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**Global Challenges and Prospects of the Modern Economic  
Development**

**LEGAL ASPECTS OF DIGITALIZATION OF ORGANIC  
AGRICULTURE**

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**Abstract**

The development of agriculture in the Russian Federation in recent years has been closely linked to the need for environmentally friendly food products produced with minimal use of harmful substances. The food security of the country and the recognition of Russian-made eco-products on the world market for agricultural goods, of course, should be guaranteed not only by production volumes, but also by the quality of products. Special attention should be paid to the implementation of Blockchain principles, labeling with QR codes and control of seed products at different stages of production, as the first step towards growing eco-products. Digital technologies should also protect the interests of the consumer, namely by labelling eco-products and including organic agricultural products in the list of goods subject to mandatory labelling by identification. The quality and recognition of eco-products produced according to all domestic and world standards is proposed to be protected by developing and registering geographical indications for environmentally friendly agricultural products produced in Russia. The consumer should be sure that by acquiring Bashkir honey, Vologda oil and other famous Rossi products, he receives a guarantee of the quality and safety of the product as an eco-product. The study concluded that efforts to develop the organic agricultural sector, combined with modern digital achievements, can have a multiplier effect on the entire agricultural industry, ensure food security of the country and increase the income of the Russian Federation from agricultural exports.

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*Keywords:* Digitalization of agriculture, geographical names, labelling, organic products



## 1. Introduction

Until the middle of the 19 century, botanists and zoologists were limited only to observing plants and animals, which made it possible to form the theoretical foundations of crop production and animal husbandry. And only the last century and a half the basis of agriculture was scientific experience and experiment. In agriculture, a high dependence on the human factor has traditionally been clearly expressed - as a result, a relatively low yield at a relatively high cost of production. As a result, the profitability of crop production and livestock production depended more on market conditions.

New technologies, including digital and biotechnology, are unquestionably important for transforming agriculture, increasing food production and preserving the environment. In digital agriculture, the efficiency of agricultural production as a whole depends on the effectiveness of each stage: promising research in the field of plant and animal breeding, the development of new technologies for growing and producing, storing and logistics, market promotion, etc.

At the same time as digitalization of agriculture, other areas are actively developing, in particular, the market for organic agricultural products, which has been growing steadily over the past few years. At the same time, demand in the "green" segment in the world is increasing faster than there is an increase in the area of suitable land. For this reason, one of the new directions of agricultural development today is organic agriculture, which is just beginning to develop in Russia. Organic agriculture is practiced in 181 countries by 2.9 million producers per 70 million hectares, in Russia the number of producers of such products is still less than 100 (Union of Organic Farming, 2019). According to the statistics of the European Commission, our country is among the top 21 suppliers of organic goods to the European Union, but Russia accounts for only 1% of the total import of such products into the region.

Russia is still at the very beginning of the development of the organic production sector, but the income of the Russian Federation from agricultural exports in recent years exceeds the income from arms exports (Message from the President of the Russian Federation to the Federal Assembly of the Russian Federation of 01.12.2016.). Such a late appearance of the organic production sector is characteristic of other former Soviet countries. For example, the first law on organic products appeared in Ukraine in 2013 (Bahai, 2018). For comparison, organic agricultural activities have been subject to legal regulation in Japan since 1950, when general criteria and procedures for accreditation and certification were established, as well as labelling and import requirements for almost all agricultural and forest products (Law Concerning Standardisation and Proper Labelling of Agricultural and Forestry Products (Law № 175 of 1950).).

From this it follows that the latest agricultural activity for the Russian Federation should already at the very beginning of its development keep up with advanced technologies and use the achievements of mechanization and digitalization of all stages of growing organic products, and from a consumer point of view the organic product should be recognizable.

## 2. Problem Statement

It is known that in recent years the world community has become interested in the production of organic food. Simultaneously with the highest speed, digitalization of all spheres of the economy is developing (Sidorova, 2020), the latest technologies are coming to the aid of agriculture. To achieve high performance, it

is impossible to do without modern technologies both in the direct production of organic food products and in their implementation. The finished product must be recognizable by the buyer, so its branding and labeling with special insignia takes on particular importance. Such signs can be introduced both at the state level and at the level of associations of agricultural producers. An important issue is the confirmation of the authenticity of the product, which is used with great success in other areas of trade. Digital technologies should also protect the interests of the consumer, namely by labelling eco-products and including organic agricultural products in the list of goods subject to mandatory labelling by identification.

### **3. Research Questions**

Which factors can be distinguished as positive for the development of organic agriculture in the Russian Federation? What is important for the country's food security? What agricultural models are relevant for the modern economy? What digitalization achievements can be used in agriculture? How can digitalization advances in organic agriculture be used? Is further legislative regulation of organic agriculture necessary? What can the state do in the framework of developing interest in the production of organic products?

