

UDC: 338.43(470.1/.2)(045)

DOI: 10.37482/issn2221-2698.2021.45.23

The Food Security Doctrine: Regional Aspects *

© Natalya V. RODNINA, D. Sc. of Economic Sciences

E-mail: rodninanv@gmail.com

Arctic State Agrotechnological University, Yakutsk, Russia

Abstract. The article discusses issues of the state of the agro-industrial complex of the region in connection with the need to fulfill the targets approved in January 2020 by the new edition of the Food Security Doctrine of Russia. The purpose of the study is to identify the problems of the northern region and to develop proposals for changing the situation for the successful implementation of the Doctrine. The scientific problem discussed in the article relates to the determination of the methodological foundations of the most relevant areas of agrarian policy for the current state, ensuring the implementation of the Food Security Doctrine of Russia and increasing the level of self-sufficiency of the region. The author's research develops the theory of determining the socio-economic role of effective interaction between authorities of different levels, scientific justification of the prospects for the further development of the agro-industrial complex due to the transformation of the industry development management system, innovative approach to training personnel for the agricultural sector, and introduction of new technological solutions as highly relevant. It has been established that such factors as the lack of effective interaction between the state and municipal authorities, and also the lack of young qualified personnel, whose competence meets the modern requirements, have a negative impact on the economy of agricultural production and food self-sufficiency of the region as a whole. The article draws attention to the underestimated opportunities for improving the situation in the agro-industrial complex due to a change in the scheme of interaction between the state and municipal authorities during the implementation of the program-targeted method of regulation and strategic planning, as well as the creation of a scientific and educational complex in the region for the training of competitive specialists for the agro-industrial complex. In order to improve the situation, it is necessary to consolidate the formation of a regional agricultural system on the basis of a set of similar systems developed by the municipalities themselves, based on the relevant climatic conditions, financial, material and labor resources of these areas. Besides, it is necessary to start the training of personnel for the agroindustrial complex system from school, applying new educational standards, based on scientific developments.

Keywords: *food self-sufficiency, northern region, agro-industrial complex, municipality, training, project management, agrarian policy.*

Introduction

Food supply of remote areas is a complex multi-factorial problem concerning the availability of food, its accessibility to the local population and the ways of using this food in nutrition [1] and one of the main tasks of the national state policy. This is most relevant for the northern and arctic regions of the Russian Federation. At the same time, it must be considered from two perspectives. Firstly, it has a direct impact on the health of the population, and secondly, it affects the financial and economic indicators of the regional and municipal economy. It should be taken into account that the food system of the northern regions consists of the internal capabilities of agricultural production, the potential volume of food from hunting and fishing activities, and the import of food from other regions and countries [2]. Therefore, modern agrarian policy should create conditions for growth of agro-industrial production and thereby increase the level of regional food

* For citation: Rodnina N.V. Doctrine of Food Security: Regional Aspect. *Arktika i Sever* [Arctic and North], 2021, no. 45, pp. 23–35. DOI: 10.37482/issn2221-2698.2021.45.23

self-sufficiency. The task is not simple, since agriculture should also be preserved as a vital sector, which performs an important socio-economic function in the countryside, the basis of the traditional way of life of the rural population.

The food supply of territories in Russia, such as the Republic of Sakha (Yakutia), is a rather complex and multifactor problem and consists of internal agricultural production capabilities and food imports from other regions and even countries.

At the same time, food supply for the population has always been the primary state task, since it affects all aspects of the economy and social policy. Thus the issue of increasing the share of regional production in the food supply of the population remains relevant for a long time. This problem formed the basis of the new Food Security Doctrine of Russia, approved by the Decree of the President of the Russian Federation on January 21, 2020.

Despite the fact that there have been a lot of scientific works and publications on the implementation of modern national agrarian policy in recent years, they do not sufficiently reflect the objective nature of the development of the agrarian sphere and the ongoing transformation in rural areas [3].

Over many years of reform, the management structure of the agro-industrial complex in the Republic of Sakha (Yakutia) has changed; now municipal districts and urban okrugs have been vested with certain powers to support agricultural production. This is especially relevant for those areas, where large industrial projects that involve the inflow of additional population are already being implemented or are planned to be implemented.

