Strategic priorities for developing the agro-industrial complex and rural areas of the region

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Abstract. The relevance of the research topic is determined by the steady growth of agricultural production in the region and the lag in the development of social infrastructure, low attractiveness of the village. The presence of significant reserves of the spatial development of the agro-industrial complex (AIC) of the region makes it possible to optimistically predict that the project-targeted management of the implementation of the strategic priorities of the development of the AIC would improve the standard of living of the rural population and the spatial organization of territorial entities. The purpose of this scientific work is to substantiate the strategic directions for the development of the regional agroindustrial complex as a locomotive for the economic growth of the regional economy, contributing to the creation of comfortable living conditions for the rural population. The study used monographic and balance methods, economic and statistical ones, including cluster analysis, strategic analysis, theoretical and practical development of the authors. The study shows the increasing role of the agro-industrial sector in the region's economy and substantiates the strategic directions of development: ensuring the growth rate of agricultural and food products, leading all-Russian indicators, expanding export-oriented agricultural production; formation of breeding and breeding base; the introduction of digital economy technologies in agriculture; greening production and the development of organic agriculture. To create comfortable living conditions and livelihoods in rural areas, the main priority areas have been proposed, related to meeting the needs of the rural population in well-equipped housing and increasing the level of integrated infrastructure in rural areas with social infrastructure facilities. The implementation of the identified strategic priorities for the development of the agro-industrial complex and the social infrastructure will help to increase the efficiency of using the reserves of the agro-industrial complex and rural areas.

1. Introduction

The relevance of the research topic is determined, on the one hand, by the results of the growing agricultural production in the region, which are ahead of national indicators, achieved in recent years, and on the other, by the lagging development of social infrastructure compared to the regions of the Central Black Earth Region the attractiveness of rural areas and the prestige of agricultural labor [1].

As the experience of foreign countries and the domestic practice of positive regional development of individual regions show, in modern conditions of economic transformation, sustainable development of regions is directly proportional to the level of organization of the socio-economic space and the effectiveness of the use of regional potential [2, 3, 4, 5]. The spatial development of the

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regional agro-industrial complex implies progressive changes in the territorial organization of rural territories, which are the result of the state's purposeful activity to improve the distribution of productive forces on the basis of innovative modernization of the economy and rationalization of economic objects, the social sphere, and improvement of promising communication of the spatial systems of engineering infrastructure [6, 7, 8].

However, the increasing differentiation of the level of development of individual rural areas of the Voronezh region creates socio-economic tensions and, in the future, becomes a risk factor for the preservation of the territorial integrity of the region. Therefore, the ongoing research into the spatial development of rural areas is primarily aimed at analyzing the objects of territorial distribution; economic forecasting, foresight of the development of business processes in the agro-industrial complex; development of recommendations and proposals for the elimination of existing imbalances and asymmetries.

The general conceptual problems of strategic planning and development strategy of the agroindustrial complex are reflected in the work of many Russian agricultural scientists: A. I. Altukhov, N.V. Bannikova, I. B. Zagaytov, V.V. Kuznetsov, K.P. Lichko, P.M. Pershukevich, A. V. Petrikov, E.I. Semenova, A. F. Serkov, I. G. Ushachev, A. A. Chernyaev, including the regional aspects of this problem (V. G. Zakshevsky, A. I. Kostyaev, I. E. Risin, I.E. Treshchevsky, and I. F. Khitskov et al.).

The problem of supporting the rural population and the complex arrangement of rural areas is extensively researched by R. Kh. Adukov, L.V. Bondarenko, T.I. Bukhtiyarova, B.A. Voronin, S.G. Golovina, M.A. Kaimakova, V. A. Kundius, V. D. Mingalev, E.G. Mukhina, V.I. Nabokov, A.L. Pustuev, A. N. Semin, Yu. A. Simagin, N. G. Tarasov, V.M. Sharapova, and many others.