### **4. Purpose of the Study**

The purpose of the present study is to conclude that digitalization achievements can be applied in the production of organic products at all stages, including sales to the end user. The author does not study the technical aspects of product production, but pays attention to its legal regulation in terms of market promotion. Within the framework of this study, it is necessary to study the legal framework of organic agriculture in the territory of the Russian Federation. At the same time, qualitative analysis is impossible without comparing the regulatory regulation of the Russian Federation and foreign countries. Separately, it is proposed to study the issues of branding and labeling organic goods. It is necessary to determine the specific features of branding in the Russian Federation, in particular, the influence of the geographical characteristic. Proposals to improve Russian legislation will undoubtedly help the development of organic agriculture and may be in demand in other sectors of the economy.

### **5. Research Methods**

The author widely used the historical-legal, formal-legal and structural-legal method. A special role is devoted to the comparative legal method. The comparative legal method acted as a set of methods and methods of detection for studying general and specific patterns. The study used a systemic method. Using the system method, branding of individual products and labeling of a whole product line were studied. In preparing the study, the author relied on the theoretical provisions of both the general theory of law and certain branches of Russian and foreign law. Language (linguistic) methods were used to analyze literature in a foreign language.

## 6. Findings

Russia undoubtedly has a chance to occupy part of the global market for environmentally friendly products. Firstly, the "reserve" of land for eco-land is huge - the area of unused, but suitable for organic agriculture arable land, according to various estimates, in Russia is 10-12 million hectares. "Intact" areas for the collection of wild plants, widely used in the food, perfume and medical industries, have also been preserved. Second, moderate agricultural intensity and limited use of fertilizers. According to the Order of the Government of the Russian Federation No. 532-R of March 29, 2018 On the action plan ("road map") for the development of mineral fertilizers production for the period up to 2025 the average level of mineral fertilizers application in the whole country remains low and ranges from 48.8 kg to 88.3 kg per 1 hectare, depending on the level of agricultural development in a particular region of the Russian Federation (world practice - in the USA - 140 kg per 1 hectare, in the European Union - 130 kg per 1 hectare, in Latin America - 90 kg per 1 hectare) (Order of the Government of the Russian Federation No. 532-R, 2018).

The food security of the country and the recognition of Russian-made eco-products on the world market for agricultural goods, of course, should be guaranteed not only by production volumes, but also by the quality of products. In 2016, for the first time in Russia, the National Standard for Organic Products was adopted, which defines the rules for its production (National Standard of the Russian Federation GOST R 57022-2016, 2016).

Effective January 1, 2020 Federal law No. 280-FZ of August 3, 2018 "On organic products and on amendments to certain legislative acts of the Russian Federation" (2018), which aims to create conditions for the sustainable development of eco-production in Russia and regulates relations related to the production, storage, transportation, labeling and sale of organic products, establishes requirements for the production of organic products and imposes a ban on the use of agrochemicals, pesticides, antibiotics, animal growth and fattening stimulants, genetically engineered and transgenic organisms, hydroponic method of growing plants, etc.

Today there are two models for the development of the organic production sector: market division between large corporations (USA) and the dominance of small forms of economy (Europe, China, India). Accordingly, the first option is more suitable for meeting mass demand, the second for more demanding local consumers. For Russia, the use of a combined model is logical. Small farms are good for complex development objectives:

- saturating the domestic market with eco-products and improving the quality of life of the population by ensuring access to healthy foods;
- reducing the negative impact on the environment and preserving the natural heritage;
- increase the level of employment and, accordingly, rural life;
- development of rural and ecotourism.

Long-term and costly government programmes are not needed to support smallholder farmers. But this does not exclude the need to improve the skills of farmers, including online, the transition to an automated and more efficient format of work. Zoned seeds, bio-fertilizers, digitalized agricultural machinery, sensors, unmanned aerial vehicles and other digital elements are key to success. The introduction of digitalization of the process of implementing finished eco-products (the creation of electronic platforms for trade) will reduce the path from producer to consumer, eliminating unnecessary

intermediaries and costs. It was repeatedly noted that the use of digital technologies increases production efficiency and helps increase business efficiency (Berawi, 2020).

As part of the digitalization of agricultural production, the sowing of grains of land should be recorded and the possibility should be provided on any online platform, in any GIS application, to create an elec-throne base given by fields (area, geographical coordinates, level of fruit, etc.). Provide platform filling with autonomous sensors (digital weather stations, transport monitoring sensors, yield, satellite imagery. In the greenhouse economy, automatically control the system (control of air temperature, watering, supply of mineral solutions, etc.). The knowledge of soil scientists, agronomists, plant protection specialists and agroengineers, reference books of pests, diseases, weeds and algorithms for their recognition should be translated into a figure.

Digital agriculture should focus on the effectiveness of each operation. So in crop production, the following components of success can be conditionally distinguished:

- implementation of Blockchain principles, labeling with QR-codes and control of seed products at different stages of production, will allow users to get all the necessary information about the quality of seeds;
- data collection, aggregation and analysis (for accurate farming and monitoring of agricultural systems at risk due to anthropogenic effects on land and water resources, for analysis of weather-related trends), where artificial intelligence, computer vision, drones, sensors, etc., can be successfully used. allows to accurately, pointwise and timely solve problems of poor seedlings, insufficient green mass, spread of diseases and pests, as well as to predict the harvest with a sufficiently high degree of accuracy, and as a result to plan harvesting, transportation, storage capacities and/or work more accurately.

