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## State regulation systems of agricultural insurance

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**Abstract.** The classification of entrepreneurial risks in the agricultural sector was reviewed and summarized. The current state of the agricultural insurance system, implemented with state support in the Russian Federation was studied. The paper considers the practice of agricultural insurance of foreign countries. The main reasons restraining the development of insurance in the agricultural sector and directions for improving the agricultural insurance system with state support in the Russian Federation were identified: the improvement of the agricultural insurance conditions established by law with state support; increasing financial stability and creating the necessary conditions for attracting the majority of agricultural producers to participate in the insurance system; expanding the line of insurance products; improving the procedures for concluding contracts and settling losses; and promotion of insurance as a risk management tool.

### 1. Introduction

Doing business in the field of agricultural production is associated with a large number of risks. The damage, as a result of the impact of adverse natural factors, significantly reduces its financial stability, as well as generally negatively affects the development of rural areas. The production and sale of agricultural products is associated with situations leading to loss of profits or even producer resources, insolvency of the enterprise and bankruptcy. The agro-industrial complex has its own specific features, which requires entrepreneurs to in-depth study of the risks, to the maximum extent affecting the formation of economic conditions and obtaining the final result.

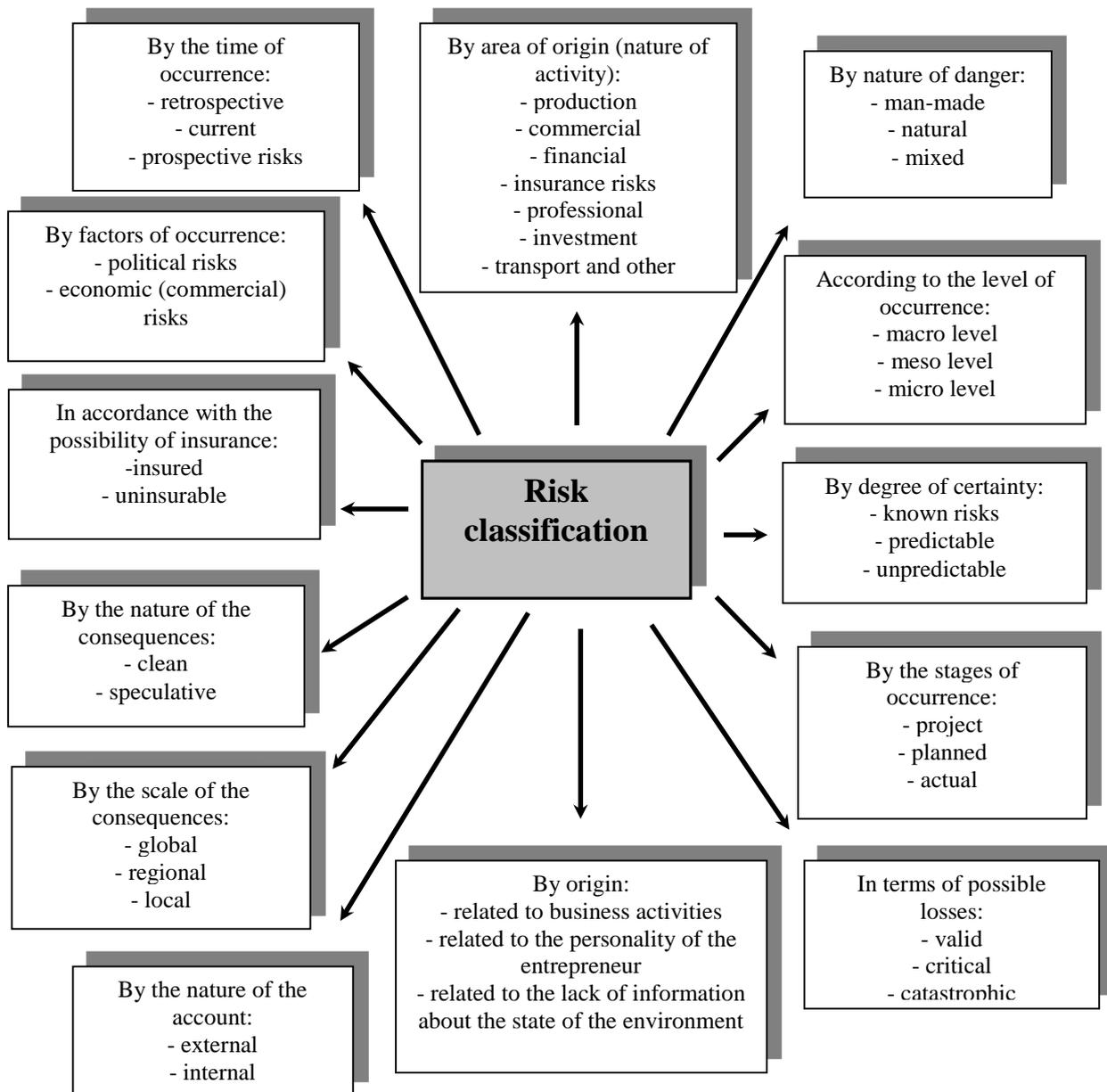
Addressing the issue of reducing the risks of agriculture has several ways of development and requires the participation of several parties, including agricultural producers, the state and insurance companies. Insurance in agriculture is a necessary tool that is designed to ensure the development of agribusiness, the effective protection of the property interests of agricultural producers from various kinds of risks. A large role in the field of agricultural insurance is agricultural insurance with state support. Analysis of foreign agricultural insurance systems, the study of agricultural insurance, the identification of problems in this area and the development of directions for improving agricultural insurance is one of the important tasks of strategic importance for the Russian agricultural industry [1, 2]. The purpose of the study is to identify areas of improvement of the agricultural insurance system with state support in the Russian Federation.



