

System of farmers' support and cluster approach to the development of agricultural cooperation in the Volgograd region

Mikhail M. Guzev
Volzhskiy Branch,
Volgograd State University,
Chair of Economics and Management
Volzhskiy, Russia
guzev@vgi.volsu.ru

Marina V. Ledeneva
Volzhskiy Branch,
Volgograd State University,
Chair of Economics and Management
Volzhskiy, Russia
ledeneva.mv@vgi.volsu.ru

Tatiana V. Korobkina
Volgograd State University,
Chair of State and Municipal Management,
Volgograd, Russia
korobtv@volsu.ru

Lydia V. Shamray – Kurbatova
Volgograd Institute of Business,
Chair of Economics and Management
Volgograd, Russia
shamraylv@yandex.ru

Natalia A. Mishura
Volzhskiy Branch,
Volgograd State University,
Chair of Economics and Management
Volzhskiy, Russia
mis.nata-volga@yandex.ru

Abstract — The authors identify the role of small and large businesses in the agriculture of the Russian Federation. Using as the example the Volgograd region the place and role of small firms in the agricultural production of the Volgograd region are characterized. The cluster analysis to the development of agricultural cooperation is studied. The analysis and assessment of the efficiency of institutes and measures of the government support of agricultural enterprises in the Volgograd region are carried out. The measures for the improvement of the system of governmental support of agricultural cooperation in the Volgograd region within the regional cluster policy are suggested.

Keywords — agriculture, agricultural firm, cluster approach, agricultural consumer cooperatives, Volgograd region, grants, subsidies.

I. INTRODUCTION

In contrast to other sectors of economy, the agricultural production does not get a significant economy from mass or large scale production. The negative relation between the size of the enterprise and output of production per unit of area in hand farming is widely recognized in the scientific literature [1]. The main reasons for that are as follows: 1) owners of family farms have a higher motivation; 2) unmanaged and unpredictable impact on nature of production hinders the

consolidation and centralization of managerial processes and makes reasonable the localized character and implementation of actions which is maximally free from formalities [2]. At the same time the owners of family farms have good knowledge of local soil and climatic conditions; 3) family farms have a higher flexibility in terms of use of excessive labour force outside the farm [3], [4]; 4) limited opportunities for the division of labour in agriculture, the necessity of the implementation of a small number of precisely consequent steps in agriculture does not contribute to the development of the economy according to the division of labour of hired workers [2]. It is economically more profitable to produce in farms niche products which are considerably more labour intensive and resource consuming and it is complicated to make it scaled.

In the modern world there exist two systems of integration in the agriculture: constructed from above or a contract one and constructed from below or a cooperative one. In the Russian Federation in contrast from many countries of the world a wide development have large agricultural firms or agro holdings which included the former kolkhozes. The factors of creation of agroholdings became the availability of hired agricultural labour, and also the availability of the

infrastructure built in the soviet era already and also aimed at large agricultural enterprises.

The agro holdings have a strong influence on rural territories of the Russian Federation. Thank to their activity the budget revenues into local budgets are growing, the cultivation of waste land restarts, the bred livestock farms and seed farm have been recreated. These large enterprises influence the crop productivity, the livestock productivity, the productivity of labour due to the use of highly efficient agricultural machines and progressive methods of work. On the other hand the agro holdings as a rule need fewer workers what does not contribute to the solution of unemployment problem in rural area. So, for instance in the municipal regions of the Republic of Tatarstan where 70-90% of the farmed milk, meat and grown crops account for the agricultural holdings, the employment in the agriculture reduced 2-3 times [5, p. 70]. Besides, the Russian agro holdings are not interested in the development of the local social sphere and in the cooperation with peasant and farm firms and also owners of private subsidiary plots. The latter situation is connected with the absence of trust between counterparties, low culture of contract relations and reduction of human capital quality in rural areas. It is impossible not to note frequent conflicts between the owners of land shares and large agro holdings which rent them, especially in the Southern regions of Russia.

The agricultural holdings closely cooperate with regional authorities and are the main recipients of governmental subsidies at the federal or regional levels within the program of import substitution in which the emphasis is placed on large agricultural organizations. This is explained by the serious character of the import substitution problem and short terms for its solution.