At the same time, the issues of the development of the agri-food system in modern conditions of globalization and regionalization of socio-economic processes and the spatial organization of rural areas are still poorly studied.

A promising tool for managing regional development, well tested in foreign and domestic practice, is the development and implementation of strategies for socio-economic development of the region [9].

The purpose of this scientific work is to substantiate the strategic priorities of the development of the regional agro-industrial complex, which will improve the quality of life of the rural population. The object of the study is the socio-economic development of the Voronezh region, the natural resource potential of its agro-industrial complex. In the course of the work, a sectoral analysis of the region was carried out; the state, development dynamics, and multidimensional components of the aggregate potential were investigated.

2. Methods

In the process of research, general scientific methods of cognition were used. First of all, we relied on dialectic, deduction, decomposition, methods of economic analysis and synthesis, and also design-constructive, economic-statistical and strategic analysis, monographic and balance methods. These methods allowed to justify the strategic priorities and the development of agribusiness and rural areas of the region.

As a result of the work performed, the strengths and weaknesses of the socio-economic development of the Voronezh Region were identified, existing and forecast opportunities and threats to the external environment were identified, competitive features were identified, and the potential for its development was assessed, scenarios, priorities and strategic goals of its development for the period up to 2035 were justified [1].

3. Results

The transition to the market principles of economic management and the decisive economic reorganization that started in the Russian Federation in the last decade of the twentieth century



affected spatial organization, increased the differentiation between regions and in these regions. It happened, first of all, between the city and village in the income and employment of the population, the level and quality of life, the provision of objects of social engineering infrastructure. To align sectoral and structural differences between urban and rural areas, it is necessary to search for tools and methods for spatial development of rural areas, primarily due to the development of agro-industrial production, the driver of which is agriculture, the main source of employment and incomes of people in rural areas.

In the last decade, the Voronezh Region has demonstrated a steady growth in agro-industrial production, which is significantly ahead of all-Russian indicators (115% in 2017). At the end of 2016, the region entered the top five regions-leaders in terms of growth of regional agricultural production. The role and importance of agriculture in the region is increasing. The contribution of the agricultural sector and food and processing enterprises to the gross regional product at the end of 2016 was more than 18%, whereas it was 7.5% in 2010 [9].

Along with this, there are significant reserves, the rational use of which would allow in a short time to increase production and export of products and the efficiency of development of the regional food market and strengthen the region's position on the world market, improving food supply and quality life of the population. This, in turn, will contribute to the systemic development of rural territories and improve the livelihoods of the rural population, the innovative development of agribusiness, the enhancement of the role of the Voronezh region in the territorial division of labor, the affirmative positioning and image formation of the region.

Taking into account the key problems of the socio-economic development of the Voronezh region and relative competitive advantages of the agro-industrial complex, the spatial priorities of the agroindustrial complex and ensuring food security were identified as the most important strategic priorities of the Strategy for Socio-Economic Development of the Voronezh Region for the period until 2035 [9, 10].

The achieved results of the AIC of the region and the level of self-provision of the population with food, along with a significant potential of the AIC, created objective prerequisites for the formation of one of the main agro-industrial centers in the region in the region. The strategic goal of the development of the region is to ensure the continuous development of the economy, strengthening the position of the Voronezh region in the national and global economic space [11].

To achieve the main goal, there are two main interrelated sub-goals, the implementation of which is planned on the basis of project-targeted management of strategic directions for the development of the agro-industrial complex and rural areas.

Sub-goal1: Strengthening the region's position on the national and global markets for agricultural products based on improving its competitiveness.

Sub-goal2: Creating comfortable living and living conditions in rural areas.

4. Strengthening the Region's Position on the Basis of Increased Competitiveness

The results of the problem-oriented analysis showed high growth rates in the production of agricultural and food products, favorable positioning, saturation of the domestic agri-food market, and competitive advantages of the region. With the presence of external prospective demand in the national and global markets, they predetermine the need to develop new strategic niches on the agri-food market, strengthen interregional ties, and expand export.

