

Influence of organic agriculture on the development of green economy

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Abstract. The European experience of realization of the principles of green economy within the organic agriculture, contributing to the most intensive development of organic agro-business in Russia, is considered in the article. The current state and trends of the development, features of state policy in the field of organic agriculture are investigated. The perspective directions of "gardening" of agro-business in Russia are emphasized.

1 Introduction

The existing ways of agrarian production lead to the emergence of many environmental problems, social tension and reduction of the natural capital. Providing the population with quality food, and concurrent minimization of the impact on the environment are possible upon the transition of the agrarian sector to the model of "green" economy. The principles of "green" economy for the agrarian sector are implemented within organic agriculture most fully.

Organic agriculture represents the system of production which is based on the ecological processes, biodiversity and natural cycles, combines the traditions and scientific achievements, which improve the situation in the environment. Organic agriculture acts as one of the methods of the solution of environmental problems in the agrarian sector and as the most important component of sustainable development. Therefore organic agriculture plays a key role in the transition to "green" economy.

One of the leaders in the implementation of the principles of "green" economy which the organic agriculture fulfils, is the European Union (EU). In the EU organic agriculture gained such modern lines: as legislation, certification and standardization. The agrarian policy of the EU on the development of organic agriculture uses the most effective tools. Thus the European experience of the development of organic agriculture is of particular interest for Russia.

The Russian agrarian sector has huge resource, scientific and technical, industrial and labour potential. The objectives, set for the country for the next decades answer the purpose of transition to "green" economy in many respects; that is reflected in the policy of the use of resources and environmental protections, standard and legal documents. However

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possibilities of the Russian organic agro-business to realize the principles of "green" economy are limited, there is small output and the insufficient quantity of producers of organic products, the lack of state programmes of support of organic agro-business and educational, research programmes.

It should be noted, that the main problem is the respect for balance of interests between the agro-business seeking for maximizing profit and the population speaking for the clean environment. Creation of conditions which make the implementation of "green" technologies to the agrarian sector to be favorable for business is primary.

2 Materials and Methods

This work is completed on the basis of the research on the development of organic agro-business and the state policy in the field of regulation of this sector in the EU and in Russia. The system approach, abstract and logical, structural and dynamic, settlement and analytical methods were applied.

The movement for the development of organic agriculture began in Europe in the 1920-1940th. At the same time the increasing negative environmental impacts of the traditional agriculture, as well as concern of the population about safety of food promoted the increase in number of producers and the increase in production of organic products, registration of organic agriculture to the autonomous sector of agrarian economy in the early 1990th.

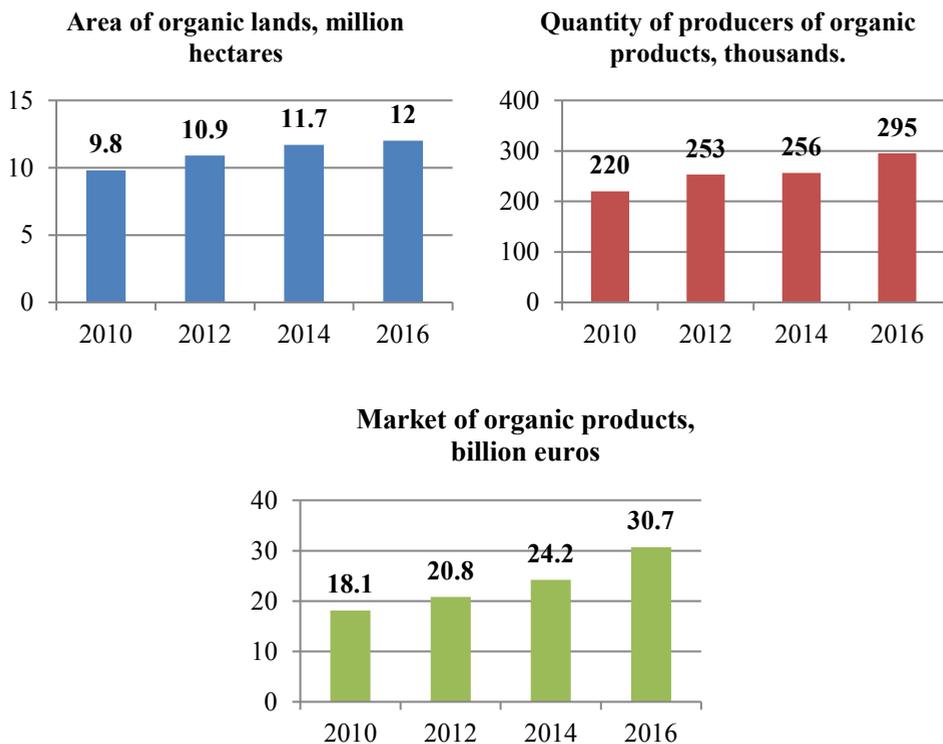


Fig. 1. Key indicators of the organic agriculture development in the EU in 2010-2016.