In this regard, it is necessary to consider the following questions: “How effective is the new system of interaction between the state and the municipality, and what else needs to be done to achieve the objectives of the new Food Security Doctrine?”

Research methods

The study within the framework of the system approach to the analysis of socio-economic phenomena in the agrarian sector and development of rural areas included the review of individual indicators that characterize the trends of agro-industrial complex of the northern and arctic region on the example of the Republic of Sakha (Yakutia), as well as factors that affect the formation of effective functioning of agriculture and the entire agro-industrial complex.

The methodological basis was formed by the works of Russian and foreign scientists in the field of agriculture, regional economics, state and municipal administration.

In order to solve the tasks set in the study, the author used scientific methods, different at each stage. Thus, the theoretical base was formed by searching for scientific publications and other scientific literature in international and Russian databases. In addition, websites of scientific organizations dealing with food security and food self-sufficiency in the regions were reviewed.

The study has been conducted using statistical data from the Territorial Body of the Federal State Statistics Service, as well as information from state executive authorities of the Republic of Sakha (Yakutia).

However, it is necessary to note the complexity of assessing the effectiveness or efficiency of regional and / or municipal authorities, as well as the state agrarian policy as a whole. This is primarily due to the complexity of measuring this result, as well as the presence of both objective and subjective factors. Therefore, the assessment is made on the basis of comparing the actually operating mechanisms for regulating the industry and the final results obtained, including socio-economic parameters.

Research results and their analysis. Current state of the agro-industrial complex of the Republic of Sakha (Yakutia)

The food security of a country or a separate region is the main direction of agricultural policy; specific features of agricultural production are the explanation for the increased attention of most countries to the agricultural sector of the economy. Taking these circumstances into account, many market economies have developed multi-channel support systems for agriculture [4]. The agri-food sector is not self-sufficient and requires significant investments. However, there is simply no other alternative for food production in the modern economy [5]. At the macro level, agricultural production does not fit into the modern model of a market economy and can develop successfully only with state support and integration reforms [6].

Over the past two decades, the Republic of Sakha (Yakutia) has taken lots of measures to restore the volume of agricultural production, which allowed stabilizing it slightly by increasing production in household farms (Table 1).

Table 1

Indices of production of agricultural products by categories of farms, %

Year	Farms of all categories	Including		
		Agricultural enterprises	Peasant farm enterprises, IE	Population farms
2000	98.4	100.6	97.9	97.8
2005	103.6	106.6	118.6	97.9
2010	97.0	121.8	91.9	93.1
2015	97.2	91.0	99.0	98.8
2016	101.2	98.8	104.1	100.5
2017	103.1	103.4	104.3	102.2
2018	100.1	101.3	97.5	101.1
2019	101.7	102.1	97.5	104.1
2020	100.6	99.8	101.1	100.6

However, the agro-industrial complex retains the instability of the livestock of farm animals (Fig. 1), which negatively affects the level of food supply in Yakutia.