In 2016, the Voronezh region held leading positions in the agrarian market of the Central Federal District in grain products, sunflower seeds, sugar beet, milk, cattle meat [11].

To achieve the goals, it is necessary to solve two main interrelated tasks that would ensure the growth of the product offer and export development, on the one hand, and increase the competitiveness of agricultural products, raw materials and food, etc. For stimulating the product offer, the source of which is domestic production, it is planned to increase the volume and quality of



production, marketability, and to introduce new effective organizational forms of the spatial development of the agro-industrial complex.

4. 1. Ensuring the growth rate of production of agricultural and food products ahead of all-Russian indicators

The results of the study indicate the effectiveness and prospects of cluster forms of development of integration processes that contribute, through a synergistic effect, to materialize the effect of the global production, relative regional sectoral advantages [5]. Industry clusters contribute to the creation of modern highly efficient technologies for the production, processing and storage of agricultural products, raw materials and foodstuffs, increasing the efficiency and competitiveness of the agro-industrial sector and creating a knowledge-intensive and high-tech sector of the regional economy.

The dairy cluster continues to develop and expand in the region, in which a complete closed loop is carried out, including the production and processing of products, the delivery of finished products to final consumers, as well as the production of fodder and breeding pedigree livestock. Such companies as the Molvest JSC, EkoNivaAgro LLC, and MC Don-Agro LLC occupy the leading positions in the dairy cluster [12].

In addition, it is planned to attract investments in the dairy industry from foreign countries; currently a "pilot" Russian-Israeli project in the dairy business is being considered. It is planned to increase the volume of milk production (1,250 thousand tons) by 2035.

The meat cluster is expanding and improving, where a logically constructed structure of beef cattle breeding functions: genetics - production - feed - processing - sale. Significant participants are: EcoProduct LLC, Chesmensky Horse Farm LLC, and Zarechnoye LLC. It is planned to increase meat production up to 1050 thousand tons by 2035 [12].

The pig breeding cluster created in the region will include theSelection and Genetic Center (SGC), breeding reproducers, feed mills, and pig farms, which could ensure the maximum independence of cluster members from key external factors, as well as eliminate phytosanitary and other risks associated with interregional turnover of products. The main participants are: AGROECO GC, Cherkizovo-Pig-breeding LLC, Selective Hybrid Center LLC, Donskoy Bekon LLC, and SKH Moskovskoye LLC.

The Voronezh region practically in all types of agricultural products and many food products provides itself completely and for ensuing the further growth, it is necessary to increase domestic demand and develop export-oriented agricultural production, food, and processing industry [13, 14].

4. 2. Improving the competitiveness of agricultural products and food

To strengthen and expand the competitive position of the region in the market of agricultural products (capacity growth and deepening segments), it is necessary to maintain leadership in agricultural production, food processing industry, relying on the growth of pond productivity and increasing the competitiveness of products, in particular, the effectiveness of the quality control system, the introduction of new technologies and the development of new products.

The main competitors of the region in the agricultural market are the regions of the Central Federal District (CFD) and other districts of the Russian Federation (Table 1).

The results of the calculations (coefficients of Herfendal-Hirschman concentration and market concentration of CR) of the competitive environment of the agrarian markets showed that the national domestic markets for grain, milk and sun-flower seeds are low concentrated, fruits and sugar beets are moderately concentrated, and pigs - highly concentrated. The main competitors of the region in the growing national agrarian market are not only the regions of the Central Federal District and other districts of the Russian Federation but also the subjects of the near and far abroad.

To maintain leadership, it is necessary to constantly improve the competitiveness of products, monitor competitors and the situation on the agri-food market. Targeted measures aimed at the development of new high-tech knowledge-intensive industries of the agro-industrial complex,



independent of import supplies of seeds and plant protection, breeding procurement, and the full development of distribution networks, infrastructure, structures of the agri-food market and the development of the export [12, 15].

