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# The Prospects of Ecologically Clean Farming Production in the Cross-Border Areas of the Great Altai

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### ABSTRACT

The scientific foundations of farming focused on ecologically clean production have been developed. The concept and management mechanism of the development of farming focused on ecologically clean production have been formed. The institutional mechanism of the strategic development of the velvet antler deer breeding industry in the Altai Region and the Republic of Altai has been improved and tested; as opposed to the existing ones, it has been supplemented by a scenario approach to planning and forecasting. The proposals for strategic development of regional velvet antler deer breeding of the Altai Region and the Republic of Altai have been made forward. Based on stage-by-stage method, the most probable scenario of velvet antler deer breeding development has been proposed and a normative model of the velvet antler deer breeding industry status has been developed.

**Keywords:** Ecologically Clean Farming Production, Organic Product Market Model, Efficiency of Regional Velvet Antler Deer Breeding Industry, Strategic Development of Velvet Antler Deer Breeding Industry, Development Indices

**JEL Classifications:** Q12, Q57, R11

## 1. INTRODUCTION

Sustainable economic development is possible provided that the food security is ensured, the global resources are conserved and the living standards are raised (Zaytsev, 1999). One of the effective ways of raising living standards in rural areas, sustainably developing rural areas and improving farming industry production efficiency is the development of ecologically clean farming production and organic (ecological) farming which may become an effective niche for Russia and a new sphere of influence in the world.

Currently, the organic food market is one of the fastest growing and promising areas of farming. National food security, health and quality of life of the population are largely determined by the development of ecologically clean production based on innovative developments in the field of alternative land use, conservation of natural resources, land resources in particular. An open marketplace for ecologically clean products and a significant

land potential create all necessary conditions for the formation and development of domestic farming industry focused on organic production (Voronkova 2014; Kundius and Voronkova 2014; Mikhnenko, 2003).

## 2. METHODS

The goal of this study is to develop the theoretical and methodological provisions, practical proposals for the development of the farming industry based on ecologically clean production at the regional level. The research target is the organizational structure, economic, organizational and managerial problems of farming enterprises focused on organic production. The research subject includes the management relations arising in the process of formation and development of farming focused on ecologically clean production.

The theoretical and methodological basis of the research included the works of Russian and foreign scholars on the issues of organic

production management. The conceptual framework also included the research results and the recommendations of the Russian Academy of Agricultural Sciences, the Russian Federation laws, presidential decrees and resolutions of the Government of the Russian Federation, normative legal acts of the subordinate entities of the Russian Federation, the EU resolution on the development of ecological agriculture and the IFOAM standards.

### 3. RESULTS

The following research results were obtained: One of the promising directions for Russia on the whole and cross-border areas of the Great Altai may be the development of farming focused on ecologically clean production. This kind of production creates the conditions and mechanisms for the development of small and medium-sized business. Even today some small farming enterprises produce goods that meet the eco-standards. However, the current strategies of retail networks and customer demands focused on low prices do not enable to trigger increased demand for organic products. The lack of distribution channels, high storage and transportation costs and the lack of state standards hinder the development of the market of organic products.

The entrepreneurs involved in organic food production need additional funds. The organic food production is a capital- and labor-intensive process that is accompanied by increasing transaction costs for certification, labeling, examination and promotion. These costs are reduced through specialized trade shows, competitions and direct sales.

Organic farming can increase Russia's GDP by 300-400 billion rubles and exports by 300 billion rubles, and create 75-100 thousand jobs in rural areas. The interest of entrepreneurs in ecologically clean production is in the price increment by 20-50%, and, consequently, increment in profit. The development of organic farming will also enable reducing the atmospheric and soil pollution, developing the entrepreneurial potential and ensuring adequate standard of living of the population.

An important direction of ecologically clean farming production in the cross-border areas of the Great Altai is velvet antler deer breeding. The conducted research revealed the potential and necessary conditions for the development of velvet antler deer breeding and enabled making forward science-based advice.