In the course of the study, the following methods were used: abstract-logical method, situational and system analysis, expert assessment method, graphic.

**2. Research results**

In the economic literature there are various approaches to risk classification. The diversity of approaches is due to both the diversity of existing risks and the difference among the researchers of the goals set (figure 1).



**Figure 1.** Business risk classification.

Risk management is the process of making and executing managerial decisions aimed at reducing adverse outcome occurring and minimizing possible losses caused by its implementation. Risk management is a part of general management and deals with the planning, management and control of all risks related to the enterprise. That is, the task of risk management is to prevent or limit unwanted

deviations from the intended goals of the enterprise in order to facilitate enterprise planning. Risk management consists of systematic analysis, identification and risk management. The key stage of risk management is the stage of choosing methods and tools for risk management. The basic methods of risk management are risk rejection, reduction, transfer and acceptance. Risk tools are much wider. It includes political, organizational, legal, economic, social tools, and it is possible to simultaneously apply several risk management methods and tools [5, 7, 16].

One of the effective tools of risk management in the agricultural sector is insurance, which allows agricultural producers not only to compensate for losses associated with the loss of agricultural products, but also to protect themselves from possible bankruptcy, pay off debt obligations, increase the predictability of financial performance [1, 2, 6, 17]. The use of this tool does not violate WTO rules and can potentially serve as an effective tool for stabilizing the incomes of agricultural producers, developing the industry, and having a positive effect on the investment attractiveness of agriculture.

State support for insurance of agricultural risks in order to ensure the sustainable development of the agricultural sector is typical for most countries of the world [13, 14]. The most common form of agricultural insurance support by the state is subsidizing insurance premiums (USA, China, Turkey, as well as most European countries). Crop production is the most exposed to weather risks, and therefore about 90% of the world agricultural insurance premium is crop insurance.

Accelerated development of the world agricultural insurance market fell on the period from the beginning of the 2000s. According to the International Association of Agricultural Insurance Companies (AIAG), over the decade from 2005 to 2015, the volume of this market has quadrupled, exceeding \$ 30 billion. The reason for such growth was the reforms in the system of agricultural insurance, carried out from the late 90s to the beginning of the second decade of the XXI century, primarily in the USA, China, India, but also in small countries such as the Philippines and several African countries. At the beginning of 2017, the national agricultural insurance markets of the USA, China, India, Canada, Spain - the countries that are among the leaders in the global agricultural production (tab.) [1, 4] - are characterized by the largest volumes.