High competitive positions in the rating of regions and the significant potential and reserves of the regional agro-industrial complex development determine the possibilities of expanding interregional ties, searching for new segments (product and geographic) of the national and world markets. A capacious market for the sale of agricultural products (grain, sugar, vegetable oil, dairy, and meat products, eggs) are Moscow and the Moscow region, the regions of the Central Federal District.

Agricultural markets of the Russian	Competitors (market shares, %)
Federation	Veneral Design (12) Known dan Design (142) Desteu Design (11) Sterman el Design
Grain	Voronezh Region (4.3) , Krasnodar Region (14.3), Rostov Region (11), Stavropol Region (10), Viela and Parian (4.5), Krank Parian (2.8)
~ ~	(10), Volgograd Region (4.5), Kursk Region (3.8)
Sunflower	Voronezh Region (8.9), Saratov Region (11.6), Rostov Region (10.6), Krasnodar Region
seed	(10.3)
Sugar beet	Voronezh Region (12.5), Krasnodar Region (20.1), Kursk Region (10.6), Lipetsk Region
-	(9.7), Tambov Region (9.9)
Potatoes	Voronezh Region (2.9) , Bryansk Region (7.5), Tula Region (5.2), Nizhny Novgorod Region (4.3), the Republic of Tatarstan (3.8), Moscow Region (3.2), Lipetsk Region (3.1), Krasnodar Region (3), Republic of Bashkortostan (2.9), Tambov Region (2.5)
Milk	Voronezh Region (3.1), Republic of Tatarstan (6.8), Krasnodar Region (5.5), Altai Region
	(3.9), Republic of Bashkortostan (3.8), Udmurt republic (3)
Cattle	Voronezh Region (3.4), Republic of Republic of Bashkortostan (6), Republic of Tatarstan
	(5.7), Republic Dagestan (4.9), Altai Region (4.7), Krasnodar Region (4), Orenburg Region
	(3.9)
Pigs	Voronezh region (3.6) , Belgorod Region (20.2), Kursk Region (7.3), Tambov Region (4.9),
8-	Pskov Region (3.9)

Table 1. Market share of the Voronezh Region and its main competitors.

4. 3. Development of export-oriented industries and the formation of export competences of agricultural enterprises

The main tendency to achieve a significant expansion of exports is the formation of an infrastructure to support the export of agricultural enterprises based on the Voronezh Coordination Center, since for many domestic enterprises, there are organizational barriers and economic risks from lack of special competencies related to access to world markets, carrying out marketing positioning and the formation of their own sub-brands. The creation of an export commodity distribution infrastructure would allow the integration of agro-logistics system into the federal that connects the Far East, the Urals, Central Russia, Siberia, and the South. At the regional level, it is assumed (until 2020) to create a center to support the export of agricultural products based on the regional center of export-oriented enterprises. [12, 16].

Along with participation in the educational project of the Russian Export Center JSC (REC JSC), the formation of export competencies of agricultural enterprises of the Voronezh region is assumed. It also provides support for lending, insurance and participation in exhibitions, reimbursement of logistics and transportation costs for exporters of agricultural products. At the moment, the problems of inclusion in the Project are being considered: tools of state support in the form of grants for the creation of production export cooperatives that unite small and medium-sized businesses; its time coverage of costs for information and consulting services, logistics of agricultural products; standards for the study of industry export programs for certain types of agricultural products.

To achieve the strategic goals and forecast indicators of the target scenario for the development of the agro-industrial sector, strategic directions were justified and procedures were proposed to improve



the existing traditional mechanisms and introduce new progressive methods and tools for their implementation (Table 2).