The proposed program of stage-by-stage development of velvet antler deer breeding industry will enable the following:

1. Using public support, increasing revenue, production volume and the herd of marals (red deer subspecies), establishing veterinary stability in the regional velvet antler deer breeding industry; by the end of the first stage, it is planned to increase the maral herd up to 70,000 deer, the production volume of green antlers to 150.0 tons, and that of preserved antlers - up to 60 tons; the productivity of a deer - up to 7 kg of green antlers, and antler sales revenues - from 240 to 400 million rubles.
2. Implementing the measures for financing research and development, upgrading the technology of velvet antler

preservation and processing, and attracting qualified personnel. Dried antler cost supplement is determined by higher material costs, particularly the cost of electrical power required for green velvet antler drying and further mechanical grinding. Therefore, innovative high-tech waste-free velvet antler processing techniques should be implemented in velvet antler deer breeding industry.

3. Working out marketing activities and developing cooperation with complementary industries as well as the production and sales of related products and services.
4. Enhancing the role of the velvet antler deer breeding industry solves the problem of the industry and ensures a multiplier effect. The communication infrastructure, tourism and construction industries and road infrastructure receive a large development effort; the demographic situation in the rural areas is improving, etc. This will lead to the development of the sub-industries (the priority ones), achieving financial stability of the farming sector and foreign economic cooperation, and creating general conditions for farming functioning as well as the development of social and engineering infrastructure of rural areas.

### 4. DISCUSSION

In our opinion, to increase the organic production and improve its efficiency in the cross-border areas of the Great Altai, the measures should be developed for the industry diversification, deep processing of velvet antlers, cooperation with a complementary industry and the production and sales of related products and services.

Organic products are gaining in increasing popularity throughout the world due to steady and fast growing demand.

The main reasons of this popularity are as following:

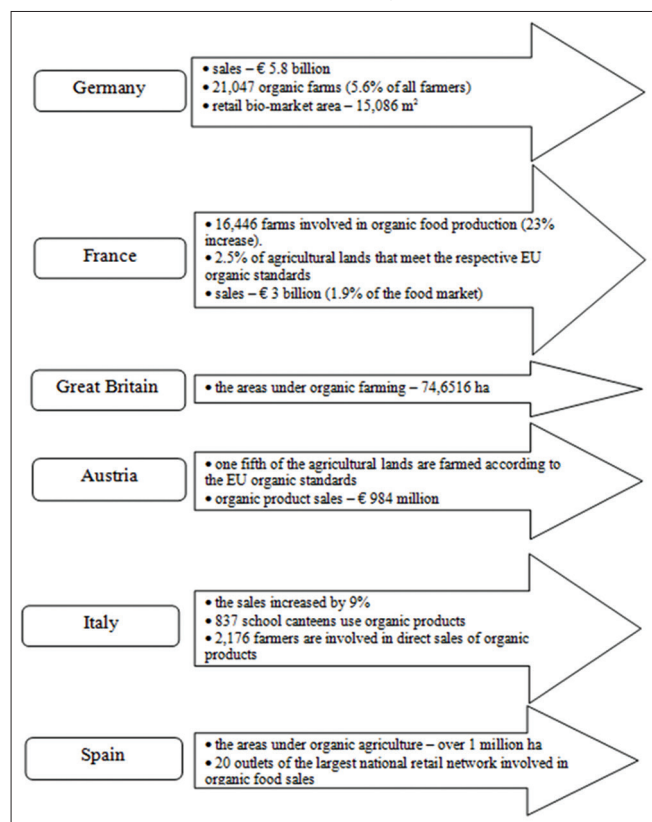
1. The food related environmental crises of the past decade (the outbreaks of "mad cow" disease (BSE), foot-and-mouth disease, avian flu, etc.) and increasing distrust of conventional food.
2. The public concern about the hazards of genetically modified organisms in food.

