

ASSESSMENT OF THE CONTRIBUTION OF THE INVESTMENT POTENTIAL TO INCREASING THE EFFICIENCY OF AGRICULTURAL PRODUCTION

Marianna VASILCHENKO, Elena DERUNOVA

Institute of Agrarian Problems of the Russian Academy of Sciences, 94, Moskovskaya St., 410012, Saratov, Russia, Phone: +78452263179, Fax: +78452264768, Mobile: +79172036930: +79873093797, Emails: mari-vasil4enko@yandex.ru, ea.derunova@yandex.ru

Corresponding author: ea.derunova@yandex.ru

Abstract

In the context of the transition to a new technological structure and the formation of an export-oriented economy, the achievement of sustainable agricultural development is inextricably linked with the search for new forms, methods, and mechanisms to stimulate the development of the investment potential of agricultural production. The study aims to assess the contribution of investment potential to improving the efficiency of agricultural production and to develop innovative policy measures to stimulate its development. The theoretical aspects of the development of investment potential have been developed. The role of foreign investment in agriculture in increasing the productivity of the industry and meeting the needs of the industry for various resources has been substantiated. The specificity of the provision of investment resources in agriculture has been studied. An empirical assessment of the multiplier effect of investments was carried out using a pool of indicators. Based on the proposed private indicators, an integral indicator for assessing the effectiveness of the investment potential of agricultural production was calculated. A typology of the constituent entities of the Russian Federation has been carried out on the contribution of investment potential to innovative development and growth of export potential; groups with a low, medium and high level of development are identified. The article proposes measures to stimulate innovative development based on expanding the forms of interaction and methods of investment policy, science, and agribusiness in the context of framework conditions, project, and institutional measures. The practical significance of the results of the study is to improve the methodology for assessing the level of development of investment potential and increase the efficiency of agricultural production based on improving government support measures at all stages of the innovation process.

Key words: investment potential, agricultural production, assessment methodology, typology of regions, government regulation

INTRODUCTION

In the context of the transition to a new technological order and the formation of an export-oriented economy, ensuring sustainable agricultural development is inextricably linked with the search for new forms, methods, and mechanisms to stimulate the development of the investment potential of agricultural production [24].

Over the past few years, the growth rate of agricultural production in Russia has significantly outpaced the growth rate for the economy as a whole. From 2014 to the present, there has been an increase in production volumes, the number of unprofitable farms has decreased, import substitution has been ensured in many sub-

sectors of agriculture, and a pronounced export orientation has been formed in several sub-sectors. In the context of the sanctions policy, as well as the risks of the COVID-19 pandemic, the threat to the country's food security has increased as a result of changes in the main directions of foreign trade policy [1]. In recent years, to achieve this goal, several legal and regulatory documents have been adopted: the Doctrine of Food Security ", the Federal Scientific and Technical Program for the Development of Agriculture for 2017-2025, the State Program of the Russian Federation" Scientific and Technological Development of the Russian Federation ", Passport National project "International cooperation and export" [18]. one of the components of which is the federal project

"Export of agricultural products", according to which it is planned to increase the export of agricultural products by 2024 two times compared to 2018. These documents reflect the priority areas development of the state agrarian policy, according to which targeted financial resources will be allocated to farmers.

Despite the formed favorable conditions for agriculture and other sectors of the agro-industrial complex, in general, the problems of technical support, the financial situation of agricultural producers, the introduction and use of innovations remain [5]. One of the most important constraining factors for the development of agriculture is the low level of investment potential development, including its innovative component [2].

The need to develop and improve the institution of the innovation system in the agro-industrial complex is predetermined by the tasks of creating, introducing, and disseminating scientific and technological achievements in the production process, which will make it possible to form a science-intensive and high-tech export-oriented agricultural sector [31].

The main institutional units of the innovation system of the agro-industrial complex should be innovation and technology centers, business incubators, technoparks, the functioning of which is aimed at the accelerated transfer of developments to production, the development of high-tech products [23].