Strategic priorities	Strategic directions of development	Methods of implementation
Strengthening	Ensuring the growth rate of	Formation and development of
positions in the	production of agricultural and food	competitive industry clusters,
national and international	productsahead of all-Russian indices	modernization of existing farms, pig houses; growing productivity
markets of	Formation of the agrarian market	Encouraging the creation of distribution
agricultural products	and its infrastructure	networks for agricultural products and foodstuffs
products	Expansion of export-oriented	Creation of commodity export
	agrarian production and processing	infrastructure, formation of export
	products	competences of agricultural enterprises
	The introduction of technology "digital economy" in agriculture	The use of sensors, automatic systems, robotics in the production, storage, transportation
Increasing the	Motivation for innovative	Creation of the newest world-class
competitiveness of agri-food products	investment production of large-scale projects, import substitution	technologies in animal husbandry, expansion of the existing domestic technologies
	Development of breeding and breeding in agriculture	Formation of breedingand seed centers
	Greening production, "green	Certification and adaptation to
	economy"	international norms and standards

Table 2. Strategic priorities, directions of development and methods for their implementation.

5. Creating Comfortable Living Conditions in Rural Areas

Measures taken by the government authorities to develop Russian villages have significantly increased the agricultural production and increased wages for agricultural workers. However, they have not yet led to a steady improvement in the socio-economic situation of rural areas [17].

Currently, the state policy is being implemented in the Voronezh Region, which takes into account the interests of the rural population of the region. However, despite the measures taken, the educational and professional, intellectual, reproductive, cultural and moral potential of the rural population continues to decline. The processes of concentration of resources for some rural areas with a significant shortage in others are characteristic not only of investment, but also for the development of agrarian production, increasing the prestige of rural labor and the livelihood of the rural population.

Historical differences between the city and the village in the conditions of everyday life, labor, housing, social, and cultural facilities and the services provided on their basis are preserved (Table 3).

Table 3. Provision of housing and social infrastructure in the Voronezh Region.

Indiaatana	Years						
Indicators	2010	2011	2012	2013	2014	2015	2016
The area of housing, coming on average per 1 inhabitant, square. m.							
city	25.8	26.2	26.6	27.3	27.7	27.6	27.6



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village Commissioning of residential buildings per 1000 population, sq. m. m.	28.3	28.9	29.3	30.0	30.7	31.1	31.4
city	596.5	525.2	583.1	687.9	781.4	812.4	844.7
village	190.2	238.7	268.2	362.7	461.1	463.9	466.8
The proportion of the total area,							
equipped with all kinds of amenities,							
%							
city	80.0	81.2	82.6	83.6	84.5	85.1	86.1
village	28.5	31.8	33.7	36.1	38.3	41.1	43.6
Coverage of children by preschool							
educational institutions, %							
city	66.0	68.5	71.2	70.4	73.2	76.8	77.4
village	23.6	24.4	26.5	29.0	33.8	37.5	38.7
The capacity of outpatient clinics per							
1000 people. population, settlement /							
shift							
city	22.5	22.1	22.3	22.7	22.8	23.0	23.3
village	13.3	13.4	13.5	13.8	14,5	15.3	15.7
Number of sports facilities per 1000							
person, units							
city	4.8	4.8	4.9	4.9	5.0	5.0	5.1
village	3.6	3.7	3.8	4.1	4.2	4.2	4.2

So, on average, in 2016 in the Voronezh region, the share of the total area of the city, equipped with all kinds of amenities, was equal to 86.1%, in the countryside it was 2 times less (43.6%). The gap in the amenities of urban and rural housing stock by utilities was: 1.3 times for central heating, 1.6 times for water supply, 1.9 for equipment of sewage, 2.4 times for hot water supply living.

In the field of education, there is a gap in the coverage of urban and rural children by preschool educational institutions, which during 2010-2016 remained at the same level of 2 times higher and indicated a lack of accessibility of pre-school education for rural children. At the same time, in 2016, the share of rural kindergartens in the region with all types of improvement was 71.5%, which is significantly lower than in the city (96.8%).