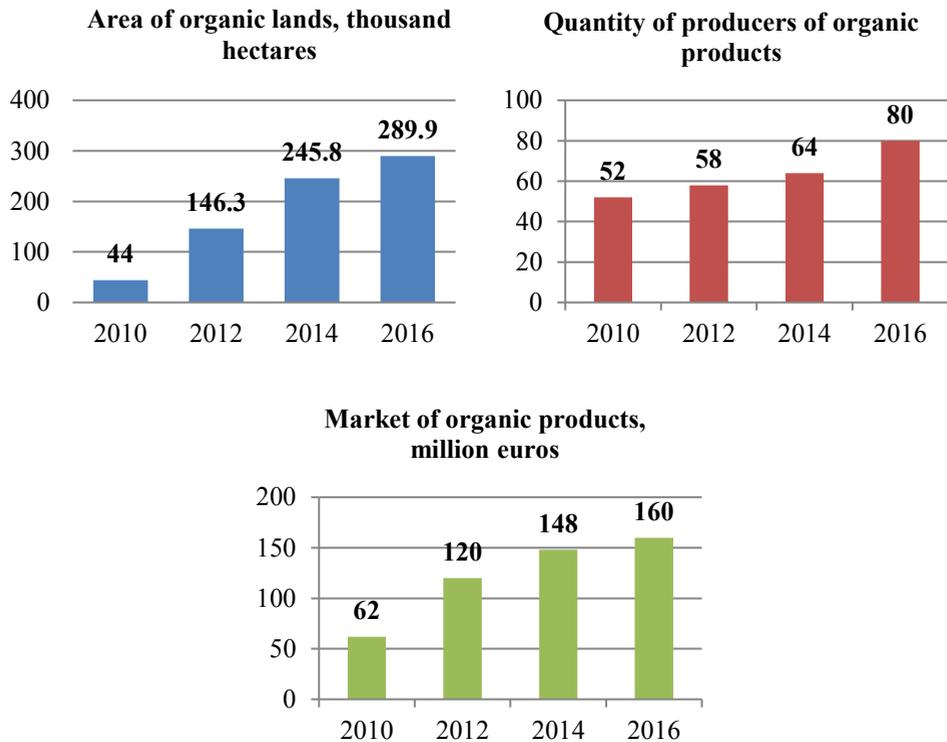


Fig. 2. Key indicators of the organic agriculture development in Russia in 2010-2016.

According to the results of 2016 the area of organic lands in the EU increased by 22.4% comparing with 2010 and reached 12 million hectares (6.7% of all the agricultural grounds), the quantity of organic farms grew by 34.1% and made up 295 thousand, the market of organic agricultural products exceeded 30 billion euros that for 69.6% exceeds the indicator in 2010 (Figure 1). The largest areas of organic lands are in Spain, Italy, France, Germany, where they made up more than 1 million hectares. The main producers of organic products in the European countries are small organic farms up to 50 hectares. Italy (64210), Spain (36207), France (32264), Germany (27132) are the leaders in number of producers of organic products. The largest markets of organic products in 2016 are German (9478 million euros), French (6736 million euros), Italian and English — 2644 and 2460 million euros respectively [1].

The market of organic products develops in the EU headily. The considerable part of organic products is imported as the demand for organic products in the EU is not satisfied and exceeds the existing offer. The Russian producers of organic products can use current situation and export the products to the EU, particularly, organic food and commercial crops. Thus, the EU is the largest centre of the organic agriculture development, Russia takes the first steps in this direction.

3 Results

The important stage in the organic agriculture development in the EU is adoption of the supranational normative legal act – the Rule of the EU On organic agriculture No. 2092/91 in 1991, within which the full-scale support of organic production began.

Now the main documents, regulating organic agriculture in the EU are: Regulations of Council (EU) No. 834/2007, adopted on June 28, 2007 and Regulations of the Commission (EU) No. 889/2008 adopted in on September 5, 2008, which establishes the rules of implementation of Regulations of Council (EU) No. 834/2007.

The regulations of Council (EU) No. 834/2007, adopted on of June 28, 2007 On production and marking of organic products and cancellation of Regulations (EEC) No. 2092/91 contain requirements to conducting organic production, and some of the most rigid. GMO and the use of ionizing radiation are completely forbidden. Special attention is paid to the environmental protection. For the purpose of prevention and minimization of contribution to environmental pollution are provided in crop production: crop rotations; ban on the use of mineral nitrogen fertilizers and chemical means the protection of plants; the use of the natural resolved fertilizers; protection by the means of natural enemies, the choice of types and grades, methods of cultivation and thermal processes; the use of integrally made seeds and seedling. The main requirements in livestock production: are the following: the reproduction by the use of natural methods; the ban on attachment and isolation of animals, continuous access to pastures; application only of organic forages; ban on the use of antibiotics [3, 4, 5].