Theoretical, methodological, and methodological problems of studying the investment process, increasing the efficiency of using investment resources, and assessing their contribution to the development of the economy at the micro, meso, and macro levels have been widely reflected in the works of domestic and foreign scientists. Various theoretical concepts of investment are presented in the works of representatives of Keynesian, neoclassical, and neoliberal directions of economic thought. The greatest contribution to the formation of investment theories was made by such foreign authors as V. Berens, L. J. Gitman, M. D. Jonk, J. M. Keynes, P. Masse, A. Marshall, P. Samuelson,

R. Harrod, P. Heine, R. Holt, J. Hicks, M. J. Schumpeter.

Methods for assessing the effectiveness of investments and the problems of increasing investment potential at the federal and regional levels are reflected in the works of such Russian scientists as R.Kh. Adukov, I. Volkov, A.G. Granberg, S. Yu. Glazyev, F. Ilyin, K. Kirov, N. Korda, V. Krutikov, E.V. Kuzmina, V.N. Livshits, I.V. Lipsitz, M.D. Mednikova, V.A. Perfilov, I. Risin, S.A. Smolyak, A.S. Sokolitsyn, G. Urbanskaya, and others.

At the same time, despite numerous publications on this topic, the problems of assessing the contribution of investments to increasing production efficiency have not been sufficiently developed; achieving a match between the level of investment security and the sustainability of economic development [7].

Such positions are shared by such foreign authors as Sarah K. [16].

The authors highlight the key role of investment in agriculture for economic growth, poverty reduction, and food security, highlighting the need to determine the optimal level of investment from various sources to achieve production goals. In furtherance of this provision, the representatives of FAO (United Nations Food and Agriculture Organization) note that investments in public goods (for example, agricultural research) have a higher return than subsidizing certain types of production costs. According to their recommendations, governments should invest in institution building and human development, which will help create an enabling environment for investment in agriculture [28].

The modern concept of science and technology policy, aimed at creating an export-oriented agricultural sector in the transition to the fourth industrial revolution, is based on an integrated approach to the development of the agricultural economy. The need to intensify the integration interaction between the subjects of the innovation process in the agro-industrial complex is sufficiently fully justified and disclosed in the theories of I. Schumpeter and M. Porter. In this regard,

the theory of the investment multiplier by J.M. Keynes, the theory of economic growth by R. Harrod-Domar, and the Solow theory continue to remain quite relevant, on the basis of which it is possible to determine the impact of investments in fixed assets on the development of industries of the agro-industrial complex.

Knowledge, innovation, and investment in human capital as building blocks of Paul Romer's theory of endogenous economic growth have become the most important factors of economic growth in the context of the spread of the digital economy. In these conditions, investments in education, research, and development create incentives for the introduction of innovations, and the development of new technologies largely depends on the conditions of the market. Thus, the priority of knowledge is preserved in both short-term and long-term economic development. This theoretical position of P. Romer has a significant difference from theories highlighting technological innovation as the main source of economic growth [20].

Thus, the level of provision with investment resources is not only the most important condition for economic growth and an increase in the level of competitiveness but also a dominant stimulus for activating the process of innovative structural transformation in the agro-industrial complex [9]. The most widespread theories of structural transformations should be considered the theory of dynamic development of E. Domar, J. Schumpeter's theory of structural changes, D. North's institutional theory of structural transformations, as well as the theory of "three-phase development" by H. Chenery, A. Straut. E. Domar's theory of dynamic development substantiates the need to import capital and create favorable conditions for its attraction about economically underdeveloped countries experiencing a shortage of real savings and financial resources. The theory of H. Chenery, A. Straut, called the "theory of three-phase development" of the economy of underdeveloped countries, connects the cause of structural transformation with the influence of numerous factors, and capital accumulation

is assessed as the most important factor in structural changes in the economy. "Three-phase development" assumes that the economy goes through the following stages of development: a period of maximum use of investments by the economy to equalize the average propensity to save, as well as the investment rate; a period of lack of investment resources, requiring capital inflows from outside; the period of economic growth due to import substitution and export growth, which directly determines the very process of structural transformation of the economy [3].