In the health sector, territorial disparities between the rural and urban population in their provision of medical institutions and qualified personnel also persist.

In this regard, the problem of social development and the provision of comfortable living and living conditions of the rural population, which is defined as the second important sub-goal of the development of the agro-industrial complex of the Voronezh region, deserves special attention.

5. 1. Meeting the needs of the rural population in well-equipped housing

One of the basic needs of the population is housing, the provision of which in rural areas has always been higher than in the city. However, most of the rural housing stock in need of major repairs. It should be noted that the proportion of dilapidated and emergency housing in the total volume of rural housing stock has decreased slightly, but it continues to remain quite high and exceeds the same indicator for the city [18].

In modern conditions, the implementation of state programs contributes to the growth of housing construction in rural municipalities; therefore, in the rural areas of the region there is a steady upward trend in the input of housing. At the same time, the volume of residential buildings commissioned between the city and the village differs by almost 2 times.

In this regard, it is necessary to pay special attention to the housing security of the rural population:



- The construction of a comfortable low-rise multi-apartment housing and the provision of residential premises under social employment contracts (mortgage housing loans, etc.);
- Assisting in the overhaul and reconstruction of emergency housing;
- Provision of housing for rural residents, especially for young families and qualified specialists under the age of 40 who need to improve their living conditions;
- Promoting the introduction of innovative technologies in the field of housing construction and the development of small forms of entrepreneurship, in particular, on the territory of large and suburban villages, the organization of the hotel business is possible, as well as where there is an active development of tourism activities.

To address such issues and develop housing services in rural areas, the population can be provided with housing on the basis of a social rental contract, and for self-construction or purchase of finished housing can be used organizational and credit-financial mechanisms, such as mortgage loans, housing loans, which would allow one to attract extrabudgetary sources for financing and to achieve favorable conditions for obtaining loans from banks [19, 23-25].

5. 2. Increasing the level of complex arrangement of rural settlements with social infrastructure facilities

Creating conditions for comfortable living in rural areas is impossible without the timely development of social infrastructure, a feature of which is the orientation towards the territorial consumer (rural residents of a district or a village). The territorial dispersion of rural infrastructure makes it difficult for them to be used effectively; therefore, the important conditions for the functioning of infrastructure are maximum accessibility and spatial-temporal proximity of its links to the places of permanent residence of the rural population.

Social infrastructure can be considered as an external socio-economic factor in improving the quality of life of rural residents, because its impact on village residents' life is manifested both in the distribution of available resources within the current system of minimum social guarantees and in providing employment and incomes of agricultural workers, which contributes to the growth of their well-being.

The main reasons for the lagging of the rural infrastructure from the urban infra-structure are the following:

- Low, compared with the city, the level of provision of villagers with non-productive capacities;
- Significant differences in the intensity of labor in the countryside during the year, leading to seasonal fluctuations in the demand for socially important objects;
- The infrastructure is represented by enterprises and institutions of the lower level, in connection with which the quality of service is significantly lower than in the city [20].

The provision of rural residents of the Voronezh region with rural social infrastructure facilities in comparison with the social norm-norms approved in the region revealed that the availability of schools and cultural centers in 2016, as well as catering and trade organizations, in general, complies with the established standards.

About 50% of the districts of the region have rural territories, which are fully provided with medical and obstetric centers and libraries; in 30% of the districts, the number of polyclinics and sports facilities in the village exceeds the required minimum.

Rural territories of all municipal districts are not equipped with kindergartens (in the range from 28.9 to 81.2%) and hospitals (19.6-41.8%). In this regard, we conclude that the social infrastructure in the rural areas of the region is represented by only a few components [21].

Therefore, the formation and development of social infrastructure at the expense of the following strategic directions (Table 4):

- Strengthening the financial base for the modernization of social infrastructure;



- Establishing and using municipal and private ownership of social infrastructure objects;
- Organizing social partnerships [22];
- Modernizing the social infrastructure of the development management system.