Agriculture is the most important sector of the world economy and a source of well-being of the population. The issue of agricultural insurance has become particularly important today, when Russia took the leading position in the world in the development of the agro-industrial complex. The main competitors of Russia in this market - the USA, China, India, the EU countries - over the past 15 years have made breakthroughs in the development of their systems of insurance protection of agricultural risks. According to AIAG, over 10 years, the global agricultural insurance market has grown 4 times and exceeded \$ 30 billion. At least 70% of global agricultural insurance comes from insurance with state support, which in 2017 provided coverage from 30 to 85% of crops.

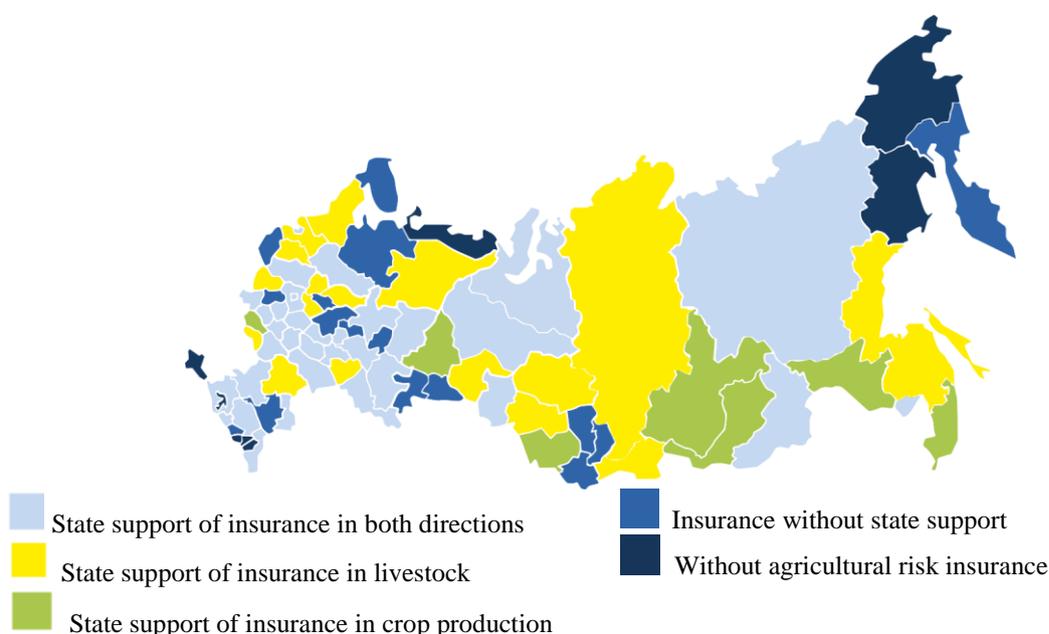
**Table 1.** The largest agricultural insurance markets in the world and in Russia, 2017 [4].

Country	Insured area of crops, %	System of insurance	Subsidies, %	Insurers' pool	State reinsurance
USA	85	Multi-risk	>70	-	+
China	35	Multi-risk	80	+	Partial (+/-)
India	30	Multi-risk	80	-	+
Canada	85	Multi-risk & from hail	55	-	+
Spain	60	Multi-risk	50	+	+
Turkey	23	Multi-risk	50	+	+
France	55	Multi-risk & from hail	65 (multi-risk)	-	-
Italy	20	Multi-risk	65	In a restricted form	-

Germany	60	From hail	0	-	-
Argentina	58	Multi-risk & from hail	0	-	-
South Africa	40	Multi-risk & from hail	0	-	-
Russia	Less than 2	Multi-risk	Up to 50	-	-

In Russia, agriculture generates an average of 4.5% of GDP. The development of the agro-industrial complex stimulates economic growth (in Russia, since 2012, total GDP grew by 26%, while agricultural products - by 65%), ensuring food security and reducing social tensions. At the same time, agricultural production is subject to risks associated with adverse natural phenomena. For example, due to extreme drought in 2010, 43 constituent entities of the Russian Federation were affected, the damage only on direct costs exceeded 41 billion rubles. Despite the fact that in 2017, a record grain harvest was collected, 21 constituent entities of the Russian Federation introduced a state of emergency due to the impact of adverse weather events [12].