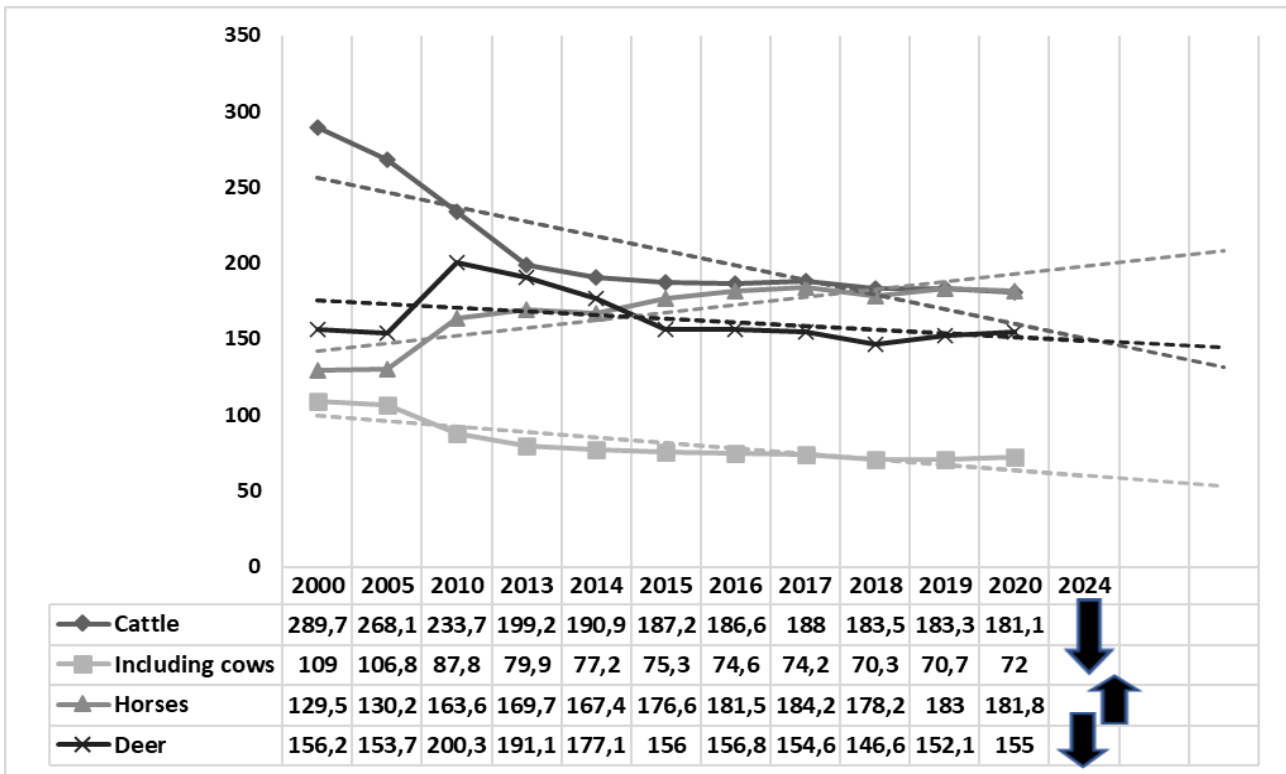


Fig. 1. Dynamics of change and forecast of the number of certain types of farm animals in the Republic of Sakha (Yakutia) at the end of the year, thousand heads.

The analysis of agricultural indicators reveals the shortcomings in forecasting and strategic planning of the agricultural sector development. Studies have shown that the main forecasting method in determining the strategy for the agricultural development in Yakutia is the extrapolation method, i.e. the transfer of past and present development trends to the future. The application of this method leads to errors and significant deviation from the forecast indicators. Thus, for the period from 2012 to 2020, the forecasting accuracy for meat production was 9.1%, and for milk — 5.4%.

In this regard, the urgent task of the industry is the need to build management work on a new methodological and procedural basis, ensuring an increased level of forecasting and analytical approach not only to determine the indicators of industry development, but also to identify its internal problems and work out effective management decisions.

The dynamics of the Republic's agriculture reflects the need to form new approaches to the development of the agroindustrial complex in order to increase the level of food security in the region. It is necessary to create such a mechanism of state regulation, which would make it possible to comprehensively solve the issues of increasing the volume of agricultural production with their direct connection with the development of rural areas [7].

Main directions of solving the problems of the agro-industrial complex of the Republic of Sakha (Yakutia)

Increasing the volume of agricultural production and, consequently, increasing the level of food self-sufficiency in the region should be achieved by changing the relationship between the regional and local authorities.

One of the mechanisms for managing the agro-industrial complex in many regions of the Russian Federation is the practice of developing the Agricultural Management System. A similar practice exists in Yakutia. In fact, this System should “legitimize” a set of measures aimed at organizing expanded reproduction by improving organizational, economic, technological, social and other mechanisms and measures. The basis of the System, of course, should be a section on the strategic development of agriculture and assessment of the possible results of its implementation. In fact, as experience shows, the system of farming in the region is currently limited to the analysis of the current state and the mechanisms used in the current period, not relying on the totality of farming systems in districts and urban districts.