 Table 4. Strategic directions for the development of social infrastructure in the rural areas of the Voronezh region.

Development directions	Social infrastructure development activities						
Development directions	State	Region	Municipalities				
Strengthening the financial base for the modernization of social infrastructure	Improving the tax, financial, credit, and insurance policies, the system of intergovernmental equalization	Improving the availability of long-term financial resources for organizations that contain infrastructure on their balance sheets	Conducting fiscal and tax policies; diversification of the rural economy; attraction of extra- budgetary financial resources in infrastructure development projects				
The use of municipal and private ownership of social infrastructure	Establishing long-ter rights of ownership a disposal of municipa simplification of the allocation and purcha infrastructure project registration of land o	Re-profiling of municipal property for the needs of villagers in social services; assistance in obtaining land for individual projects					
Social partnership organization	Departmental coordination, information openness of authorities; weakening state paternalism; legal support of interaction of subjects	Inter-municipal interaction to coordinate infrastructure development projects; financial support of associations involved in infrastructure development	Combining the resources of local government, population and business, including through MCHP; organization of informal public associations to solve problems of complex infrastructure development				
Modernization social infrastructure development management systems	Improving the professional competence of responsible officials (updating knowledge, disseminating best practices for developing rural social infrastructure), their financial incentives						

The implementation of the designated directions for the development of rural social infrastructure will contributeto the creation of favorable living and socio-cultural living conditions for rural residents; increase the availability of social benefits and services; ensure the qualitative reproduction of the workforce and extending the period of its working capacity; lead to the growth of employment and incomes of workers in the agro-industrial complex; attract qualified personnel and secure them in rural areas; ensure the effectiveness of local government, resulting in improved quality of life for rural residents.

The practical significance of the obtained scientific research results is that the main strategic directions for the development of the agro-industrial complex of the region have already been adopted



when developing the draft "Strategy for Socio-Economic Development of the Voronezh Region for the Period up to 2035", and can also be used:

- The regional agricultural authorities in developing programs for the development of the agroindustrial complex and rural territories;
- By scientific institutions in economic studies of the problems of regional development of the agro-industrial complex and social infrastructure.

The proposed scientific developments can be used in the educational process when teaching courses in the following disciplines: "Agricultural and Food Markets", "Regional economy", "Sustainable development of rural areas," etc. [26].

6. Conclusion

The expediency of spatial development of rural areas due to the growth of agro-industrial production, contributing to the increase in incomes and employment of the rural population, has been research in this paper. However, in order to even out sectoral and structural differences, not only the further development of the agro-industrial complex is necessary, but also the complex arrangement of the population with housing and social infrastructure facilities.

To achieve the main strategic goal of the region's development, there are two main sub-goals: strengthening the competitive position of the region based on improving competitiveness and creating comfortable living conditions for the rural population, which are planned to be implemented based on the project-oriented management of the implementation of strategic directions for the development of the agro-industrial complex and rural areas.

Evaluation of the competitive position of the region and the results achieved, analysis of opportunities and risks allowed to justify the strategic priorities and directions of development of the agro-industrial complex and the ways to achieve them. The paper also focuses on the implementation of the main directions, including the formation and development of competitive industry clusters, the modernization of existing farms, pig farms, the creation of a commodity distribution network of the agri-food market, and export infrastructure. Also, this research strengthened the need for the formation of a selection and breeding base for plant growing and animal husbandry, along with the promotion of food security in the region.

The results of the analysis of the provision of the rural population with housing and social infrastructure showed a low level of livability, as they are not fully formed and cannot create comfortable living and living conditions in the countryside. Therefore, the proposed strategic directions for the development of social infrastructure are: strengthening the financial base for upgrading the social infrastructure, forming and using municipal and private ownership of social infrastructure facilities, organizing social partnership, improving the system for managing social infrastructure development.