Currently, there is a multi-risk system of insurance of agricultural risks with and without state support in Russia (figure 2). State support for agricultural producers in terms of insurance of agricultural risks was introduced for the first time in 1993, it concerned crop insurance. The state support system in the field of animal insurance was introduced by law from January 1, 2013, and the aquaculture insurance system from January 1, 2019. In accordance with the law in force, state support for agricultural producers is in the form of grants for compensation of 50% of the accrued insurance premium under agricultural insurance contracts, which are provided to agricultural producers at the expense of budget funds and are transferred to the insurer's current account. In order to receive a subsidy from the state, the policyholder submits an application to an insurance company that is a member of the National Union of Agricultural Insurers (NUAI). As of March 14, 2019, the “Joint Association of Insurers of the Agro-Industrial Complex - the National Union of Agricultural Insurers” includes 16 insurance organizations eligible for agricultural insurance with state support.

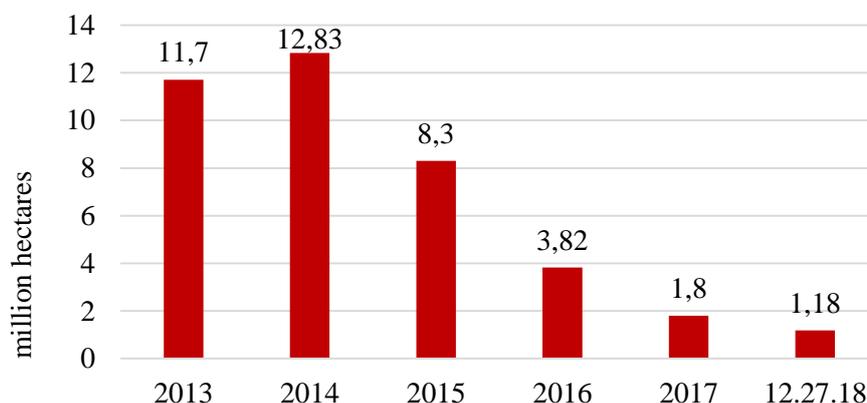


**Figure 2.** Agricultural insurance in the regions of the Russian Federation in 2017 [4].

According to operational data, as of December 27, 2018, 26 constituent entities of the Russian Federation participated in crop insurance with state support. In 2018, less than 2% of the total area under crops was insured (from 25% to 90% in world practice). The sown (planting) area of the agricultural crop insurance contracts accepted for subsidizing amounted to 1.18 million hectares, or 1.5% of the total

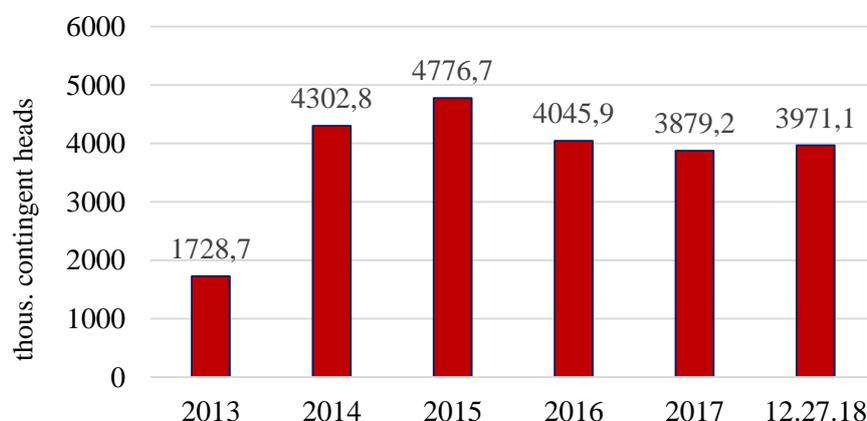
sown (planting) area. For the period from 2013 to 2018, the maximum for the insured area was observed in 2014, and then we observe a sharp decline in this indicator until 2018, which is the result of ineffective agricultural insurance policies with state support (figure 3).