The EU organic farms produce legume and cereal crops, tea, honey, mushrooms, eggs, meat, milk and dairy products, vegetables, mariculture food, yeast and wine.

The share of organic farming in Europe in 2010 was as following: Around four percent of agricultural lands - 7.39 million ha, including 3 million ha of biological fields and 3.2 million ha of biological pastures. The largest percentage of organically farmed lands is in Italy (1.15 million ha), followed by Spain (1 million ha) and Germany (0.87 million ha) (Figure 1).

According to Rita Medvednik, Candidate (PhD) of Biological Sciences, an expert on imported organic products, "organic products are distinguished by a high nutritional and biological value. As opposed to the products rich in rapidly digestible carbohydrates, the organic products contain proteins, fats,

**Figure 1:** The situation of the European organic food market (as of the start of 2010)



carbohydrates, vitamins and minerals in balanced quantities; such food is digested slowly, so a sense of fullness lasts much longer” (Medvednik, 2010).

Russia has a huge potential for organic agriculture and production of organic food stuff; this is due to, first of all, large land areas suitable for alternative agriculture.

The contemporary history of organic farming in Russia dates back to 1989, when the All-Union Program “alternative agriculture” was started. There are farmers in Russia who are interested in organic farming practices. A number of farms in Tula, Orel, Novgorod, Omsk, Pskov, Kursk, Vladimir, Orenburg, Yaroslavl, Moscow and Stavropol Regions have already switched over to organic production.

The organic farming in Russia will contribute to the creation of the conditions and mechanisms for the development of small and medium-sized forms of agricultural production.

Russia’s ability to follow the international standards and to be competitive on the global market for ecologically clean agricultural products is quite high. This may be explained by the following:

1. Some Russian crops are not widely cultivated in the West or are not grown at all, and some Russian wild berries, mushrooms, pine nuts and herbs do not have any analogues in the world.
2. More demanding national standards for ordinary Russian food products than those in the West. Russian food products contain

much less chemical ingredients than imported products do, and that makes them more popular on the Russian domestic market and internationally.

3. Huge land resources in Russia; this means, however, that the implementation of organic farming systems over large areas should be agreed with many smallholders.

There are some problems arising with the implementation of organic production. Firstly, the high cost of organic agriculture production projects. The financial expenses required for the implementation of these technologies are estimated at US \$ 200-1000 per 1 ha for grain crops and at US \$ 5000-8000 per 1 ha for fruit crops. Secondly, the lack of lands certified for organic farming (certified lands in Russia make only 0.003% of the total agricultural land area). Third, increased time expenditures and costs for organic production are several times greater than those for conventional production. For example, it will take 2 years to grow organic wheat, and 6 months to raise organic chickens. Fourth, the pre-sale product handling, storage and shipping. Since the volumes of organic products are still relatively small, it is necessary to ensure avoiding the risk of mixing them with conventional products.

Retail networks, which operate in a highly competitive environment, develop various mechanisms to attract customers (attractive prices, high quality service, unique product range, etc.). In this situation, increased customer loyalty should be expected in the event that the trade network’s strategy will meet the current demands of the customers; environmental demands become increasingly important (Table 1).

There are many small agricultural enterprises in Russia which produce goods of the appropriate quality. Often, these companies do not have the funds to promote their products, but they make, for example, a sausage according to the “right” Soviet standards which required one hundred percent of meat. Bio-markets may be an incentive to the development of these enterprises. Bio-markets will become the sales points for organic product retail. The total area of such stores should be more than 1.500 m<sup>2</sup>. The large areas of such stores are determined by the need for open space which will be used for organic product permanent presentations and tasting. The main objective is to explain to the consumers what organic products are. Professional sales advisers in the field of nutritional science and environment should work in the selling-floor.

Independent bio-market players - farmers, producers and traders will openly enter the market only when the new stores show a real demand for organic products, and the existing retail networks are sated with mass products and pay attention to the specialized niches.

