

# Organic Production at Long-fallow Lands as a Strategic Resource of the Food Import Substitution Policy

## Producción orgánica en tierras de barbecho como recurso estratégico de la política de sustitución de importaciones de alimentos

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#### ABSTRACT:

The article considers actual issues related to establishing and developing the agriculture focused on organic production. The notions "organic agriculture", "agriculture focused on organic production" are given. The authors' views on their content are stipulated. Prerequisites on involving long-fallow and idle lands for organic agriculture are stipulated and reasoned. Basic areas of forming and implementing the concept of agriculture focused on organic production are considered on the level of a subject of the Russian Federation within the strategy of food import substitution strategy. The authors' methodology of forming and implementing regional target programs of developing the agro-industrial complex is offered. Based on it, the project of the Territory target program "Involving Agricultural Crop and Long-fallow Lands that Are Not Used for Purpose in the Altai Territory in Agricultural Production for Organic Production for the Period of 2017-2022" is developed. Based on strategic

#### RESUMEN:

El artículo considera los temas reales relacionados con el establecimiento y desarrollo de la agricultura centrada en la producción orgánica. Se dan las nociones de "agricultura orgánica", "agricultura centrada en la producción orgánica". Las opiniones de los autores sobre su contenido están estipuladas. Se estipulan y razonan los requisitos previos para la participación de tierras de barbecho largo e inactivo para la agricultura orgánica. Las áreas básicas de formación y aplicación del concepto de agricultura centrado en la producción orgánica se consideran a nivel de un tema de la Federación de Rusia dentro de la estrategia de la estrategia de sustitución de importaciones de alimentos. Se ofrece la metodología de los autores para la formación e implementación de programas regionales orientados al desarrollo del complejo agroindustrial. Sobre la base de ello, se desarrolla el proyecto del programa de destinación del Territorio "Involucrando las tierras agrícolas y las tierras de barbecho largo que no

plans for developing the organic agricultural sector of the Altai Territory, as well as the project of the Territory target program developed by the authors, the production of agro-industrial complex of the Altai Territory for the period of 2017-2027 is forecasted, the share of organic agricultural production is determined, and its efficiency is estimated. The research results were considered by the Ministry of Agriculture of the Russian Federation, and recommended for their practical use when forming a strategy of developing organic agricultural production in agrarian regions of the country (certificate of the Ministry of Agriculture of the Russian Federation No. 13/2530 dated 19.11.2014).

**Keywords:** agro-industrial complex, organic products, long-fallow lands, idle tillage, import substitution policy, regional programs of development, forecasting.

se usan para propósitos en el territorio de Altai en la producción agrícola para la producción orgánica para el período 2017-2022". Sobre la base de los planes estratégicos de desarrollo del sector agrícola orgánico del Territorio de Altai, así como el proyecto del programa de destino del Territorio desarrollado por los autores, se prevé la producción del complejo agroindustrial del Territorio de Altai para el período 2017-2027, Se determina la participación de la producción agrícola orgánica y se estima su eficiencia. Los resultados de la investigación fueron considerados por el Ministerio de Agricultura de la Federación de Rusia y recomendados para su uso práctico en la formación de una estrategia de desarrollo de la producción agrícola orgánica en las regiones agrarias del país (certificado del Ministerio de Agricultura de la Federación de Rusia No. 13 / 2530 del 19.11.2014).

**Palabras clave:** complejo agroindustrial, productos orgánicos, tierras de barbecho largo, laboreo ocioso, política de sustitución de importaciones, programas regionales de desarrollo, previsión.