As of December 27, 2018, 334 insurance contracts were accepted for subsidies, the insurance amount for insurance contracts accepted for subsidies was 24,276.5 million rubles, and the accrued insurance premium was 988.8 million rubles. The average insurance rate was 4.1%.



**Figure 3.** Insured area under crops (with state support), million hectares.

However, in 2018, there were still slight positive changes in terms of increasing the insured number of farm animals in comparison with 2017 (figure 4).



**Figure 4.** Livestock of insured animals, thous. contingent heads.

Under contracts accepted for subsidization in 2018, 3,971.1 thousand contingent heads were insured, including cattle - 790.9 thousand heads; small cattle - 11.6 thousand heads; pigs - 4,664.2 thousand heads; horses, mules, donkeys - 0.8 thousand heads; rabbits, fur animals - 2,257.8 thousand heads; poultry - 83.3 million heads. The insured livestock makes up 13.8% of the total livestock of farm animals in the regions of the Russian Federation. The state support system in the field of animal insurance was provided for by law from January 1, 2013, so this year there is a minimum number of insured animals with state support.

In 2018, the total insurance amount for the agreements accepted for subsidizing amounted to 92,040.6 million rubles, and the accrued insurance premium was 792.1 million rubles. The average insurance rate was 0.9%.

The practice of agricultural insurance in Russia for 2012–2017 showed that the main risks leading to insurance payments in crop production are associated with the phenomena of moisture deficiency - soil

and atmospheric drought, as well as dry winds. During this period, losses from this category accounted for 65.1% of payments made by members of the NUI for insurance of crops. The third place with a share of 8.6% was taken by the risks related to the wintering period of crops - freezing (the main risk for winter crops - the share in payments is 8.1%), asphyxiation, ice crust. The risks of waterlogging and flooding took the fourth place (15.8% of payments). Significant risks were also hail and strong wind (5% of payments), as well as frost (4.3% of payments). In addition, dust storms, the spread of harmful organisms, and natural fires led to losses of insured crops during this period. In animal insurance, almost all payments recorded in the database of the National Union of Agricultural Insurers are made at the risk of infectious diseases. There were also isolated cases of death of the insured population due to a power outage due to natural phenomena, avalanche and wildfires [4].

In many countries of the world, agricultural insurance is one of the most effective mechanisms for the financial protection of an agricultural producer. Today, the level of development of agricultural insurance in the Russian Federation does not allow us to talk about using this tool as a system institute for the development of the agro-industrial sector, with a range of opportunities that are widely used in international practice. Weak points in the agricultural insurance system with state support are as follows: demotivation of agricultural producers for insurance in the conditions presented in the legislation; lack of free financial resources for farmers to pay insurance premiums; the possibility of direct damages from natural disasters by agricultural producers from the state; the underdevelopment of the network of meteorological posts in various areas and the lack of reliable data on weather conditions at a specific point; lack of awareness of agricultural producers about the possibilities of insurance protection; distrust of the insurance system.

The main directions of improving agricultural insurance are the following:

- improving the statutory conditions of agricultural insurance with state support;
- expanding the line of insurance products;
- additional incentives for farmers to insure;
- development of small business insurance;
- improvement of claims settlement procedures;
- development of information interaction of the main participants of the agricultural insurance system;
- promotion of insurance as a risk management tool.

### 3. Conclusion

Most of the territory of Russia is located in the zone of risky agricultural production, as a result of which agriculture annually suffers huge losses, if an effective insurance system is not built, all risks are borne by the state. The system of agricultural insurance with state support is of great strategic importance for our country. Currently, an important task is to bridge the gap between Russia and its main competitors in the global market for agricultural products, which has arisen in the use of insurance tools to protect the risks of farmers. The agricultural insurance system is faced with the task of maximally approximating insurance protection conditions with state support to the needs of the agricultural sector, in terms of insurance programs, procedures for concluding contracts and settling losses, ensuring the affordability of insurance services, improving their quality, developing a system of state control and supervision of insurance entities of the market.

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