References

- [1] Strategic directions for the development of agriculture in the Voronezh region: collective monography 2017
- [2] Schejtman A and Berdegue J A 2004 Rural Territorial Development. Documento 4
- [3] World economic forum 2013 *The Global Competitiveness Report 2013–2014* (http://www3.weforum.org/docs/WEF GlobalCompetitivenessReport 2013–14.pdf)
- [4] Reardon T 2007 Global Food Industry Consolidation and Rural Agroindustrialization in Developing Economies
- [5] Risin I E and Treshchevsky Yu I 2016 Regional Cluster Policy: Conceptual, Methodological and Instrumental Support
- [6] Li Y, Long H and Liu Y 2015 *Journal of Rural Studies* **38** pp 12-26



- [7] Van Vliet J, De Groot H L F, Rietveld P, Verburg P H 2015 Manifestations and underlying drivers of agricultural land and use change in Europe *Landscape and Urban Planing*
- [8] Slee B and Pinto-Correia T 2014 Understanding the diversity of European rural areas
- [9] Altukhov A I et al 2017 Development Strategy for the Agrarian Sphere of the Economy: Problems and Solutions: A Collective: monograph (Krasnodar, Russia: Prosveshcheniye-Yug) p 703
- [10] Zakshevsky V G, Charykova O G, Merenkova I N, Pechenevsky V F et al 2016 Methodological support for conducting scientific research on the economic problems of the development of the agro-industrial complex of Russia: monograph pp 108-128
- [11] Charykova O G 2017 FES: Finance. Economy. Strategy **10**(135) pp 27-32
- [12] Zakshevsky V G and Charykova O G 2017 Agricultural Economics 9 pp 2-9
- [13] Zakshevsky V G, Charykova O G and Kvasov A Yu 2017 AIC: Economics, Management 12 pp 13-23
- [14] Veselovsky M Y, Nuraliev S U, Fedotov A V, Sandu I S, Avarskiy N D 2015 Journal of Applied Economic Sciences 10(3) pp 417-425
- [15] Solvell O, Lindqvist G and Ketels C 2003 *The cluster initiative Greenbook* (Stockholm, Sweden: The Competitiveness Institute)
- [16] Khitskov I F and Petropavlovskiy V I 2017 AIC: Economics, Management 8 pp 75-86
- [17] Kostyaev A I, Shepeleva E A and Yurchenko T V 2018 Rural Development Models: Types, Construction Options
- [18] Soulard C T and Valette E 2017 *Toward sustainable relations between agriculture and the city* (https://www.researchgate.net/publication/321607505_Toward_sustainable_relations_betwe en_agriculture_and_the_city)
- [19] Bondarenko L V 2017 Agricultural and Food Policy of Russia 4 pp 13-18
- [20] Kaimakova M V 2007 Problems of the Modern Economy 2(22)
- [21] Merenkova I N and Kusmagambetova E S 2018 Formation and Development of Social Infrastructure in Rural Territories: monograph (Voronezh, Russia: Ritm) p 181
- [22] Zakshevsky V G, Merenkova I N and Pertsev V N 2015 AIC: Economics, Management 6 pp 69-75
- [23] Bogoviz A V, Semenova E I and Alekseev A N 2018 New challenges for regional economy at the modern stage Advances in Intelligent Systems and Computing 622 pp 574-580
- [24] Ragulina Y V, Bogoviz A V and Alekseev A N 2018 Modeling the management of innovational processes in regional economy Advances in Intelligent Systems and Computing 622 pp 568-573
- [25] Bogoviz A V, Osipov V S and Stroiteleva T G 2018 Leading tools of state regulation of regional economy Advances in Intelligent Systems and Computing 622 pp 562-567
- [26] Semenova E I and Domrachev A S 2014 Evaluation of social and economic efficiency in agriculture *Economics of Agriculture of Russia* **12** pp 63-68



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