## 1. Introduction

Nowadays the market of organic products is one of the most developing and promising areas of the global agro-industrial production (Dzhabarova Y., 2011; Fridlova M., Vostra H., 2011; Grzelak P., Maciejczak M., 2013; Gubbuk H., Polat E., Pekmezci M., 2004; Smoluk-Sikorska J., Luczka-Bakula W., 2013; Altukhov A.I., 2015; Poltaryhin A.L., Tarasova A.Yu., 2013). To a great degree, food safety, the population's health state and life quality are stipulated by the development of organic agricultural production based on innovational designing in alternative land use, preserving natural resources and, above all, land (Sokolova Zh. E., Avarskiy N.D. et al., 2014; Voronkova, O.Yu., 2014; Zhurchenko A.A., 2012; Tatarkin A.I., Polbitsyn S.N., 2015; Sycheva I.N., Permiakova E.S., Ovchinnikov Ya.L., 2015, 2016). Along with this, the unfilled niche of the organic (ecologically friendly) products market and considerable land potential for developing organic land farming create all required pre-requisites for forming and developing the national agriculture focused on organic production.

Russia has everything required for forming agriculture focused on organic production: many years' agrarian traditions, large agricultural areas and a low level of intensification and chemicalization of the agro-industrial complex as compared to industrially developed countries (Krylatyh E.N., 2008; Lysenko E.G., 2008; Stukach V.F., 2011). Thus, on average in countries of the Eurozone the use of mineral fertilizers is 192 kg/ha, while in Russia it is – 39 kg/ha, and in the Altai Territory – 3.8 kg/ha (Zhidkih A.A., Voronkova O.Yu., Elchishev E.A., 2015).

Due to it, it is actual to develop issues related to perspectives of developing agriculture focused on organic production and stipulating the reasonability to involve long-fallow and idle agricultural land resources in the production turnover for these purposes.

## 2. Research Methods

Theoretical and methodological basis includes works of national and foreign researchers on issues related to organic agricultural production, developing land relations; scientific researches and recommendations of the Russian Academy of Agricultural Sciences, laws of the Russian Federation, orders of the President and Decrees of the Government of the Russian Federation, statutory and regulatory acts of subjects of the Federation, decrees of the European Union on developing ecologic agriculture, and IFOAM standards. The methodological basis was the system approach that made it possible to provide the complexity and purposefulness of the research results. The work also used analytical, abstract and logical, calculation and constructive, economic and statistical, economic and mathematic, and monographic methods of the research.

## 3. Research Results

### 3.1 Pre-requisites of developing agriculture focused on organic production

It is possible to define the essence of the category “*organic agriculture*” as a notion that covers all systems of farming based on natural means and resources that take into account natural needs of the flora and fauna, surrounding natural environment whose basic goal is the process of ecologic (organic) production certified by international and national ecological certificates.