Digitalization of agriculture is one of the objectives of the Food and Agriculture Organization of the United Nations. The latest regional conference in Asia and the Pacific noted that the use of new digital technologies will significantly reduce production costs, provide labour-intensive processing of multiple data and analysis of past agricultural events and predict future (FAO Regional conference for Asia and the Pacific, 2020).

However, solving all the above-mentioned problems is only half a way. Another equally important task is to expand the geography of markets. In October 2019, the appearance of a special "green" product labeling in Russia was announced to promote food with improved environmental characteristics both within Russia and in world markets and the name "Green Standard" was chosen - "The Green One." The task of entering Russian organic products into foreign markets is rather due to large companies with well-tuned processes and, possibly, associations of small farmers operating under a single brand. Here, the participation of the state is to ensure the development of green production. These are traditional levers (subsidizing loans, preferential insurance, reducing the tax burden for manufacturers, etc.) and new ones (marketing promotion of eco-products to the world market, sponsoring research on the benefits of organic products for health and the environment, etc.).

To indicate in the labeling of the product on the organic method of its production, it is customary to use environmental labels and declarations - eco-labeling (Belyakova et al., 2019). Globally, there is a system of standardization ISO 14020:2000. Environmental labels and declarations - General principles (ISO 14020:2000, 2000), including specially developed guidelines and procedures for application, which in the territory of the Russian Federation correspond GOST R ISO 14020-2011 "Environmental labels and

declarations. General principles” (National Standard of the Russian Federation GOST R ISO 14020-2011, 2011).

Labelling an organic product with an appropriate mark is the only criterion when it is assigned to this group of products, as well as when the consumer selects it. That is why it is necessary to establish special requirements for the labeling of organic products and responsibility for their improper performance for unscrupulous manufacturers. Despite clear requirements for eco-labelling, organic products with the EU organic logo are not correctly labelled in most cases, as confirmed by the inspection results. (Maruszevska, 2016).

Currently, the reliability of various types of products in the Russian Federation can be checked using open databases - the state information system for monitoring the circulation of goods subject to mandatory marking by identification means. It is worth noting that such a monitoring system is unique. In the world, it is possible to check the originality of certain goods, but, as a rule, within the framework of the manufacturer of the goods. In our opinion, mandatory labeling should be introduced for organic products to protect the interests of consumers from unscrupulous manufacturers. At the same time, the activities of the producers themselves should be subject to mandatory certification at all stages of production, and certified organic ingredients should be used in the production process (Rana, 2018).

It is also logical in the light of recent developments in Russian and international legislation in the field of protection of means of individualization of goods to begin work on the development and registration of geographical indications for environmentally friendly agricultural products produced in Russia. Such, in particular, include Bashkir and Altai honey, Astrakhan watermelons and tomatoes, Adyghe cheese, Krasnodar tea, Baikal omul, Kamchatka crab, etc.

In February 2020, entered into force Geneva Act of the Lisbon Agreement on Appellations of Origin and Geographical Indications (WIPO, 2015), to which the Russian Federation is a party, and in July Federal law of July 26, 2019 N 230-FZ "On amendments to part four of the Civil Code of the Russian Federation and articles 1 and 23.1 of the Federal law "On state regulation of production and turnover of ethyl alcohol, alcoholic and alcohol-containing products and on restriction of consumption (drinking) of alcoholic products" (2019). These acts similarly define the concept of geographical indication as a designation that allows the identification of goods originating from the territory of a geographical object, of which a certain quality, reputation or other characteristics are largely related to its geographical origin. The aim of the innovations is essentially in line with what was once defined in the Regulation of the European Parliament and the EU Council (EU) 1151/2012 of November 21, 2012 on quality schemes for agricultural products and food (The European Parliament and the Council of the European Union, 2012). And it consists in protecting the reputation of regional food products, promoting the development of rural and agricultural activities, helping producers to get a higher price for their true products and eliminating unfair competition and misleading consumers.

## 7. Conclusion

The use of special eco-labelling, and now also geographical indication for the identification of environmentally friendly Russian agricultural products, is one of the key to success, provided that they are skillfully promoted and adequately protected. Promotion is a long process that requires not only financial investments, but often interesting, creative moves, it is a system of events aimed at increasing the recognition of the product, expanding the target audience, demonstrating the significance and its advantages with the ultimate goal of increasing sales of Russian eco-products.

The process of converting traditional agriculture to organic agriculture is quite long, it is definitely overdue. In addition to land conversion, it is necessary to widely implement the digitalization of the entire technological process of crop and livestock production, as well as harvesting and processing of wild plants, including the promotion of green labeling of Russian eco-products on both domestic and international markets. It seems that efforts to develop the organic agricultural sector, combined with modern digital achievements, will have a multiplier effect on the entire agricultural industry, ensure food security of the country and increase the income of the Russian Federation from agricultural exports.

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