There are a growing number of farmers in Russia who pay more attention to product quality, and consequently, their products are able to compete with the products of large agri-businesses. Organic farming is more knowledge demanding and labor-intensive, while the conventional farming is more focused on the capital and requires increased investments. Due to its greater labor intensity, organic farming creates new jobs for the rural population; the

**Table 1: Forecasted changes in the strategy of retail networks under the influence of environmental demands of the consumers**

Public trends	The change in consumer perception and demands	The change in retail network strategy
Improved living standards of the population	Increased attention to the health and social well-being issues	The expansion of product group range
Environmental contamination, ill health, promotion of healthy lifestyles	Increased attention to organic products	Selling ecologically clean products Selling products without chemical additives and dyes Replacement of artificial packaging materials with natural ones
Reduced life expectancy	Promotion of healthy lifestyles	Reducing cholesterol content Reducing the content of fat, salt and sugar Increasing the content of calcium and vitamins Selling diet food, functional products and vitamin supplements

product price is raised with the increased labor costs. At the same time, opinion polls show that many people are comfortable with the increased food prices in the range of 40-70% if there is a guarantee of product quality and ecological safety.

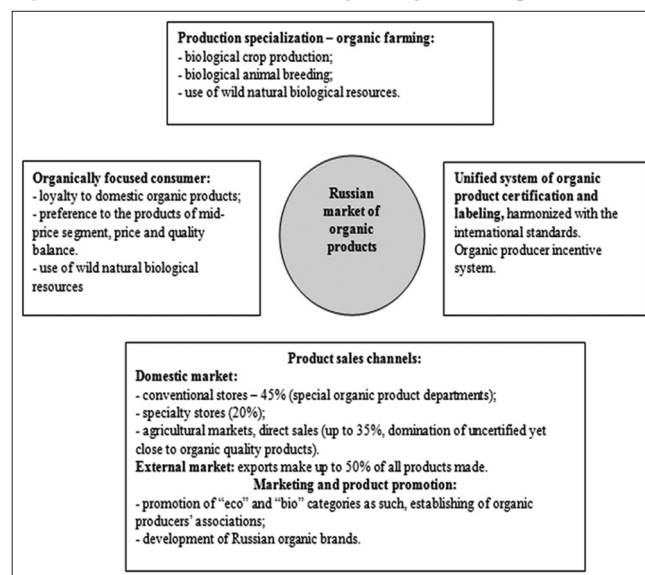
Having created the conditions for organic agriculture development, by 2020 Russia is able to become a world leader in the production of ecologically clean goods with a turnover in this sector of over 300-400 billion rubles on the domestic market and export volume of over 300 billion rubles, and thus taking 10-15% of the world market. According to expert estimates, the number of certified organic agricultural producers in Russia will exceed 15,000 by 2020. The development of organic agriculture in Russia will allow creating 75-100 thousand jobs in the rural areas with a high level of income.

The Russian model of organic agricultural product market was developed as a part of the prepared forecast (Figure 2).

The products of organic farming essentially differ from conventional products by their higher quality. Organic products meet specific quality criteria that enable meeting the demand for healthy and ecologically clean products (Hensche and Vogt, 1995).

The growing market of organic agricultural product offers many opportunities for the Russian agricultural producers (Open Letter to the President of the Federation Council, 2015):

1. The expansion of the product range in the promising direction.
2. The involvement of a new developing and highly-profitable consumer segment.
3. Separation from the competition.
4. Carving out a free market niche.
5. Offering a unique domestic product having no analogues in the Russian and foreign markets.
6. International certification and simplification of entering the broad international market of organic agricultural products.
7. Good starting opportunities for organic agricultural production in Russia and, as a consequence, a high competitiveness of Russian organic producers in the international market: A low prime cost and high ecological cleanness.
8. A real opportunity of attracting foreign partners and investors who finance highly-profitable and popular organic projects in the West.