At the same time, the development of industry is considered only from the position of state support and without sufficient analysis of the differences of agricultural producers by territorial location, technological level, availability of qualified personnel, especially in the subjects of small forms of entrepreneurship, etc.

To solve these problems in the republic, it is necessary to develop an effective management system, which would create conditions for increasing and expanding the production of competitive food products. In order to change the situation, the author proposes to modify the planning process for the development of the agro-industrial complex of the republic and, first of all, to assign the formation of agricultural systems to municipalities (urban districts), as shown in Fig. 2.

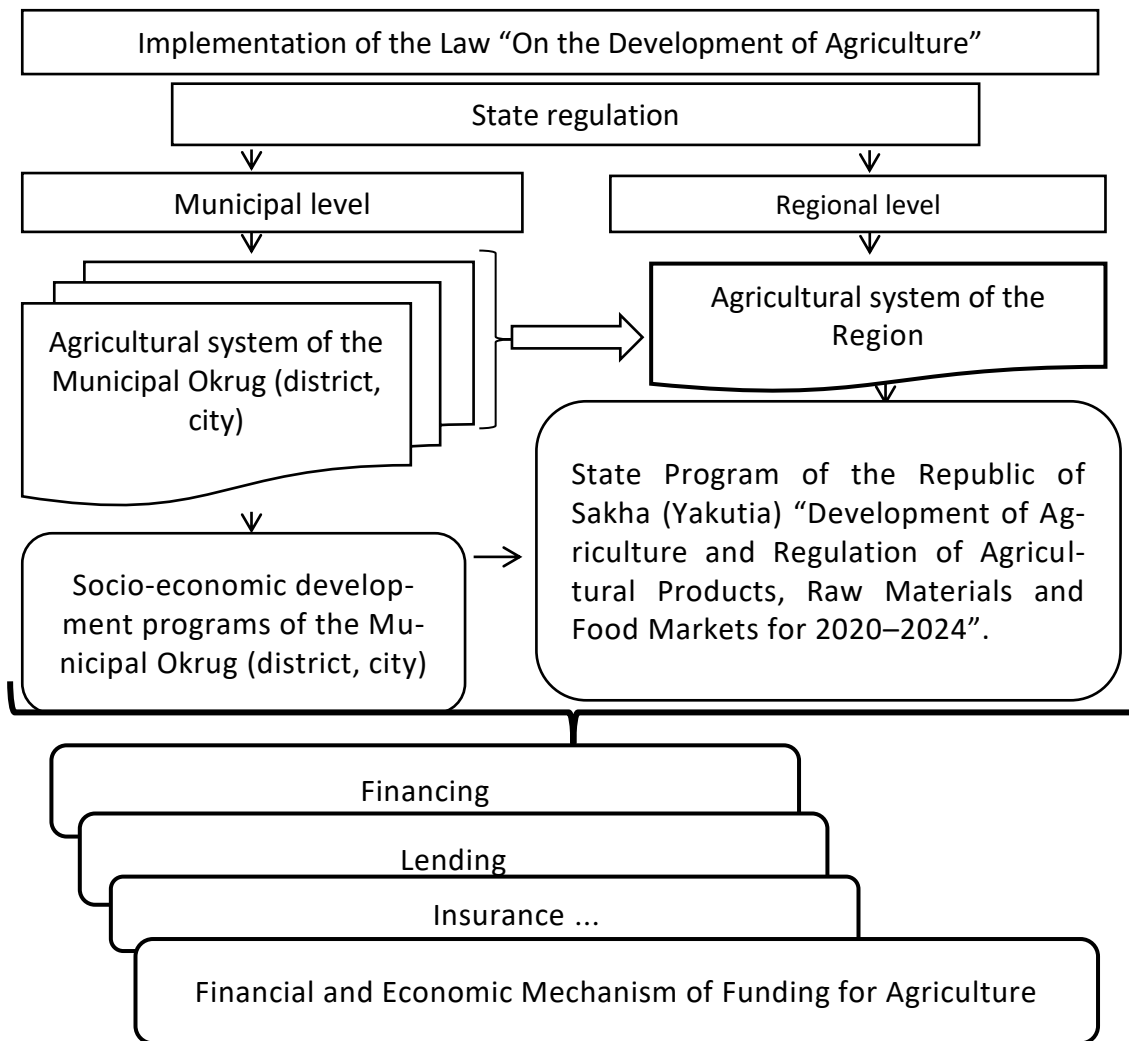


Fig. 2. Block diagram of interaction between state and municipal authorities in determining the ways of development of the agro-industrial complex of the region.