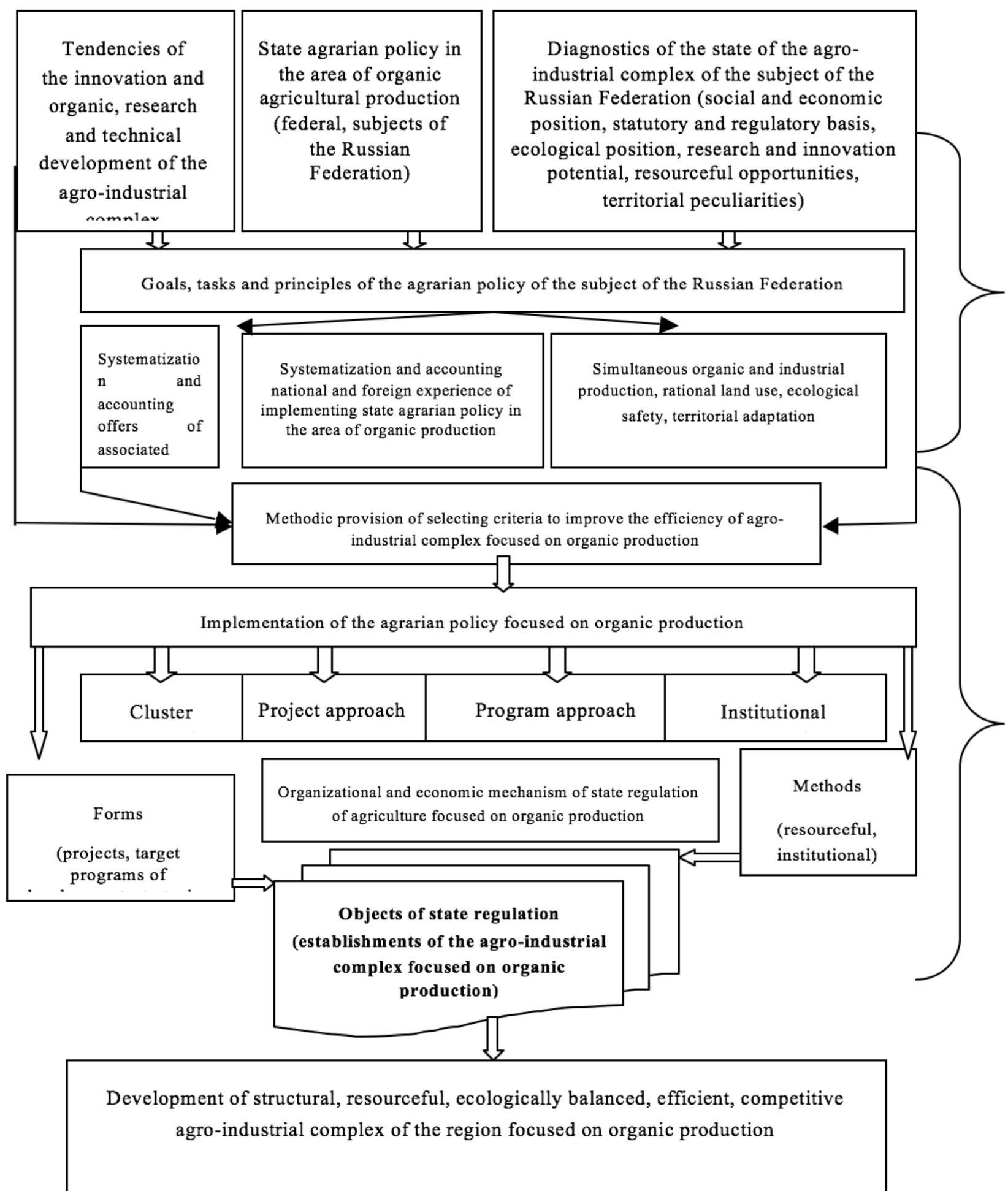
In this context, it is necessary to clarify the notion “*agriculture focused on organic production*” considered as simultaneous traditional industrial and organic agricultural production with a gradual increase in the share of organic agricultural production on the basis of rational, territorially adapted land use with the minimally stipulated chemicalization of agro-technical and technological processes of agricultural production. In accordance with the offered definition, the agricultural establishment that carries out such production will be considered as focused on organic (ecological) production (Voronkova O.Yu., Kundius V.A., Mikhaylushin P.V., 2015).

The carried out estimation of the traditional system of farming showed that even applying the latest achievements of agricultural science and practice, agrarians could not essentially solve the problem related to improving the efficiency of the sector production. Thus, it is necessary to develop the mechanism taking into account the impact of economic, innovational, social, ecological, recreational, national and cultural and other factors, including the one implemented by creating zonal agricultural clusters (Ovchinikov Ya.L., Sycheva I.N., Permiakova E.S., 2016; Sycheva I.N., Permiakova E.S., 2014). To our mind, the formation and development of agriculture focused on organic production must comply with the following *system imperatives*:

- Development of the concept related to developing organic agricultural production,
- Simultaneous organic and industrial agricultural production,
- Mechanism of transferring agriculture to organic production,
- Forming zonal agricultural clusters, and
- State regulation of agriculture focused on organic production by target development programs.

### 3.2 Concept of organic agricultural production

During scientific researches, we developed a concept and defined basic areas of forming and implementing the concept of agriculture focused on organic production on the level of the subject of the Russian Federation (Figure 1).



**Figure 1.** Scheme of Forming and Implementing the Concept of Agrarian Policy on the Level of the Russian Subject Focused on Organic Production

Forming a system of organic agriculture does not mean refusal from industrial agricultural production. To our mind, both organic and industrial systems of farming can efficiently function simultaneously, gradually transforming into such agrarian technology that can meet current and assumed needs of the population in high quality and ecologically safe food.