**Figure 2: The Russian model of organic agricultural product market**

9. Formation of favorable environmental image for the authorities and consumers.

Organic food in Russia as in other developed countries is produced by private business entities. The interest of the entrepreneurs in organic food production is determined by obtaining additional profit.

The steady growth in demand for this type of products as well as their exceeding prices makes as an average from 20% to 50% as opposed to conventional food products (Morozova, 2003). It is entrepreneurs who possess all the qualities needed for organic food production: The ability to make unconventional decisions; integrate the new production and commercial ideas in terms of getting additional profit; quickly evaluate the innovations in terms of their ultimate effectiveness and market conditions from the perspective of additional profit; take the risks, etc.

Despite the growing demand for organic products from the population, their share in the entire mass of commodities makes very small percentage. This is due to the fact that this kind of production requires considerable investments, costs and other efforts (Kurochkin and Smolnyakova, 2012). But the significance

of the production and consumption of organic products is confirmed by the effectiveness of innovative entrepreneurship development in agriculture (Table 2).

The agricultural industry complex of the Altai Region and the Republic of Altai is one of the most important parts of the economies of these cross-border regions of the Great Altai (Kurtsev, 2005; Makoshev, 1996; Pershukevich, 2001). They are leading in the production of agricultural commodities among the other regions of the Siberian Federal District (21.3% in 2013). The production of the major agricultural commodities (grain, meat and milk) makes 30-40% of the total production in the Siberian Federal District. Commercial breeding of marals with the purpose of making products based on advanced processing is one of promising directions of the strategic development of agriculture in the Altai region (Bocharov et al., 2005; Frolov, 2006). The Republic of Altai and the Altai Region are considered as promising Siberian areas for the development of maral farming (Table 3). The genetic potential of marals is quite high there but proper selection is not conducted to the full, sometimes due to improper nutrition.

In the coming years, the main and the only velvet antlers export market for the Altai maral farmers will be South Korea which consumes about 80% of the world's produced velvet antlers. This market has been historically focused on large antlers of the Altai maral, New Zealand red deer, American wapiti and Chinese maral.

A necessary stage for maral breeding strategic development was the development of possible scenarios of the macro-environment change characterized by a set of indicators (Chandler, 1969; Bourgeois, 1998). The production of organic products of the maral breeding industry of the Altai Region and the Republic of Altai on the basis of a methodical approach should consist of several stages (Figure 3) at which the transformation of the incoming flow of raw materials and resources to the value for the end consumer occurs (Tarasova, 2014a; Tarasova, 2014b).

Stage 1 is to increase the maral herd, volume of production, revenue increase, improved veterinary stability in the regional maral breeding industry, and attracting state support; at the end of the first stage the following increases are expected: Maral herd, the

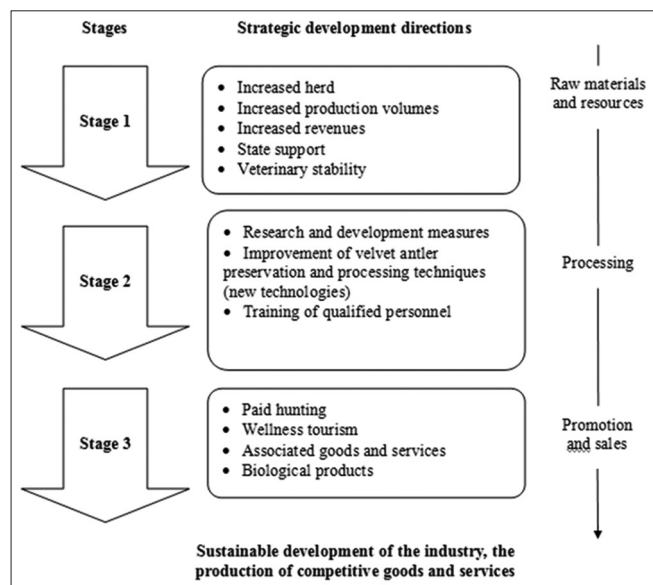
**Table 2: The effectiveness of the expansion of organic production and organic food product sales**