At the same time large agricultural holdings and farms should not be opposed, moreover other forms of firms should not be hurt or even eliminated as it has always been earlier in Russia. For an efficient coexistence a perspective approach is the clusterization of rural areas, encouragement of creation of agricultural clusters where large firms (agro holdings), agricultural cooperatives and peasant and farm firms cooperate and development is introduced. Hence the synergetic effect from the interrelated development of large, medium and small sized business can be achieved. This is the difference of the cluster cooperation from a widely spread simple rural cooperation. The farmers and large scale businesses are included into the clusters voluntarily on the basis of competitive advantages.

Thus, the necessity of support of farmers and development of cluster agricultural cooperation in the regions of the Russian Federation is determined by the disproportions in the distribution of governmental subsidies between large scale and small business types and also negative social aspects in the work of agro holdings, lack of integration, low competitiveness of farms.

The aim of the current research is the efficiency assessment and the efficiency of the system of farmers' support and development of cluster agricultural cooperation in the Volgograd region. The tasks of the research are: 1) characteristics of place and role of peasant and farm firms and

private subsidiary farms in the production of agricultural production in the Volgograd region; 2) analysis and assessment of efficiency institutes and measures of state support of peasant and farm firms in the Volgograd region in the sphere of increase of their competitiveness in cluster cooperation and other types of business; 3) development of measures for the improvement of the system of state support of peasant and farm firms in the Volgograd region.

II. MATERIALS AND METHODS (MODEL)

In the paper the methods of abstract and logical, subject and object, comparative, layer comparison, statistical analysis, geographic modeling were used. The authors studied the concepts and philosophical propositions published in the papers of domestic and foreign researchers in cluster problems and also the world experience of the integration in agriculture, development of farming and cluster formation.

The empirical basis of research were the statistical data of the Federal Service for State Statistics, Volgograd Branch of the Federal Service for State Statistics, Committee for Agriculture of the Volgograd region, relevant normative and legal acts of the Russian Federation and Volgograd region. When using the statistical data of the Federal Service of State Statistics, the authors identified the tendencies and problems in the development of small business types of the Volgograd region, their place in cluster development of rural areas, they analyzed measures of state support and estimated their efficiency was. All these facts allowed assessing the efficiency of farmers' support and the substantiated forecast of farms' development in the region on the basis of cluster approach to the development of agricultural cooperation.

III. RESULTS AND DISCUSSION

The Volgograd region historically had a highly developed agriculture and now it is one of the largest producers of agricultural production in the Russian Federation, specializing in crop production. The Volgograd region has 3,8% from the total crop acreage in Russia (10th rank among the regions of the Russian Federation). Besides starting from 2010 the tendency of growth of crop acreage which during 2010-2017 grew by 14,5% and made 3119,2 thousand hectares [7, p. 313] is observed.

According to the results of the agricultural census of 2016 in the Volgograd region there are 1,1 thousand agricultural organizations, 3,7 thousand peasant and farm firms, 1,2 thousand of sole proprietors (farmers). In comparison with 2006 the number of agricultural producers in the Volgograd region reduced. The number of agricultural firms decreased in the region by 44%, the number of peasant and farm firms and of the sole proprietors (farmers) reduced by 59%. However average indices characterizing the activity of farmers increased. The land area and arable land, poultry and livestock number in agricultural firms grew. In the agriculture 39,3 thousand people are employed. Among them 24,0 thousand people are employed in agricultural firms, 10,9 thousand people work in peasant and farm firms, 4,3 thousand people are hired by sole proprietors (farmers) [8, p. 301].

Small business firms in the Volgograd region account for 60% of gross production in the agriculture. It is worth mentioning the tendency of growth of agricultural production farmed by peasant and farm firms, sole proprietors and owners of private auxiliary plots. It is worth mentioning the tendency of growth of the share of agricultural production farmed by peasant and farm firms, sole proprietors (farmers) and owners of private auxiliary plots in the total volume of agricultural production and during the period 2015-2017 which grew by 3,9% (Figure 1).

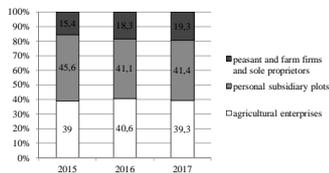


Fig. 1. Structure of agricultural production in the Volgograd region according to types of business firms, %

Source: made by the authors on the basis of [9, p. 180]

The share of small business firms in the use of cultivated land makes up 37,3% (Figure 2). The total land area which is accounted for peasant and farm firms and sole proprietors (farmers) makes up 617 hectares, the crop acreage makes up 395 hectares (1st rank in the Southern Federal District) [9, p. 15]. 2/3 of cultivated land of peasant and farm firms in the Volgograd region use their land for crops and green crops, 1/4 of land is used for technical cultures, 7,6% is accounted for green crops, cucurbits crops and forage crops. 80% of personal subsidiary plots are used for growing green crops, cucurbits crops and potatoes [8, p. 23]. The small business firms have an important role in the agriculture of the Volgograd region, and, specifically in animal husbandry. They account for 80% of cattle stock, cows, sheep and goats, about 50% of pig stock. And about 40% of poultry are farmed by the owners of personal subsidiary plots. Generally it is worth mentioning the domination of crop production of the Russian farmers what is also typical of the Volgograd region. This is explained by smaller risks and quick return on investment.