In order to stipulate areas of developing organic agricultural production, it is reasonable to reveal factors that contribute to developing the market of organic food on the following levels: state, regional, and level of the agricultural producer (Table 1).

**Table 1.** Organizational Levels and Determining Factors of Developing Agriculture Focused on Organic Production

Organizational level	Determining factors of agriculture development in terms of organic production
Federal level	Preparing and adopting normative legal documents regulating notions "organic, ecologically clean (safe) product", "organic product".
	Forming the regulatory and legal framework regulating functioning of the market of organic products in the consumers' interests on the basis of participating of all subjects of the market who have an interest.
	Developing a system of national standards in terms of ecologization of agriculture and their harmonization with the system of international ecological standards.
	Developing economic mechanism of stimulating organic producers through the system of privileged crediting, optimizing of taxation, provision of donations and subsidies, general improvement of the investment attractiveness and innovational activity of organic products market subjects.
Regional level	Developing target programs that support forming and developing of agriculture focused on organic production. Developing the regulatory and legal framework of the organic agricultural production that does not contradict to the federal legislation.
	Scientific researches to reveal the potential in the area of organic land use in the region. Expanding the information field displaying peculiarities of organic agricultural production.
	Forming educational programs to train personnel and improve the qualification of specialists in the area of agriculture focused on organic production.
	Involving of land resources suitable for organic production in the production turnover. Forming zonal agricultural clusters.
	Developing regional markets of organic products. Participating in international and Russian exhibitions to promote regional organic products.
Level of agricultural establishment	Selecting the area to transfer to organic production taking into account the existing production resources and demand for organic products.
	Reproduction of land resources by involving idle and long-fallow lands in agricultural turnover, recovering the soil fertility and transfer to land use ecologization.
	Improving the efficient agricultural production at the expense of a higher price of selling organic products.
	Including the establishment in the structure of zonal agricultural cluster. Training and improving the personnel qualification. Certification of the organic production system.

In the modern context of developing the Russian agro-industrial complex, it is possible to single out a number of reasons that slow down the development of agriculture focused on organic production: the lack of interest in principles of organic production by heads of agricultural establishments which is often stipulated by their conservatism to novelties and lack of the required information; difficulties in investing projects in the agro-industrial complex focused on organic production; the lack of the market to sell organic products; the deficit of qualified specialists in the area of organic land use and certification of organic products.

For the national economy where about 27% of the population live in the rural area and above 12% of the employable population are involved in agricultural production, the formation and development of agriculture focused on organic production will allow to solve not only problems related to ecological safety of food and natural environment, but also social problems of rural territories by improving the level of rural population's employment.

The agriculture plays an important role in forming the territory economy and lifestyle of the population. Its share is above 18% of the gross regional product against 6-7% in Russia. About 45% of the territory population lives in the rural area. The Altai Territory has a large agricultural potential and holds the first position in Russia according to the cropland area (6.5 mln. ha). Above 75% of the latter is chernozemic soil. According to the volume of production of gross agricultural products, the Territory tops among regions of the Siberian Federal District and is found in the top ten of Russian regions. Its share is about 4% of the Russian production of cereal crops, 3% – sunflower seeds, 15% – linen flax, 5% – milk, 3% – potatoes, about 3% – meat and eggs, about 2% of sugarbeet and vegetables.

The Altai Territory makes a considerable contribution to solving the problem of food safety of the country. 85% of the produced grain, about 70% of flour and fat cheese, 60% of alimentary products, and above 30% of dairy and meat products are imported beyond the region. The Altai Territory has all required resources to transfer to using the principles of organic agricultural production (Zhidkih A.A., Voronkova O.Yu., Elchishchev E.A., 2015; Voronkova O.Yu., Kundius V.A., Mikhaylushkin P.V., 2014).

Taking into consideration the resource-saving orientation of agriculture focused on organic production, the system of managing land use will act as a sub-system of the general production system of managing an agricultural establishment. The main goal of this sub-system is to harmonize aims and tasks of organic agricultural production with the financial result of the establishment activity, i.e. rationally used resources must give the maximum profit.