Effect type	Essence of effect	Implementation measures	Result
Environmental	Reduction of air, water and soil pollution	The reduction of noxious emissions into the atmosphere from the fuel-power complex The reduction of sewage discharge and the amount of pollutants to surface waters Improvement of soil fertility and reduction of the toxic effects of heavy metals on forage crops by organic fertilizers at least 10 tons per 1 ha, liming and phosphorite application Testing forages for heavy metals and monitoring their content in cow diets at different stages, particularly during grazing In order to obtain clean dairy products made of milk produced in the area of high environmental pollution, the content of toxic substances in the milk should be taken into account, particularly the behavior and concentration of individual elements as well as the type of product produced Suburban farms and organic processing enterprises should regularly check raw milk and finished dairy products for toxic substances (Mikhnenko, 2003)	Reduced morbidity Health Improvement Increase in labor productivity Wage growth Improvement of material wealth of the population Reduced infant mortality Gene pool improvement Immune system reinforcement Reduced treatment expenses
Economical	The development of entrepreneurial potential that is not much involved in the modern market economy	Increasing competitiveness and financial sustainability of agricultural enterprises, the revenue part of the budgets of all levels	Entrepreneurial approach in the development of the major branches of the economy including agriculture, where the proposed changes were not accompanied by the transition to a new innovative and entrepreneurial activity pattern
Social	Ensuring an adequate standard of living of the Russian population	Due to its labor intensity organic farming creates new jobs in the rural areas, and with increased labor costs the product price is raised	The satisfaction of the basic vital human needs in ecologically clean products, drinking water, air and other environmental components
Institutional	State incentive of the Russian entrepreneurs by the state	Tax and other benefits provided to the public and other enterprises, institutions and organizations that produce organic products Special taxation of environmentally harmful products that are directly or indirectly harmful to human health Tax exemption of environmental foundations Concessional lending to enterprises involved in organic production regardless of the ownership Grant financing from the federal and local budgets under government programs	Attracting entrepreneurs to organic food production, the emergence of competition; as a result the organic products become more available to customers

volume of raw and preserved velvet antler production, and sales revenues of maral farming products from 240 to 400 million rubles.

The primary task of economic calculations for Stage 1 is to determine the maximum possible volume of production using the existing equipment; this is the basis for further calculations (Table 4).

**Figure 3:** The model of the strategic development of the regional maral breeding industry of the Republic of Altai and the Altai Region



By the end of Stage 1 it is planned to increase the maral herd up to 70,000 deer, the volume of production of green velvet antlers up to 150.0 tons, that of preserved velvet antlers up to 60 tons, the productivity of a maral up to 7 kg of raw antlers, and antlers sales revenues from 240 to 400 million rubles. The competitive ability in the maral farming sector may be achieved with advanced raw material processing technologies implemented at Stage 2.

Stage 2 is the implementation of measures for supporting research and development, improvement of velvet antler preservation and processing techniques, and attracting qualified personnel. The increase of dried velvet antler prime cost is determined by higher material costs, particularly the cost of electrical power required for green velvet antler drying and further mechanical grinding. Therefore, innovative high-tech waste-free velvet antler processing techniques should be implemented in velvet antler deer breeding industry (Lunitsyn and Frolov, 2006).

Table 5 presents the estimates of the effectiveness of new technologies of cutting, preserving and processing of maral farming products.

Stage 3 is based on the implementation of marketing activities, cooperation with complementary industries and the introduction of associated products and services. It is obvious that the cooperation of maral farming enterprises with the tourism cluster at wellness tourist facilities may promote the development of paid hunting tourism in the Republic of Altai and the Altai Region.

