. "Technological innovations, such as satellite weather monitoring and computer models for early warning of hazards, are significantly reducing agricultural insurance costs. These parametric tools, in addition to the spread of technological innovations, significantly reduce, and sometimes completely eliminate traditional problems". Indeed, technological innovations in agricultural insurance reduce the traditional problems arising in the field, including the costs of solving issues brought to the legal level, additional costs due to the elimination of selection errors, and so on.

Indicators used in the process of implementing agricultural insurance innovations can be distinguished as groups related to weather conditions and productivity. As one of the areas of development of state-supported insurance

instruments for small businesses, the improvement of the mechanism of using indices related to weather conditions is of particular importance.

The following position deserves attention: "In indexed insurance, there is no direct assessment of the actual loss of a specific farm, and the amount of insurance compensation is determined according to a predetermined model. Advantages: it allows to significantly simplify the conclusion of the insurance contract and settlement of losses [Rubtsova, N., Radchenko, N., Trusova, N., et al. 2021].

One of the factors preventing the wide spread of index insurance is the large volume of preparatory work associated with the formation and processing of data on the state of crops. With index insurance against the weather factor, there may be subjectivity in the quantitative expression of the indicator provided for in the contract. This is a serious drawback, because in this type of agricultural insurance, the loss of the agricultural producer is estimated according to this indicator. With this approach, some of the real signs of damage may go unnoticed.

In general, the following position can be considered acceptable with some conditions. Weather-related insurance not only helps to minimize the high risks of producers and agricultural economic agents, but also reduces the costs of the government to help victims of natural disasters.

Today, the state does not have a sufficient resource base that could be used for the formation and control of a transparent, stably functioning agricultural insurance system - there is a lack of funding and human resources. The state faces a number of important tasks, some of which can be implemented by implementing a high-quality agricultural insurance system. Having built a stable and transparent system of partnership between the private sector and the state, it is possible, first of all, in the event of catastrophic natural disasters, to protect farms from bankruptcy, protect them from non-payment to creditors, prevent sharp jumps in the profitability of agricultural producers, and strengthen their financial stability with the help of subsidizing insurance premiums.

It is necessary to use the existing resources, to clearly establish the functions for the players of the agricultural insurance market and to carefully monitor that they are

strictly observed. These functions assume that insurers must work honestly and transparently, agricultural producers must be actively involved in agricultural insurance work and also act according to generally accepted rules, and the state must ensure the sustainable operation of agricultural insurance as a component of the system of innovative development of enterprises by all stimulating measures - legislative, financial and other .

In foreign countries, the increasing attention of public administration bodies to the development of agricultural insurance with the help of various forms is emphasized, which stimulates the need for research and the development of directions for its improvement to ensure the sustainable development of the agricultural industry.

It is necessary to improve the system of agrarian insurance on the basis of accelerating the formation of the regulatory and legal framework; increasing the interest of both agricultural producers and private insurance companies in the insurance of subsidies provided by the state to insurance companies, thanks to the partnership of state and private units in agricultural insurance; optimization of the process of changing the specific weight of voluntary and mandatory types of agricultural insurance work in terms of implementing national food security priorities; it is necessary for insurers to be fully informed about the possibilities of counting on state assistance in the agricultural sector, and producers to be fully informed about the possibilities of concluding a contract on preferential terms .

As a direction of improving the agricultural insurance system, the issue of increasing flexibility in risk management and forming an information base at the level of necessary requirements, as well as digitalization of insurance, deserve attention. As a result of the use of digital technologies in insurance activity: the efficiency and profitability of insurance activity will increase; the convergence of mutual and commercial insurance will continue; insurance relations will be socialized; new insurance services and products will appear; the labor market of the insurance industry will change.

The basis of the sustainable development of agriculture is the ability of agricultural formations to resist short-term destructive actions or to adapt to radical

changes in the external environment. A necessary condition for the transition to it is the formation of compensatory mechanisms aimed at leveling the negative effects of the internal and (or) external environment on agricultural activity.

Agricultural insurance prevents high fluctuations in monetary income of agricultural producers, contributes to the continuity of the reproductive process in agriculture and the national economy. It can be used to manage not only weather and climate risks, but also market, personal, disease and pest risks, and help reduce financial risks.