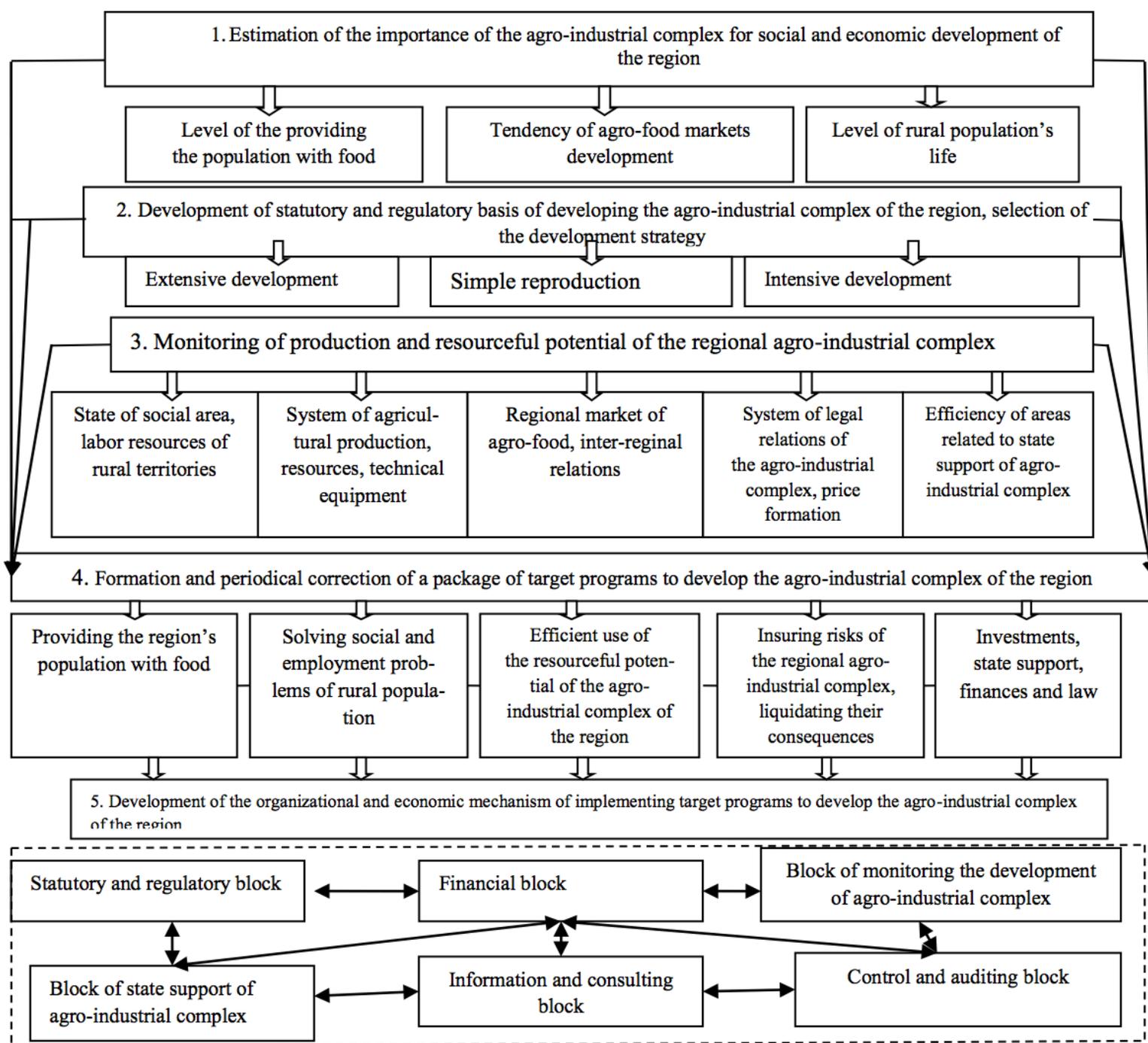
The transfer to organic agricultural production must comply with the goals and strategy of developing every separate agricultural producer. We offer to consider the formation of the methodic basis of agriculture focused on organic production based on the system approach as an interrelation of inter-stipulated ecologic and economic processes in terms of providing the efficiency of agricultural production by improving the ecological quality of croplands and produced goods.