**Table 3: The indicators of economic efficiency of regional maral breeding in the Altai Region and the Republic of Altai**

Indicator	2005	2010	2013
Altai Region and Republic of Altai			
Velvet antlers sold, kg	53,802	44,100	42,140
Average sell price of 1 kg of velvet antlers, thousand rubles	5.809	3.90	3.63
Prime cost of 1 kg of velvet antlers, thousand rubles	2.202	2.39	2.60
Sales volume of maral farming products, thousand rubles	312,933	171,941	153,027
Prime cost of products sold, thousand rubles	118,201	105,536	109,758
Profit, thousand rubles	193,902	66,405	43,270
Russian Federation			
Velvet antlers sold, kg	54,900	45,000	43,000
Average sell price of 1 kg of velvet antlers, thousand rubles	5.796	3.97	3.61
Prime cost of 1 kg of velvet antlers, thousand rubles	2.202	2.39	2.60
Sales volume of maral farming products, thousand rubles	319,766	178,640	155,416.8
Prime cost of products sold, thousand rubles	120,613	107,690	111,998
Profit, thousand rubles	197,951	70,950	43,419

**Table 4: The main indicators of maral farming strategic development in the Altai Region and the Republic of Altai**

Indicator	UoM	Years										Total
		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	
Revenues from maral farming product sales	Million rubles	492	584	703	823	943	1064	1185	1307	1430	1178	9709
Creation of additional jobs in velvet antler farming industry	Jobs	70	75	80	80	75	75	75	70	65	65	730
Investments to the industry development	Million rubles	30.55	25.57	23.69	21.4	19.3	17.1	14.89	13.6	12	11	188
Tax payments to the state budget	Million rubles	91	99.6	109.9	122.4	137.7	156.8	166.04	179.74	192.84	98.6	1354.62
Production of maral farming goods												
Maral herd, total	Thousand heads	74	75	76.2	77.9	79	80	81.2	82.3	87.4	92.5	92.5
Gross output of green velvet antlers	t	119	122	125	129	134	137	141	146	151	153	1357
Output of preserved velvet antlers	t	60.8	63.2	65.6	68	70.4	72.8	75.2	77.6	80	82.4	716

Wellness tourism has a similar market potential as active tourism does, and may double the figures of the intra-regional and intra-republic tourism.

At present, the regional maral breeding industry has a sufficient number of technologies for health-improving activities (velvet antler brew baths, micro-clysters with pantogematogen (velvet antler haematogen), velvet antler haematogen baths for legs, etc.) to initiate the formation of the image of the Republic of Altai and the Altai Region as a recreational area which base should include health-improving opportunities of maral farming.

At the same time the wellness tourism as a direction is much more environment-friendly than the active tourism. The wellness tourism offers quite new opportunities in terms of incoming tourism. According to the forecast, the tourist mobility in the Altai Region and the Republic of Altai will be fast growing.

The conducted evaluation and forecasting of the economic efficiency of maral farming production in the Altai Region and the Republic of Altai confirmed that the measures for the development of the regional maral farming industry contribute to the increase of maral herd and sales revenues of maral farming products (Table 6).

The 10 years implementation plan for the strategic development of the maral farming industry requires the following amounts

of support: About 2 billion rubles from the federal budget (357.2 million rubles), republic budget (194.4 million rubles), regional budget (150.8 million rubles) and non-budgetary sources (1,126.28 rubles); the support is to cover part of the expenditures for the purchase of feeds and forages, pedigree marals and attracting investment loans (Poltarykhin and Tarasova 2014).

Therefore, by 2024 the strategic development will enable the maral farming industry of the Republic of Altai and the Altai Region earning the profit up to 60 million rubles per annum; the revenue directly from the sales of maral farming products will make 9.709 million rubles and the maral herd will increase by 25%. Our proposals for the formation and implementation of the strategy of the industry development will improve the efficiency of the maral farming industry of the Altai Region and the Republic of Altai.