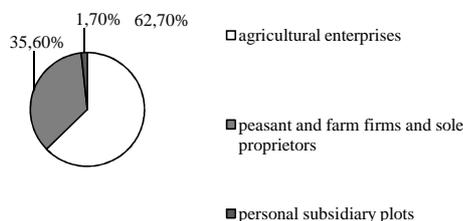


Fig. 2. Structure of cultivated land in the Volgograd region according to types of business firms, %

Source: made by the authors on the basis of [8, p. 11].

At the same time it is difficult enough to assess the contribution of farmers into the total volume of agricultural production. Thus, for instance if a peasant and farm firm (farm) is established as a limited partnership, so its production will be considered by the Federal Service for State Statistics as the production of an agricultural organization. Besides a part of owners of private subsidiary plots do business without registering as farmers. This means the underassessment of the contribution of farmers.

At the same time “hopelessness of a complicated social and economic situation, fear of bankruptcy, absence of a national agricultural system of cooperatives makes farmers join the integration communities which are presented in Russia mainly in the form of agricultural holdings” [10, p. 79]. But they still do not solve the problem of the coordination and defense of the interests of all economic agents in the agriculture. Thus, small business firms make a considerable contribution into the agrarian production of the Volgograd region. They keep to their social orientation by means of creation of jobs for people in rural areas and participation in various projects of the development of its rural settlement. However they are not included into the general cluster process in the agrarian sphere.

In 2014 the agriculture was included into the list of priority spheres of the long terms strategy of the Volgograd region development. The authorities of the Volgograd region focus on the following directions of the agricultural development of the Volgograd region: cattle breeding, vegetable farming, growth of irrigated land area, growth of volumes of agricultural production processing and renewal of machine and tractor fleet.

The Committee for Agriculture of the Volgograd region allocates a number of subsidies for agricultural producers including the “assistance per hectare” which is meant to reimburse to farmers a part of expenditures on the technological activities, preparation for seedtime and harvesting time; subsidies for reimbursement of a part of expenditures of farmers on the payment of insurance premiums according to the contract of agricultural insurance; on hydro and reclaiming measures; breeder’s stock keeping and others.

In 2018 1,6 thousand business firms in agriculture of the Volgograd region got assistance per hectare almost at the amount of 1 billion rubles. It is worth mentioning that during five years of this subsidy payment, less than 15% of peasant and farm firms (farmers) of the Russian Federation got this subsidy as in order to get this subsidy it is indispensable to fulfill a number of conditions, to present a lot of references and reports. For the development of land and reclamation measures more than 600 million rubles were allocated from the budget of the Volgograd region. Additionally 400 million rubles from the federal budget were allocated for the construction of two floating pumping stations in Bykovsky and Nikolayevsky subregions of the Volgograd region. The Volgograd region in 2018 became one of three regions leaders according to the speed of the subsidy use for agricultural machines purchase. During the latest five years 4310 pieces of equipment were bought with the help of the state support at

the amount of 14,5 billion rubles. The amount of the discount is 3,5 billion rubles [11]. In 2018 the farmers in the Volgograd region bought 500 pieces of agricultural equipment. 374 pieces were bought with the help of the subsidy to industrial enterprises at the amount of the discounts provided by them. Their total volume made up about 200 million rubles. In 2018 the agricultural producers got the opportunity of purchasing the equipment with the discount of 25%. The additional encouragement for them became the conclusion of the contract between Administration of the region and company "Rosselmash". Here the mechanisms of preferential loans and leasing are widely used.

The process of support of small business firms in the agriculture in the Volgograd region started in 2014. The Administration of the Volgograd region awards grants for the development of family livestock breeding farms, for the support of beginning farmers, for assistance to agricultural consumer cooperatives, purchasing and sales associations for the development of facilities.