The Action plan for the development of organic production is approved in the EU for the period of 2014-2020. The all-European plan assumes the national plans of action. The state support, taking into account the difficulties transition period for organic farms, provides information support and legal protection, grants for the programmes of rural development, direct payments on conversion and the subsequent development, increase in level of awareness of the population on the organic products [4, 6].

Certification of organic products and the enterprises confirms the compliance of the principles of organic agriculture. Certification to the EU is carried out by special public authorities, associations of producers and consumers of organic products. For the purpose of identification of the certified organic food products and drinks existence of the sign is obligatory (uniform European ("Eurolist") or national in certain EU countries).

After the adoption since January 1, 2021 the new version of Regulations of the EU regulating organic production will come into force. Changes in new Regulations concern introduction of uniform set of the rules of the EU applied and concerning importers of organic products, also possibilities of the choice of group certification; obligations of carrying out precautionary measures for reduction of risk of accidental "infection" with pesticides on border of organic and traditional farmlands; frequencies of control and supervising checks which can be reduced to once in two years for successfully operating organic enterprises, etc.

Russian producers of organic products have to observe some requirements of the new EU Regulations, regulating organic production for the access to the market of the EU, otherwise the agreement on mutual recognition in the sphere of production and control of organic products has to be made between the EU and Russia [5, 7].

As for Russia, the Federal law No 280-FZ "On organic products and On the introduction of amendments to separate acts of the Russian Federation" was adopted on August, 2018 after the fifteen-year period of attempts. The federal law governs the relations, connected with production, storage, transportation, marking and selling of organic products, comes into force since January 1, 2020 [8]. It is impossible to tell that the emergence of the law will change the situation considerably, but the implementation of the uniform rules of the game for all the representatives of organic agro-business will allow speaking about promoting of organic products among the consumers.

Production and distribution of organic products in Russia are regulated by 3 national standards (GOST) as well: GOST R 56104-2014 "Organic foodstuff. Terms and definitions" of September 10, 2014; GOST P 56508-2015 "Products of organic production.

Rules of production, storage, transportation" June 30, 2015; GOST R 57022-2016 "Products of organic production. Order of carrying out voluntary certification of organic production" of August 5, 2016.

Since January 01, 2018 the GOST 33980-2016 Interstate standard "Products of organic production, the rule of production, processing, marking and realization (CAC/GL 32-1999, NEQ)" came into force. This standard regulates organic production in Russia, Kyrgyzstan and Tajikistan.

The Programme of development of the export of niche products with high marginality till 2020, including local some industry programmes concerning organic agricultural products on October 19, 2017 was approved among the programmes of promotion and the increase in volumes of export of separate types of agricultural products till 2020 within the priority project "Export of Agricultural Products". Potential export products in such directions as China, EU countries, Western Asia, are leguminous cultures. Besides adoption of the Federal Law and harmonization of national and international standards of organic products, the creation of an efficient national system of certification of organic producers and information support of the small export enterprises will contribute to the development of export of organic agricultural products [9]. These actions will lead to the development of the Russian organic agro-business.

The direction on the development of organic agriculture is not emphasized within the State Programme of the development of agriculture and regulation of the markets of agricultural products, raw materials and food for 2013-2020; there is no separate state programme neither, thus there are no measures of the state support in the relation of producers of organic products [10].

Organic agriculture in Russia exists, but it is still in embryo. It is obvious that it is necessary to use the experience of the European countries, including concrete measures for the development of organic agriculture, in the procedure of certification, creation of the organic sign. As in Russia active discussion of the developed standard and legal documents in the field of organic agriculture is being conducted now, harmonization of a regulatory framework makes sense for the mutually advantageous trade in organic products.

The implementation of the principles of "green" economy assumes economical expenditure and preservation of natural resources; therefore the priority is given to the new technologies, promoting preservation of the environment [12, 13, 14]. Modern organic agriculture supposes scientifically based methods of the choice of cultures and grades first of all, it plans crop rotations, ecological technologies with application of hydrotechnical melioration, agrolesomelioration, biological methods of pest control, technologies of exact sowing and various methods of minimization of processing of the soil, technologies of agroenvironmental monitoring of lands, the automated technologies, etc. The application of new, technologies (including digital technologies) results in the increase in the productivity of work and production of organic products [15, 16]. However, low indicators of productivity and efficiency are characteristic of organic production, comparing with the traditional agriculture.