It is necessary to change the overall system of forecasting the development of the agro-industrial complex with a transition to the use of combined methods, including the "foresight" method.

At the same time, not only the subjects and municipalities, but also the federal center should be involved in solving the issues of food supply.

For example, it is advisable to determine the threshold values of the level of food self-sufficiency for subjects, located in the Arctic, and to provide the missing part of food (deficit) at the expense of federal compensation resources [8].

Agriculture is a vital sector both in the municipal economy and social life in rural areas [9]. One job in agriculture accounts for eight to ten jobs in other sectors of the economy, such as industry, transport, trade [10].

When planning the development of the agro-industrial complex, the territorial structure of the regional economy cannot be ignored, especially where the implementation of large industrial projects and possible population growth are expected. The points of industrial growth and the

creation of agro-industrial zones in these territories should be taken into account in municipal agricultural systems.

The Strategy for Sustainable Development of Rural Areas of the Russian Federation for the period up to 2030 defines the creation of favorable socio-economic conditions for rural areas to fulfill their national functions and to solve the tasks of territorial development [11]. Socio-economic policy for the development of rural areas should be considered as a sphere of mutual responsibility of the state, municipalities, science, business and civil society for ensuring a decent quality of life [12].

The difficult situation with the outflow of qualified personnel from rural areas is exacerbated by the reduction in the number of trained agriculture specialists. In 10 years (from 2009 to 2019), the output of specialists in the programs of higher education “Agriculture and Fisheries” decreased by almost 50% in the republic (table 2).

Table 2

Personnel training for 2009–2019

	2009	2010	2011	2012	2013	2014	2016	2017	2018	2019
Total	6688	6498	6856	6027	6935	7138	6432	6136	4323	4306
Areas of training: agriculture, forestry and fisheries	375	436	458	365	351	376	340	301	252	265

By Decree No. 2209 of August 16, 2013, the President of the Republic of Sakha (Yakutia) declared 2014–2018 as the Five-Year Plan for Sustainable Rural Development. In order to create comfortable living conditions in rural areas, increase the participation of citizens living in rural areas in the implementation of socially significant projects and form a positive attitude towards rural areas and rural lifestyles, it was determined that the implementation of effective and simplified mechanisms for the preparation and consolidation of qualified personnel in rural areas will be based on targeted training and distribution of graduates of professional educational organizations and educational institutions of higher education in specialties in demand in rural areas through the state order.

Meanwhile, the planned indicators for the employment of graduates are not fulfilled annually. Thus, in 2017, only 57% out of 200 planned agricultural specialists went to the villages.

Human resources have a significant impact on the development of rural areas and the agricultural sector. Knowledge has become a key economic and dominant resource, source of competitive advantage [13]. The modern agrarian reform shows that of all the directions of modernization of the agro-industrial complex, personnel is the most difficult. The problem of young professionals' retention in the village remains. The situation is unfavourable with the management of the industry. There is a lack of managers who meet the new requirements, i.e. who are able to develop and implement new technologies both in production and management of the industry.

The Strategy for Sustainable Development of Rural Areas of the Russian Federation for the period up to 2030 defines the task of creating favorable socio-economic conditions for rural areas to fulfill their national functions and solving the tasks of territorial development. Furthermore, foreign companies forecast that in the medium and long term the main focus of scientific and technological development will be on information, bio- and nanotechnology. Therefore university graduates should be equipped with the competencies necessary for the innovation economy without additional retraining. Deep integration of science, education and production is necessary [14].

The improvement of the personnel training system should begin with special education in schools, in specialized agricultural classes of rural schools.