### **3.3 Implementing regional target programs related to developing organic agricultural production**

The development of state programs related to supporting agricultural establishments focused on organic production plays an important role in the efficiency of organic agricultural production (Sycheva I.N., Permyakova E.S., Kuzmina N.N., 2016; Sycheva I.N., Permyakova E.S., 2015, 2016). The implementation of regional target programs allows to improve the production efficiency in separate target segments due to the targeted support of subsidies receivers and constant control over rational and target use of the provided budgetary finds by the authorized bodies. We offered a mechanism of forming and implementing regional target programs of developing the agro-industrial complex (Figure 2).

Based on the conducted research, a project of the Territory target program "Involving

Agricultural Crop and Long-fallow Lands that Are Not Used for Purpose in the Altai Territory in Agricultural Production for Organic Production for the Period of 2017-2022” was developed. It aims at more complete and efficient use of crop lands by agricultural producers, increase in the efficiency of their economic activity, as well as the growth of organic agricultural production in the Altai Territory (Sycheva I.N., Svistula I.N. et al., 2015; Sycheva I.N., 2014; Sycheva I.N., Permyakova E.S., Ovchinnikov Ya.L., 2015).



**Figure 2.** Mechanism of Developing and Implementing Regional target Programs of Developing Agro-industrial Complex

The expected results of the Program measures include the following:

- 1) Increase in the share of the purposefully used croplands by 2022 up to 100% as to 2015,
- 2) Involvement of idle crop lands with the area of 207 thous. ha and long-fallow lands with the area of 110 thous. ha in organic agricultural production,
- 3) Creation of an efficient mechanism of involving idle crop lands in agricultural production,
- 4) Reproduction of soil fertility of the cultivated area, and
- 5) Annual planning of production use of crop lands (Table 2).

**Table 2.** Project of Efficiency of Measures Taken within the Project of the Program “Involving Agricultural Crop and Long-fallow Lands that Are Not Used for Purpose in the Altai Territory in Agricultural Production for Organic Production for the Period of 2017-2022”

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8	Planned inspections in terms of compliance with the land legislation, %	100	100	100	100	100	100
Resourceful provision of the Program							
9	In total, including, mln. RUB	70	523	504	416	395	175
10	Territory budget	26	134	144	130	124	102
11	Local budgets	-	161	115	65	60	-
12	Non-governmental resources	44	228	245	221	210	173

The standard applied for calculating the limited volume of subsidies, which is RUB 2,000 per 1 ha of the idle crop land involved in the agricultural production turnover, was offered. This indicator is based on the cost of 60 liters of diesel fuel required for taking necessary soil processing measures on involving the reserve lands suitable for organic production in the production agricultural turnover.

The following volumes of budgetary subsidies for involving reserve lands suitable for organic production in agricultural production in the Altai Territory are assumed: 2017 – RUB 26 mln., 2018 – RUB 295, 2019 – RUB 258 mln., 2020 – RUB 195 mln., 2021 – RUB 184 mln., 2022 – RUB 102 mln.

In order to estimate the efficiency of production use of reserve lands suitable for organic production involved in agricultural turnover, bodies of municipal establishments of the Altai Territory are recommended to swiftly monitor the state of land resources involved in the turnover to take decisions about terminating further subsidizing of the agricultural producer when negative factors of land use are revealed: decrease in the soil fertility, worsening of the qualitative state of the crop land area, as well as if the yield of the cultivated agricultural crops is considerably lower than the average one in this municipal establishment.

The Program measures aim at improving the efficiency of agricultural production and forming pre-requisites for providing food safety both in the Altai Territory and in the Russian Federation as a whole due to increasing the volume of organic agricultural production.

## 4. Discussion of Research Results

Based on strategic plans of developing the organic agricultural sector of the Altai Territory, as well as the authors' Territory target program "Involving Agricultural Crop and Long-fallow Lands that Are Not Used for Purpose in the Altai Territory in Agricultural Production for Organic Production for the Period of 2017-2022", production of the agro-industrial complex of the Altai Territory for the period of 2017-2027 is forecasted (Table 3).