In 2018 the total volume of government support of regional agriculture amounted for 4,19 billion rubles. 3,35 billion rubles were the federal funds, 0,843 billion rubles were the regional funds. At the same time the volume of government support in all spheres of small business firms made up 342,59 or 8,1% from the total volume of the government support within the government targeted program of the Volgograd region "Development of agriculture and regulation of the market for agriculture, raw materials and food products" for the period of 2014-2020. Its structure is presented in Figure 3.

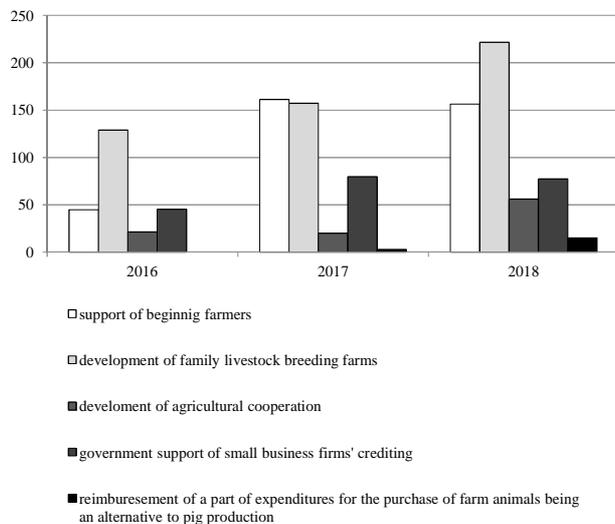


Fig. 3. Government support of small business firms in the Volgograd region, million rubles.

Source: made by the authors on the basis of [12].

During the period 2014-2018 270 farms and 89 livestock breeding farms were established. This is the result of a systematic government support. Its annual volume grew for the mentioned period 5,2 times and exceeded 775 million rubles. In 2017 the growth rates of livestock products in the Volgograd region made up 6,8% what is higher than the

average Russian ratio (2,8%) [9, p. 179]. In the result of activity in 2018 the cattle stock grew in the region by 4,5%, the number of cows grew by 3,8%. By the end of 2018 in comparison with 2017 the growth of cattle stock was 16,9 %, the growth of poultry was 64,7 % in the peasant and farm firms of the region [13]. The cultivated areas of peasant and farm firms grew in 2014-2017 from 1005,1 to 1136,0 thousand hectares [9, p. 182]. During the same period the cultivated areas of the owners of private subsidiary plots reduced from 56,2 to 50,9 thousand hectares. This fact allows supposing that some part of population having private subsidiary plots have got the status of a farmer in order to have the right for government support.

In 2014-2018 359 agricultural producers received the government support at the amount of 1 billion rubles what makes about 10% from their total number. The receivers of the grant became 69 beginning farmers who got 140,7 million rubles. 20 family livestock breeding farms received 133 million rubles. 4 cooperatives were awarded grants at the amount of 24 million rubles. The received funds were used for the construction and reconstruction of farms, purchase of livestock animals, agricultural equipment and also the connection of industrial sites and stocks to power and water supply. The interest from the part of farmers to granted funds and number of volunteers who would like to take part in assistance programs is growing from year to year. In many ways it takes place due to an active position of the officials responsible for agricultural development in the subregions of the Volgograd region.

It is worth mentioning the necessity of the government regulation of encouragement of joining the peasant and farm firms into cooperatives and then together with agricultural holdings into territorial clusters. The advantages of joining the farms into cooperatives is a joint use of agricultural equipment, joint sales of large batches of goods, more advantageous contracts with processing and commercial firms, the opportunity of getting the government support and so on. At the same time the advantage of agricultural clusters is a deeper integration of independent producers of various ownership types and business forms.

The main goal of cluster policy is the support and development of competitive environment. The competition always gives an objective information about advantages and opportunities of various economic agents, it reduces costs and increases the economic efficiency of their work, contributes to the innovative development and growth of the quality of produced goods. It increases the competitive ability of the regional economy as a whole and consequently its attractiveness for investors.

In the Volgograd region the indices of an agricultural cluster are manifested in different ways: 1) localization (geographic concentration of firms) in production, conservation, processing of crop production; 2) emerging cooperation; 3) relative competitiveness; 4) innovative orientation provided by the net of large educational organizations of various level and research organizations; 5) self-sufficiency (availability of consumers, means of

production, auxiliary production facilities). Such an agricultural cluster is an integrated system, located in the Volgograd region which includes: crop producers (agricultural holdings, agricultural production cooperatives, sole proprietors or farmers); processing enterprises of small and medium size; transport and logistics network, elevators; large and small trade firms; financial organizations; educational institutions and research institutes.