As for the impact on the environment, the transition to organic agriculture promotes the reduction of emissions of greenhouse gases (from 25 to 50% of the volume of emissions of traditional agriculture), the reduction of the need for energy by 50%, the reduction of the deforestation by 55% and consumption of fresh water by 35%. The refusal of the use of chemical fertilizers and means of protection of plants and animals leads to receiving quality and safe organic products for the population health. Besides, the use of "green" technologies within organic agriculture intensifies processes of self-recovery of the broken ecosystems [17].

In the context of "green" economy the following advantages of organic agriculture can be named: the increase in profit at the expense of higher prices of the final product or cost

reduction of products or their combination; the increase in employment rate (on all the chain of value creation); the increase in export of organic products or reduction of import, for example, agrochemicals, or their combination; the decrease in emissions of carbon and also preservation of biodiversity and reduction of costs for purification of waters and services of health care; the increase in the social capital, including cooperation among farmers, growth of trust in the society [18, 19, 20].

4 Conclusions

The European experience of organic agriculture and the state support for conversion of traditional farms in organic, its adaptation in the territory of the country open ample opportunities for the development of the Russian organic agriculture. Russia possesses unique resources and has some advantages for the formation of organic agro-business and transition to "green" economy: great territory, low level of environmental pollution, development of transport infrastructure, etc. By steadier in comparison with foreign countries this sector is done by commitment to "the organic idea" of domestic manufacturers of organic products, than a commercial component. The development of organic agriculture in Russia will increase the competitiveness of products in the world market and the standard of living of the population, will allow to solve environmental-and-social problems, will increase the income of country people, will contribute to the economic development of the country in general. That does not mean full replacement of traditional agriculture on organic, but, each of them has its niche, but it is impossible to ignore some of ecological, social economic and political benefits of organic agriculture.

It is expedient to carry the following directions of the state support of organic agro-business:

- the development of the regulatory framework of organic agriculture, stimulation of ecology-oriented agro-business, including improvement of the system of certification and standardization;
- information and scientific and methodical support of producers of organic products;
- professional development, preparation and retraining of personnel for organic production;
- promoting of consumption of the organic products, which are safe for health and ecology, among the population; use of organic products in a power supply system of educational institutions.

Taking into account membership of Russia in the WTO, the measures of the state support of organic agro-business have no direct impact on the increase in production and restriction of trade, thus, they are in the "green basket" and they are not limited in application.

The state support of organic agro-business will promote the simplification of the conversion period, acceleration of the transformation process and final transition of Russia to "green" economy.

References

1. H. Willer, J. Lernoud, *The World of Organic Agriculture. Statistics and Emerging Trends* (FiBL, IFOAM, 2018)
2. O.V. Mironenko Organic market of Russia. Results of 2017, <http://rosorganic.ru/files/Mironenko%20Analitika%202017-18.pdf>
3. <http://www.biocert.ru/content/files/8342007.pdf>
4. E.A. Mitina, O.B. Yarosh, *Economy and business* **8**, 70-79 (2017)

5. S. Ryzhkova, V. Kruchinina, H. Gasanova, A. Lankin, Agrarian and industrial complex: economy, management **5**, 31-39 (2018)
6. <http://ec.europa.eu/transparency/regdoc/rep/1/2014/EN/1-2014-179-EN-F1-1.Pdf>
7. <http://rosorganic.ru/news/new-eu-regulation-on-organic-agricu.html>
8. G. Dyakova, S. Izmaylova, A. Mottaeva, E. Karanina, IOP Conf. Series: Earth and Environmental Science **90**, 012218 (2017) doi :10.1088/1755-1315/90/1/012218
9. <http://soz.bio/wp-content/uploads/2017/11/lokalnaya-otraslevaya-programma-organicheskoe-selskoe-khozyaystvo-prilozhenie-n-4.pdf>
10. http://ecfs.msu.ru/sites/default/files/node/publication/18/01/world_bank_prod_rus_01.pdf
11. A. Mottaeva, B. Melovic, MATEC Web of Conferences **193**, 00001 (2018)
12. Y.V. Morozyuk, A.V. Sharkova, I.A. Merkulina, O.N. Vasilyeva, Journal of Environmental Management and Tourism **8-3(19)**, 507-515 (2017)
13. A. Mottaeva, A. Zheltenkov, MATEC Web of Conferences **170**, 01022 (2018)
14. A. Gromova, Russian business **14(260)**, 129-135 (2014)
15. E. Vasilyeva, MATEC Web of Conference **193**, 01025 (2018)
16. <https://soz.bio/12082013-2/>
17. V A. Bashirova, E. Eminova, Regional problems of transformation of economy **3**, 37-42 (2015)
18. I. Donnik, B. Voronin, O. Loretts, Indian journal of science and technology **9(14)**, 2-5 (2016)
19. V.G. Kudryakov, V.A. Mironchuk, S.A. Esayan, Scientific magazine of KUBGAU, **105(01)**, 1-18 (2015)