**Table 3.** Forecasting Production of the Agro-industrial Complex of the Altai Territory Taking into Account the Implementation of Offered Recommendations for the Period of 2017-2027, thous. t.

Target indicators	Year											
	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	
1	2	3	4	5	6	7	8	9	10	11	12	





Level of profitability of agricultural establishments , %	12.0	12.5	13.0	14.0	15.5	16.7	17.5	18.0	18.8	19.5	20.0
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The research defines that Russian regions have all required natural and climate conditions, resourceful and land potential to organize a system of organic agricultural production (along with traditional). The system analysis and estimation of the opportunity to use the global experience of organic agricultural production as combined with the current traditions of the Russian land use are a pre-requisite for strategic development and strengthening positions of agriculture in the system of national economy. It is possible to assume that the agriculture focused on organic production acts as “a new philosophy” in the system of land use.

## 5. Conclusion

We have offered to interpret the agriculture focused on organic production as farming that simultaneously uses the traditionally existing industrial system of production focused on organic agricultural production and features a gradual increase in the share of organic sector based on rational, territorially adapted land use with the minimally stipulated chemicalization of agro-technical and technological processes of agricultural production. Specified theoretical grounds of agriculture focused on organic production allow to more efficiently resolve the problem related to rational use of the land potential of regions by involving long-fallow and idle tillage defined as the reserve of lands that are suitable for organic production in the production agricultural turnover.

The formation of the organic production system does not mean the refusal from industrial agricultural production. To our mind, both organic and industrial systems of agricultural production can efficiently function simultaneously, gradually transforming into agrarian technology that will meet the current and supposed needs of the population in high quality and ecologically safe food.

The formed concept of the agricultural policy focused on organic production on the level of the subject of the Russian Federation and stipulated mechanism of state management of developing the organic agricultural production define the succession of actions and tools that are used when mutually stipulated organizational and economic, innovational and technological, and management measures are taken to optimally organize agricultural production when agricultural producers move to using organic activity principles.

The stipulated mechanism of developing and implementing regional target programs of developing the agro-industrial complex made it possible to develop the project of the Territory target program “Involving Agricultural Crop and Long-fallow Lands that Are Not Used for Purpose in the Altai Territory in Agricultural Production for Organic Production for the Period of 2017-2022”. It aims at more complete and efficient use of croplands by agricultural producers, increase in the efficiency of their economic activity, as well as the growth of organic agricultural production in the Altai Territory. According to the program, up to 2022, 207 thous. ha of crop lands that are not used for purpose, and 110 thous. ha of long-fallow lands will have been involved in agricultural organic production.

The limited volume of subsidies up to 2022 defined by the authors on the basis of the calculated standard of the idle tillage involved in the agricultural production turnover, being RUB 2,000 per 1 ha. made up RUB 1,060 mln. The developed methodology of monitoring the estimation of using organically applied log-fallow lands for the agricultural production enables municipal establishments of the Altai Territory to efficiently monitor the state of land resources involved in the turnover in order to take decisions about terminating further subsidizing of this agricultural producer if negative factors of land use are revealed, as well as when calculating

the rent of agricultural producers for using lands of regional funds of lands re-allocation.

Based on the Program of Developing Agriculture of the Altai Territory, and proceeding from the optimal scientifically stipulated structure of cultivated areas, yield of agricultural crops and productivity of cattle, as well as the plan developed by the authors on involving agricultural crop and long-fallow lands that are not used for purpose in agricultural production turnover for organic production, the production of agro-industrial complex of the Altai Territory was forecasted for the period of 2017-2022, and the share of organic sector was defined. The focus of land, material, financial, labor resources in terms of developing the agriculture focused on organic production not only opens opportunities for increasing the national organic production but also makes it possible to decrease the dependence on import, and will contribute to improving the quality and ecological safety of products, developing diversification of agriculture and associated areas of the agro-industrial complex.

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