Nowadays in the region the production of crops, vegetables and forage is carried out in close cooperative relations with the producers of livestock production. All the industries have the leading enterprises, there are machine construction enterprises, processing enterprises and all the necessary infrastructural facilities and also mutually complementary, contiguous financial and service companies, educational, scientific and research centers, capacious domestic market. That's why according to its content the emerging cluster can be both crop growing and livestock breeding. This type of cluster has the following advantages: 1) relatively low competitiveness of crop production due to climatic conditions; 2) use of the produced grain mainly for forage (more than 60% of regional crops) and also its surplus in yielding year [14, p. 17]; 3) existing capacities for the livestock breeding expansion; 4) economic traditions of agricultural population of the region.

By October, 1 2018 in the Volgograd region 116 cooperatives function, they include 59 purchase and sales cooperatives, 14 processing, 43 credit cooperatives. Until 2016 the measures for the development of agricultural cooperatives were carried out by means of provision of grants to consumer cooperatives due to money of federal and regional budgets with an 40% input of the cooperative itself. Since 2016 an additional measure of support in the form of grant award for purchase and sales cooperatives due to funds of regional budget with a 10% input from the cooperative was introduced. 34 million rubles are allocated for the development of agricultural cooperation in 2018 in the Volgograd region.

In 2019 in the Volgograd region the creation of a new organization for support is expected. It will be the regional Fund for Agricultural Development which will allocate preferential loans for investment projects. In 2019 in the region the Regional project "Creation of Farmers' Support System and Agricultural Cooperation Development" starts. The total amount of financing amounts for more than 1 billion rubles. The goal of the project is the involvement of small and medium sized business firms into the agriculture in the Volgograd region. Their number will make no less than 3 thousand people. The goal will also include the establishment and support of small and medium sized business in the agriculture including peasant and farm firms and also agricultural consumer cooperatives. The regional project implies the additional new measures of farmers' support and agricultural cooperation: 1. Grant support of peasant (farm) firms, registered in the year of grant award (Agrostartup) including the variant of the creation of an indivisible cooperative fund. 2. Provision of subsidies to agricultural consumer cooperatives: a) subsidizing of 50 % for the

purchase of livestock animals and agricultural equipment; b) subsidizing of 15 % of expenditures for the sales of agricultural products purchased at the cooperative members. According to the calculations for 2019-2020 the support of small business firms will allow getting the annual growth of not less than of 10 % production volumes, create new jobs in rural areas [13]. Thus starting from 2019 besides financial measures for support some new measures of support in the form of a grant will appear. They all will allow creating in the region a sustainable system of farmers' support and development of agricultural cooperation.

IV. CONCLUSION

Thus, in the region the tendency of agricultural production is observed what is also typical for Russia and for the whole world. In the result of a system government support of agriculture in the Volgograd region new firms are established, the livestock of breeding animals is increasing, its productivity is growing, the volumes of production are increasing, the area for a stable forage farming is growing. Nevertheless it is worth mentioning an insignificant volume of government support for small business firms in the volume of support allocated for the development of the agriculture of the Volgograd region.

A more efficient use of funds in the agricultural sphere of the region is connected with the development of a crop growing and livestock farming cluster. The reasons for the development of such a cluster are as follows: 1) risky character and relatively low competitiveness of crop production in the Volgograd region (for instance, in comparison with the Krasnodar kray) due to climatic conditions; 2) excess of crops in yielding years and significant volumes of produced forage crops; 3) revival of livestock breeding in the latest years. The main direction of the cluster policy in the region is the support and development of competitive environment, creation of equal conditions for the competition. This means the necessity of construction of the system of relations between the authorities of the region and economic agents in the agricultural sphere (agro holdings, peasant and farm firms, agricultural cooperatives), coordination of efforts of the cluster participants and development of agricultural infrastructure.

Acknowledgment

The research is prepared within the scientific research project 18-410-340007 p_a supported by the Russian Federal Fund for Fundamental Research "Cluster approach to the development of rural territories of the region: mechanism of implementation and approval of results".

References

- [1] Eastwood, R., Lipton M., Newell A. Farm size. Handbook of agricultural economics. Edited by P.L. Pingali and R.E. Evenson. Amsterdam: Elsevier, 2010.
- [2] Rylko D. U nas preobladayut agrokholdingi, a na Zapade – semejnye fermi [The agro holdings dominate in our country, the family farms dominate in the West]. Available at: <http://lenagro.org/stati/1394-u-nas-preobladayut-agroxoldingi-a-na-zapade--semejnye-fermy.html> (date of access: 11.02.2019).