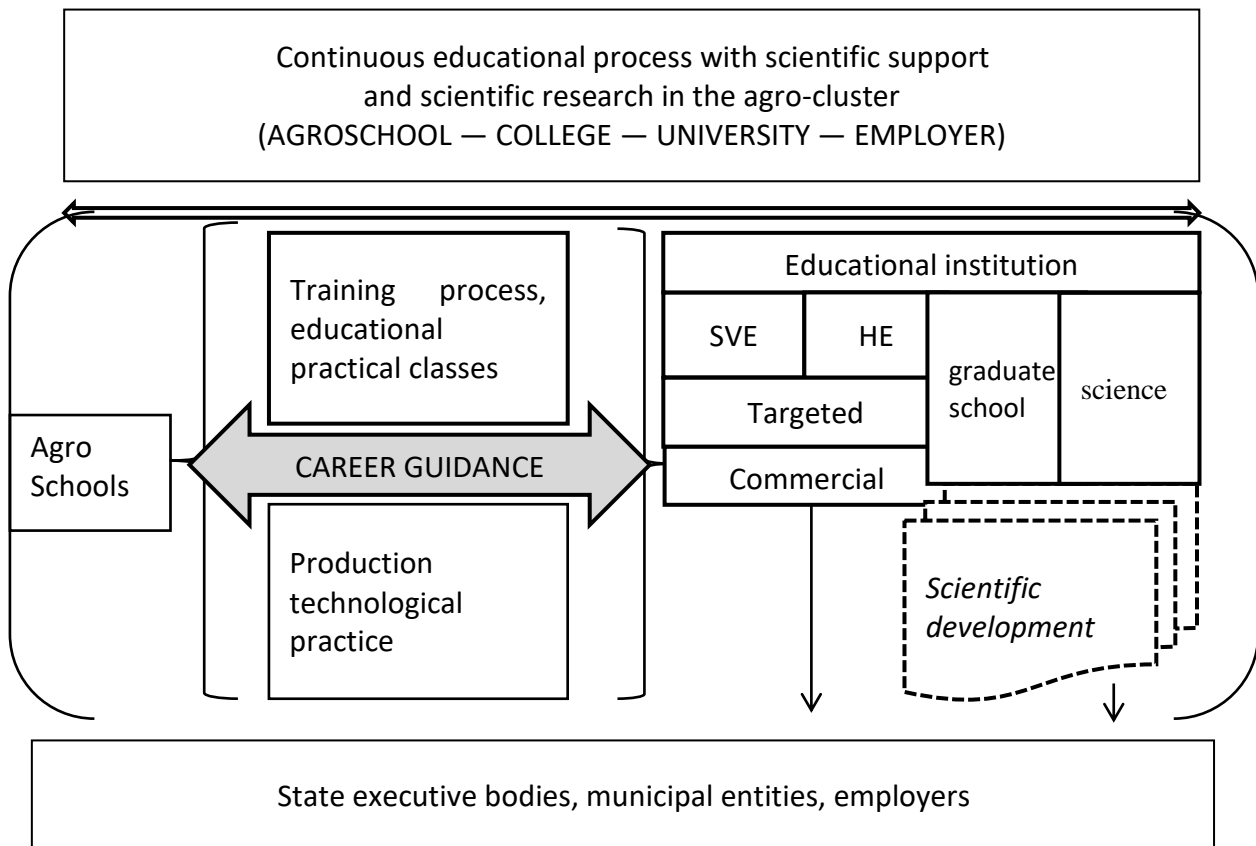


Fig. 3. Block diagram of the scientific and educational complex.

The personnel problem can be solved by creating a scientific and educational complex (SEC), which includes all stages of specialist training, starting from a school (agricultural school), ending with the beginning of work with a direct employer — an agricultural producer (Fig. 3). Such complex is a kind of cluster. S. Rosenfeld considered clustering as the basis of modern economic development [15].

Therefore, the strategic task of the SEC is to determine the formation of continuous education with a multi-stage system of training specialists. At the same time, its main advantage is the coordination and continuity of educational programs, their linkage with the real needs of production.

Employers, in turn, become direct customers for educational institutions and set requirements for the specialists they hire. Relations between the enterprises of the agro-industrial complex and the university will provide an opportunity for students to undergo practical training, internships, as well as to develop long-term plans or strategies for the development of an enterprise-employer as a graduate qualification work.