## 5. CONCLUSION

- In terms of strategy, we believe that the prospects for the production of ecologically clean agricultural goods in the cross-border areas of the Great Altai are in two directions: Through the use of the unique natural resource and a phased transition to the farming pattern focused on ecologically clean farming products and organic agriculture. The farming focused on the production of ecologically clean goods assumes parallel conventional commercial system and

**Table 5: Economic indicators of velvet antler production (a herd of 100 marals)**

Indicator	Conventional technique	Improved technique
Calculations of cost-effectiveness of reducing the death of animals during antler cutting and break prevention		
Breaks per cutting, heads	5	-
Balance cost of a stag, rubles	21,580	21,580
Lost profit due to stag loss (meat, preserved antlers), rubles per head	40,000	-
Loss caused by antler break, rubles per kg	3180	-
Cost of stress reduction and bleeding control, rubles per head	-	145
Prevented loss of maral death and antler break (economic loss), rubles per head	-	64,518
Cost effectiveness per 1 ruble spent, rubles	-	451
Cost-effectiveness of advanced product processing implementation		
Price of preserved velvet antlers, rubles per kg	5117	6047
Prime cost of preserved antlers, rubles per kg	3930.5	3628.2
Profit, rubles per kg	1185.0	2416.8

**Table 6: The main indicators of strategic development of maral farming in the Altai Region and the Republic of Altai**

Indicator	Years										Total
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	
Maral herd, total, thousand heads	74	75	76.2	77.9	79	80	81.2	82.3	87.4	92.5	92.5
Gross output of green velvet antlers, tons	119	122	125	129	134	137	141	146	151	153	1357
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Tax payments to state budget, million rubles	91	99.6	109.9	122.4	137.7	156.8	166.04	179.74	192.84	198.6	1354.62
Subsidies for maral electronic tagging, million rubles	4.5	5.8	5.1	5	4.4	4	3.7	2.5	2.3	1.8	39.1
Subsidies for feed and forage purchase, million rubles	104.1	100.1	101.6	102	103.6	105.4	108.1	110	111	111	1056.9
Subsidies for veterinary drug purchase, million rubles	12.9	12.6	12.7	12.8	11.7	12.7	13.3	14.6	15.7	16.8	135.8
Subsidies for pedigree maral purchase, million rubles	55	46	39	39	37	25	25	20	15	15	316
Research and development in the regional maral farming industry, million rubles	16.5	14	10.5	10.5	9	9	8.5	5.8	5.5	3	92.3
Creation of additional jobs in the regional maral farming industry	70	75	80	80	75	75	75	70	65	65	730

the production system focused on the output of ecologically clean products with a gradually increasing proportion of the organic sector based on sustainable, geographically adapted land use and minimal reasonable chemicalization of agronomic and technological processes of production (Voronkova 2014; Kundius and Voronkova 2014; Mikhnenko, 2003).

2. The formation of organic farming system does not mean abandoning the commercial agricultural production. In our opinion, both organic and commercial farming systems may efficiently operate in parallel to each other, and gradually be transformed into such agricultural technology that can meet the current and anticipated demands of the population for high-quality and environmentally safe food products.
3. The developed concept of agricultural policy focused on organic production at the level of a subordinate entity of the Russian Federation determines the sequence of actions and instruments used in the implementation of interrelated organizational, economic, innovation and technological and administrative measures aimed at the optimal organization of agricultural production in the transition of agricultural producers to the use of organic farming principles.
4. A set of indicators to create a normative model of maral farming industry development in the Republic of Altai and the Altai Region has been developed. The organizational mechanism of strategic development of the regional industry of the Republic of Altai was examined; that enabled developing a model of strategic development of the regional maral farming industry of the Republic of Altai and the Altai Region. The economic efficiency of the maral farming production in the Altai Region and the Republic of Altai was evaluated and forecasted; the measures on the strategic development of the maral farming industry of the Republic of Altai and the Altai Region were proposed.

In this paper we discussed only some of the issues related to the management of the farming industry developing organic production. Theoretical and methodological issues relating to the formation of the mechanism of farming enterprises' transition to the use of organic production methods remain undiscussed. The formation of scientific approaches to address these issues is the focus of our future research.

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