In the ten largest countries in terms of the volume of premiums collected in the segment of agricultural insurance, the high level of insured acreage, active forms of participation in the development of agricultural insurance by public administration bodies, the presence of state reinsurance, and various forms of ensuring the economic availability of insurance products are emphasized. Identified trends, namely: growth in the volume of state financing of agricultural insurance programs (through subsidizing insurance premiums), increase in the number of initiatives in the development of national agricultural insurance systems, increased competition of large reinsurance organizations for agricultural insurance markets in developed and developing countries.

The National Bank of Ukraine, as part of the implementation of government programs for improving state support for farmers in 2021, took the first step to launch the agricultural insurance system. Thus, the regulator approved the requirements for the admission of insurers to the activity of insurance of agricultural products with state support.

The result of the cooperation of the National Bank, the Ministry of Agrarian Policy and Food of Ukraine, participants of the agrarian and insurance markets was the Law of Ukraine "On the peculiarities of insurance of agricultural products with state support". The document, in particular, significantly updated the approaches to the system of agricultural insurance with state support, which became part of the system of support for farmers, which consists of lending, insurance, compensation for losses from damage to agricultural crops as a result of man-made and natural emergencies,

promotion of the development of animal husbandry and processing of agricultural products.

The implementation of the provisions of this Law involves a number of joint measures for the development and adoption of legislative and regulatory acts aimed at launching the agricultural insurance system. The requirements for the admission of insurers to the activity of insurance of agricultural products with state support have been approved, the process of developing the procedure and conditions for providing state support for the insurance of agricultural products, the maximum sizes of insurance tariffs and standardized insurance products is being completed.

During the study of agrarian insurance, the tendency of state administration bodies to move from direct forms of participation in the development of agrarian insurance (directly providing insurance, developing insurance conditions, etc.) to indirect forms (subsidizing insurance premiums) was revealed. The modern stage is characterized by: widespread use of digital technologies in insurance, use of insurance products developed by foreign companies in crop production; weak accumulated informational and statistical base, insufficient attention from state administration bodies in the field of agricultural insurance development and agricultural risk management in general, signs of the problem of adverse selection, low interest in agricultural insurance by both policyholders and insurers [Herasymenko, N., et al. 2021].

A systematic approach in agricultural insurance enables the state to manage the burden on the budget, especially in catastrophic years, when many agricultural producers may suffer from the effects of natural disasters. By compensating a part of the insurance premium, the state transfers part of the risks to the private sector, which in many ways is more efficient in analyzing volumes and paying out losses. A so-called public-private partnership is emerging - where there is a clear role of the state and the private sector.

In all countries where there is a system of agricultural insurance with state support, it is expressed mainly in the form of subsidies to compensate part of the premium, which makes agricultural insurance more affordable for the agricultural

producer. At the same time, one of the foundations of agricultural insurance systems is standard insurance products that the state develops and/or approves and includes in the subsidy program. This is primarily in order to guarantee the quality of the insurance and to guarantee the receipt of payment in the event of a loss. But government support is not limited to subsidies and insurance products, it also includes educational programs to popularize agricultural insurance for agricultural producers, protect their interests, and accumulate data to improve the program or create new solutions [Zaripov, A., et al. 2020].

In the near future, it is necessary to completely reset the current rules of the game, to carefully review the existing agricultural insurance tools in order to continue using only those that provide the maximum economic effect.

To form a competitive agricultural sector of the country and improve its provision of financial resources, it is necessary to assess all risks in this area, as well as to improve the mechanism for reducing or mitigating risks. The strategic goal prompts the selection of three priority directions. The first priority is measures to improve the financing mechanism of the agricultural sector. The second priority includes measures for the development of agricultural insurance in the country.

Priority directions for improving agricultural insurance include: transformation of the institutional infrastructure of agricultural insurance, improvement of information and statistical support in the industry, adaptation of insurance products to the peculiarities of the agricultural industry, introduction of differentiated insurance tariffs. Due to the complexity of the concept of agricultural insurance and the related product development process, a single center of knowledge should be created, which would conduct educational activities for both farmers and insurance companies and control this process.

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