The problems and negative factors considered in the article are not exhaustive. The project management, as the practice and assessment of the President of Russia V.V. Putin showed, is characterized by the realization of the country's national interests. The food security doctrine is also a national project, and the application of effective methods and mechanisms for its implementation can improve the quality and standard of living of Russian citizens.

The principle of project management should be based on the inseparability of the development of rural areas and agriculture. Certainly, the construction of modern housing in rural areas, boiler houses, hospitals, schools, kindergartens and sport facilities should be the measures that provide the population with qualitative and safe food, and also the sustainable development of rural areas. All these measures should help to change the situation and bring the agro-industrial complex out of stagnation. At the same time, all projects should include an innovation component, aimed at genetics, breeding, and new biotechnologies.

Against the background of solving the problem of securing youth in the Far East, new incentives and measures are needed for the employment of local residents and young people at the enterprises of the agro-industrial complex. These should include higher and/or specialized secondary education from public funds, compensation for assignment to work in agricultural organizations similar to the "Zemskiy Doctor" and "Zemskiy Teacher" programs, discounted rates for bank loans and a number of others. These measures should also be included in the relevant projects.

In addition, it is necessary to strengthen the focus of fiscal policy on directing financial resources to achieve the goals defined in the Food Security Doctrine, which has become the main line of state agrarian policy. This is how it is defined in the Food Security Doctrine: "The executive authorities of the subjects of the Russian Federation, in cooperation with the federal executive authorities, implement a single state socio-economic policy in the field of ensuring food security, taking into account regional characteristics" ¹.

Conclusion

Changing the situation in the agro-industrial complex requires a transformation in its management system and, accordingly, the development of new models of interaction between the regional and municipal authorities.

¹ Ukaz Prezidenta Rossiyskoy Federatsii ot 21 yanvarya 2020 goda № 20 «Ob utverzhdenii Doktriny prodovol'stvennoy bezopasnosti Rossiyskoy Federatsii» [Decree of the President of the Russian Federation of January 21, 2020 No. 20 "On Approval of the Doctrine of Food Security of the Russian Federation"].

The results of the research have strengthened the author's position in recognizing the need for constructive interaction between the branches of government. The consistency of their positions in the development of the agro-industrial complex is the main condition for positive changes in the agrarian sector and in the development of rural areas. There must be balanced unity of views on the system of forecasting and strategic planning of agroindustrial complex development, as it is defined by Russian Food Security Doctrine.

The successful functioning of the regional agroindustrial complex largely depends on the proper identification of those factors and trends that hinder its effective development. In this connection the measures of regional and municipal programs, agricultural systems should be synchronized that will undoubtedly promote the agrarian sector of the republic to a higher level.

The study also showed the need to reform the agricultural education system and approaches to training personnel for the agro-industrial complex of the region and the country as a whole. There is a need for conceptual training of agrarians starting from school, including agro-schools. All levels of education should be included in a single complex according to the scheme “school — secondary vocational education — university — employer” and be aimed at a single result, i.e. to train a competitive specialist.

Summarizing the results of the conducted research, the author identifies the directions contributing to the initial stage of development of the agroindustrial complex and increasing the level of food self-sufficiency:

- strengthening the interaction of state-municipal partnership aimed at improving the efficiency of the agro-industrial complex, with scientific and methodological support of organizational and economic mechanisms of these relations;
- improvement of state management of the agroindustrial complex and transition to project management;
- regionalization of the state policy in the field of agro-education and its orientation to the specific needs of the regional agrarian sector and non-medium agricultural producers.

The results are expected to be applied in the interests of the Republic of Sakha (Yakutia) to improve the efficiency of agrarian sector management.