- [3] Allen D., Lueck D. The nature of the farm. *Journal of Law and Economics*. 1998. № 41. PP. 343-386.
- [4] Deininger, K. Byerlee D. Rising global interest in farmland. Can it yield sustainable and equitable benefits? World Bank. Washington DC, 2011. Available at: https://siteresources.worldbank.org/INTARD/Resources/ESW_Sept7_final_final.pdf (date of reference: 11.02.2019)
- [5] Nefedova T.G. Agropromyshlennaya kontsentratsiya v rossiiskikh regionakh [Agricultural concentration in the Russian regions]. *EKO*. 2014. № 4. C. 64-82.
- [6] Mitrofanova I.V., Obedkova L.V., Opeykina T.V., Prokopova T.V. Agropromyshlennyy kompleks Volgogradskoy oblasti: sovremennyye trendy, gosudarstvennoe regulirovanie, potentsial i perspektivy rosta [Agricultural complex of the Volgograd region: modern trends, state regulation and growth prospects]. *Economics: Yesterday, Today and Tomorrow*. 2017. Vol. 7. Is. 2B. PP. 299-313.
- [7] Regiony Rossii. Osnovnyye kharakteristiki sub"ektov RF. 2018. [Regions of Russia. Main characteristics of the regions of Russia 2018]. Statistical bulletin. Moscow: Rosstat Publ., 2018. 751 p.
- [8] Osnovnyye itogi Vserossiiskoy sel'skokhozyaystvennoy perepisi 2016 goda (v skhemakh i diagrammakh) [Main results of the All Russian agricultural census of year 2016. In pictures and diagrams]. Statistical Review. Territorial organ of the Federal Service for State Statistics in the Volgograd region: Volgogradstat Publ., 2018. 43 p.
- [9] Volgogradskaya oblast' v tsifrakh [Volgograd region in figures]. 2017: Short bulletin. Territorial organ of the Federal Service for State Statistics in the Volgograd region: Volgogradstat Publ., 2018. 374 p.
- [10] Pustuev A.L., Degtyareva T.Yu., Pustuev A.A. Problemy razvitiya territorial'no-klasternykh mul'tiplikatorov v agrarnoy sfere: teoretiko-metodologicheskie aspekt [Problems of development of territorial and cluster multipliers in agricultural sphere]. *Agrarnyy vestnik Urala [Agrarian Bulletin of the Ural]*. 2013. №5 (111). PP. 79-81.
- [11] Agrarii Volgogradskoy oblasti sekonomili 3,5 mlrd rub na pokupke sel'khoztekhniki [Agricultural workers of the Volgograd region saved 3,5 billion rubles at the purchase of the agricultural equipment]. Available at: <http://www.fagps.ru/news/agrarii-volgogradskoy-oblasti-sekonomili-35-mlrd/> (date of access: 11.02.2019 г.)
- [12] Otchety o khode realizatsii gosudarstvennoy programmy Volgogradskoy oblasti «Razvitie sel'skogo khozyaystva i regulirovanie rynkov sel'skokhozyaystvennoy produktsii i prodovol'stviya» [Reports on the implementation of the government program of the Volgograd region "Development of agriculture and regulation of the markets for agricultural production and food supplies]. *Komitet sel'skogo khozyaystva Volgogradskoy oblasti [Committee for Agriculture of the Volgograd region]*. Available at: <http://ksh.volgograd.ru/current-activity/reports/> (date of access: 11.02.2019)
- [13] Gospodderzhka fermerskikh khozyaystv Volgogradskoy oblasti sposobstvuet razvitiyu myasnogo zhivotnovodstva [Government support of farmers in the Volgograd region contributes to the development of beef cattle production]. *Komitet sel'skogo khozyaystva Volgogradskoy oblasti [Committee for Agriculture of the Volgograd region]*. Available at: <http://ksh.volgograd.ru/current-activity/cooperation/news/218106/> (date of access: 11.02.2019)
- [14] Osetrov D.V. Razvitie zernovogo proizvodstva na osnove klasterizatsii ego sub"ektov [Development of crop production on the basis of the clusterization of its regions]. Abstract of the thesis of the Candidate of Economic Sciences. Volgograd, 2011. P. 17.