Innovative mechanisms of agricultural insurance in post-pandemic realities

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Abstract. Agriculture is a continuous process of agricultural production and processing of agricultural land. Accordingly, this type of activity cannot be in a mode of self-isolation. In spite of this, the Pandemic has affected both the economic activity and the financial results. This affected high-value goods, as well as value-added goods. Meat production is a case in point; demand for expensive meats will drop significantly. The result could be an increase in consumption of poultry, as it is a cheap alternative to meat. Restrictive measures taken by the government in connection with the growth of Covid-19 have affected the demand of citizens for insurance services. Many producers of agricultural services have given serious thought to the need to review their insurance policies. This article examines and analyzes the financial mechanisms of agricultural insurance under post-pandemic realities. It is the insurance mechanism that will allow agricultural producers to develop confidently and have a guarantee of minimizing financial losses in case of unforeseen situations.

1. Introduction
The instability of the economic system under the coronavirus had a negative impact on agriculture, in particular on the crop industry. According to financial analysts, crop production will develop unevenly. Despite the decrease in income of crop consumers, there has been an increase in demand for borsch set products. There is the similar situation with demand for crops [1].

Besides, crisis influenced the shortage of working hands, migrants, who are the main cheap labor force, could not come to the country. Accordingly, producers can only rely on domestic resources, which significantly affects the rise in price of final products. It is especially worth emphasizing that the crisis resulted in the destruction or loosening of economic ties between people, cities and countries.
The weakening of the ruble was reflected in the increased cost of imported machinery, fertilizers, seeds, etc. As a result of the pandemic, the emergence of the need to move to the automation of production. Even a small shift towards automation in the agricultural industry will lead to significant savings of time and money.

2. Purpose and object of the study
The purpose of the study is to consider the financial mechanisms of agricultural insurance in the post-pandemic realities.

The object of the study - agricultural insurance with state support in Russia.

3. Results and discussion
The specificity of the financial mechanism of insurance consists in the formation of monetary funds, the purpose of which is to protect the financial interests of the participants of the funds. The obligatory nature of the funds includes certain features, among which [2, 3]:

- the need for employer participation in the payment of insurance premiums;
- state responsibility for the solvency and financial sustainability of the insurance system, which involves the inclusion of state subsidies and grants;
- determining the amount, the procedure for calculating payments and premiums;
- establishing the equivalence between insurance benefits and premiums.

Figure 1. Damage from emergencies in the agro-industrial complex of Russia (in billions of rubles).

According to the data of the regions in 2020 the damage, taking into account the loss of production, amounted to more than 20 billion rubles. About 1.2 million hectares of crops were insured in the affected regions.

Insurance payments to the agrarians for 8 years exceeded the volume of compensations from the budget and amounted to 32.1 billion rubles. To compensate losses from unforeseen situations when allocating aid from the federal budget since 2018 the availability of an insurance contract is taken into account. Currently there are discussions on the issue of a gradual transition to compensation for damage through such a financial mechanism as insurance. A prime example is the budget subsidy programs of the United States, India, Italy, and Austria. The size of the insurance subsidy in these countries can vary from 30 to 80% of the insurance premium. The size of the percentage depends on the object of insurance, the level of insurance coverage, insurance risk, etc [4, 5].
If we consider animal insurance, it is subsidized less frequently and the amount of subsidy is much lower. The subsidies are most often directed to insurers, which allows policyholders to pay only their share of the insurance premium. Despite this convenient mechanism of subsidies, there are countries where premiums are paid directly to agricultural producers who have concluded subsidized insurance contracts. Among such countries are Ukraine, Moldova [1].

The Ministry of Agriculture expects that the amount of state support for insurance against emergencies will increase. Since the crisis caused by the coronavirus demonstrates the need to introduce insurance as a prerequisite for the development of agriculture. According to the program, only direct expenses will be compensated in case of emergency situations. It is assumed that from this year, the insurance system will be extended to perennial plantations, i.e. it will be possible to insure the crop only on the part of the area, income of the agricultural producer, direct costs of crop cultivation, etc. The new insurance system should be more accessible to farmers. Now it is already subsidized by the state: the farmers are compensated half of the cost of the policy. And the bill proposes to increase the subsidization of small and medium agribusinesses up to 80% of the insurance premium. In the first year the amount of subsidy for other agrarians will also be 80% of the insurance premium, and every year thereafter the amount of state support will be reduced to 50% of the insurance premium. In addition, the system of damage assessment will be simplified. After all, when insuring against the risk of emergencies, not the cost of planned and lost future crops will be compensated, but only direct costs of treatment of affected crops or plantings - plowing, sowing, fertilizer application. Accordingly, the terms of payments will be reduced, which will not be tied to the terms of harvesting [6, 7].