References

1. Godrich S.L. What are the Determinants of Food Security among Regional and Remote Western Australian Children? *Australian and New Zealand Journal of Public Health*, 2017, vol. 41, no. 2, pp. 172–177.
2. Armendariz V., Armenia S., Atzori A., Romano A. Analyzing Food Supply and Distribution Systems using complex systems methodologies. *Proceedings in system dynamics and innovation in food networks 2015*, pp. 36–58. DOI: 10.18461/pfsd.2015.1504
3. Altukhov A.I., Drokin V.V., Zhuravlev A.S. Prodovol'stvennaya bezopasnost' i importozameshchenie – osnovnye strategicheskie zadachi sovremennoy agrarnoy politiki [Food Security and Import Substitution are the Main Strategic Tasks of Modern Agrarian Policy]. *Ekonomika regiona* [Economy of Region], 2015, no. 3, pp. 256–266. DOI: 10.17059/2015-3-21

4. Bepakhotnyy G.V. Zadachi gosudarstvennogo planirovaniya APK i metody ikh resheniya [Problems of State Planning of Agrarian and Industrial Complex and Methods of Their Decision]. *Ekonomika sel'skogo khozyaystva Rossii* [Economics of Agriculture of Russia], 2015, no. 5, pp. 2–7.
5. Miloserdov V.V. Sistema upravleniya agropromyshlennym kompleksom [Control System of an Agro-Industrial Complex]. *Ekonomika sel'skogo khozyaystva Rossii* [Economics of Agriculture of Russia], 2015, no. 7, pp. 35–44.
6. Kerry K.L., Vernon E. A Review of Past Agribusiness Management Research. *Agribusiness*, 2010, no. 4, pp. 397–408.
7. Rodnina N.V. Gosudarstvennoe regulirovanie prodovol'stvennogo obespecheniya regionov Severa [The State Regular Food Supply of Northern Regions]. *Sovremennaya ekonomika: problemy i resheniya* [Modern Economics: Problems and Solutions], 2017, no. 9, pp. 104–113. DOI: 10.17308/meps.2017.9/1737
8. Rodnina N.V. Vnutrennyaya prodovol'stvennaya pomoshch' v Rossiyskoy Federatsii: problemy i resheniya [Domestic Food Aid in the Russian Federation: Problems and Solutions]. *Regional'naya ekonomika: teoriya i praktika* [Regional Economics: Theory and Practice], 2018, vol. 16, no. 3 (450), pp. 484–494. DOI: 10.24891/re.16.3.484
9. Rast D.V. Munitsipal'noe upravlenie razvitiem sel'skikh territoriy regiona [Municipal Management over the Development of Rural Regional Territories (Russia, Kemerovo)]. *Problemy sovremennoy ekonomiki* [Problems of Modern Economics], 2015, no. 1 (53), pp. 211–215.
10. Chupryakova A.G., Kosinsky P.D. Osobennosti ustoychivogo razvitiya sel'skikh poseleniy promyshlennogo regiona [Features of Sustainable Development of Rural Communities of the Industrial Region]. *Regional'naya ekonomika: teoriya i praktika* [Regional Economics: Theory and Practice], 2013, no. 23 (302), pp. 39–45.
11. Glazovskiy N.F., Vlasova T.K. *Ustoychivoe razvitie sel'skogo khozyaystva i sel'skikh territoriy: zarubezhnyy opyt i problemy Rossii* [Sustainable Development of Agriculture and Rural Areas: Foreign Experience and Problems of Russia]. Moscow, Tovarishchestvo nauchnykh izdaniy KMK Publ., 2005, 615 p. (In Russ.)
12. Kovalenko E.G. Problemy i mekhanizmy razvitiya sel'skikh territoriy [Problems and Mechanisms of Development of Rural Territories]. *Fundamental'nye issledovaniya* [The Fundamental Researches], 2012, no. 3–3, pp. 687–690.
13. Drucker P.F. *Managing in a Time of Great Change*. New York, Truman Talley Books Publ., 1995, 371 p.
14. Golubev A.V. *Osnovy innovatsionnogo razvitiya Rossiyskogo APK* [Fundamentals of Innovative Development of the Russian Agro-Industrial Complex]. Moscow, RGAU-MSKHA Publ., 2015, 374 p. (In Russ.)
15. Doeriger P., Terkla D. Business Strategy and Cross – Industry Clusters. *Economic Development Quarterly*, 1995, vol. 9, no. 3, pp. 225–237.

Received on May 17, 2021