In our opinion, it is necessary to highlight the negative trends formed under the influence of coronavirus:

1) food consumption culture. The demand for consumer durables has increased. According to average citizens, when buying such products, visits to the store are reduced, which will affect the probability of "staying healthy. The result was an increase in demand for borsch set products (potatoes, carrots, beets, onions) and a decrease in demand for perishable products - tomatoes, cucumbers, berries, etc. The pandemic has affected the decline in income of the population, as many lost their jobs. The demand for foods that improve the immune system, such as garlic, onions, and citrus fruits increased. As people's health and safety have come to the forefront, individually packaged products are perceived by consumers as safer, which affects the positive sales dynamics.

Figure 2. Europe's largest agricultural markets. Source: https://www.zol.ru/n/329d4.

In 2020, the global agricultural market is growing at a rate of about 1%, exceeding $56 billion. Thanks to growing markets in Asia and Latin America, global agricultural markets have grown. For
2020, the market for agricultural products grew by 3%, while the European market continued to decline and was down 1% from 2019.

In 2020, Russia became the largest agricultural market in Europe (figure 2). Despite the positive dynamics, the domestic agricultural market faced certain difficulties in 2020, which caused a decrease in the area sown in sugar beet, stagnation of the area under sunflowers. Cereal and corn acreage increased, managing to contain the market decline [8].

The reason for the growth was the process of intensification of production, which is aimed both at obtaining a crop and improving its quality.

2) The transformation of mechanisms for the sale of agricultural products. Due to the closure of borders, many countries were blocked for imports and exports. The result was a significant increase in the price of delivery of fruits and vegetables. The way out of this situation will be the transition of business to full digitalization. Thanks to a crop insurance contract, it is possible to minimize financial losses from the loss of crops by 20%. Domestic structure of protection of agricultural producers from risks consists of 5 levels (figure 3).

![participation of the insured in the coverage of arisen agricultural losses in the case of insurance with state support](image1)

![participation of private insurance companies and their liability under the contract of agricultural insurance](image2)

![the institute of the association of agricultural insurers](image3)

![federal agricultural insurance reserve](image4)

![reserve Fund of the Russian Federation](image5)

**Figure 3.** Structure of agro-industrial risks. Source: compiled by the authors.

As shown in figure 3, the first level assumes the possibility of participation of the insured in the coverage of losses in insurance with state support. The second level involves the functioning of private insurance companies and their liability under the agricultural insurance contract. The next level includes the institution of a union of agricultural insurers established with direct state participation. The purpose of such a union is to reduce the probability of bankruptcy of an agricultural producer. The last two levels of the structure represent the Federal Agricultural Insurance Reserve and the Reserve Fund of the Russian Federation. Funds from the reserves are directed to the insurer's account only if the amount of insurance compensation is insufficient to cover the damage. The funds can also be used to develop and carry out preventive measures to preserve the harvest [9, 10].

As the experience of other countries has shown, there is a need for zoning the agricultural area for the proportional allocation of funds in the form of subsidies.

### 4. Conclusion

Based on the above, the authors conclude that it is advisable to revise the system of insurance of agriculture against risks associated with the occurrence of emergencies. To minimize the financial losses of agricultural producers it is necessary to improve the mechanism of subsidizing, to make it more clear and transparent for farmers. Many who wish to take advantage of subsidies with the possibility of risk
insurance may have difficulties in obtaining insurance under state-supported insurance programs. The speed of obtaining funds for liquidation of consequences from unforeseen adverse events is also an important aspect of this process.

In our opinion, agricultural producers need to use the insurance mechanism to obtain better financial results. But in today's realities there are a number of difficulties with obtaining insurance under state-supported insurance programs. There is no mechanism to protect the interests of agricultural producers in their relations with insurance companies. In this regard, there is a need for joint interaction of three elements - the state, the insurance company and the producer.

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