Thus, the structural restructuring of the economy is a consequence of the redistribution of investment resources. For the effective development of innovations, it is necessary to establish interconnections at the regional level within the framework of innovation and investment processes; a prerequisite for this is that investments cover the entire innovation chain. The optimal investment and innovation strategy should include measures aimed at increasing the rating of the region; successful implementation of innovation policy; structural shifts due to changes in the distribution of productive forces in the spatial projection [27]. Some Russian scientists substantiate the need to use the latest effective investment and innovation tools, models, and mechanisms aimed at increasing the competitiveness of the agricultural sector, as well as increasing the export potential. To resolve this issue, it is required to develop a targeted agrarian innovation policy, which should contain tasks and mechanisms that take into account previously set priorities, and the harmonization of innovation policy at the federal and regional levels will allow successfully implementing the tasks. An important role is assigned to the development of a mechanism of state support for innovative reproduction, aimed at smoothing technological differentiation as a result of a change in technological structures [19].

The above fully proves the need to improve investment policy, the main directions of which are measures to stimulate investment in priority sub-sectors of agriculture [17].

As a result of the development of the agrarian sector, it is necessary to significantly strengthen the material and technical base of agricultural producers, as well as to complete the technical re-equipment of the processing industry enterprises. The implementation of these tasks will require significant capital investments, which act as the main conditions for the reproduction process [29]. Investment potential is the most important condition for the country's economic development. The economic interests of the state are realized based on the availability of investment potential, an increase in the level of which in the agricultural sector provides a balanced investment activity that determines the dynamics of investment processes in agriculture. In the Russian Federation, the term "investment potential" at the legislative level was first reflected in the regulatory documents in 1999 governing the adoption of the Federal Law "On Investment Activity in the Russian Federation". The current Law contains the following definition: "Investment potential is the availability of opportunities that can be used to achieve specific goals, mainly the capabilities of the invested object, the conditions for long-term investment in a certain asset [10]. When characterizing the investment potential of an enterprise, including an agricultural one, most researchers and economists consider it comprehensively, as a mechanism that includes several potentials that make it possible to evaluate both individual and common elements. The constituent parts of the investment potential, as a rule, include financial, industrial, labor, land, and other potentials [21].

According to Valinurova L.S., Kazakov OV, the investment potential is a set of objective indicators, properties, means and opportunities that determine the potential purchasing power of investments, taking into account the interests of all participants involved in this process" [30].

According to IV Roisman, "The resource potential of agriculture is a set of objective natural and economic conditions that affect the course of the reproduction process in agriculture. It characterizes the possible

volume of agricultural production for a given quality of land, provision of production assets, as well as labor [22].

Gorlanov S.A., Shamshinurov M.O. note that "Resource potential is the potential of one resource since an increase in any element of the productive forces will lead to an increase in the value of its individual potential without changing the size of the total production potential with an excess of this element" [11]. According to Shevchenko D.K., Ashitko V.A. the investment potential of the enterprise is "The aggregate of organically balanced resources of the production sector that determine the possibilities of producing a certain volume of products" [26] According to V.G. Gusakov. investment potential is "The combination of resources and economic conditions that provide the formation of clearly defined opportunities for the production of an appropriate quantity and quality of products or services" [13].

MATERIALS AND METHODS

The purpose of this research is to assess the contribution of investment potential to improving the efficiency of agricultural production and to develop innovative policy measures to stimulate the development of investment potential in the agro-industrial complex.

The methodological basis of the study was the state legislative acts, decrees and decisions of the government, scientific works of domestic and foreign scientists - economists and agricultural specialists on the problem under study. In the course of the research, monographic, abstract-logical, analytical, economic-statistical, expert research methods were used. Information from Rosstat, the Higher School of Economics, the Ministry of Agriculture of the Russian Federation, and special reference literature were used as an information base for the study.

There are different approaches and methods for assessing the level of innovative activity that are used abroad. There are several methods among them: European Innovation Scoreboard, Technology Achievement Index, Innovation Capacity Index, World Innovation

Index Boston Consulting Group (GII BCG), World Innovative Index INSEAD (GII INSEAD), Global Innovation Factor Global Innovation Quotient).

A.B. Gusev proposed an approach, on the basis of which a methodology for assessing the level of innovative development of the constituent entities of the Russian Federation was developed [14]. With its help, the procedure for assigning a rating assessment of the competitiveness of Russian regions in the field of innovation is regulated.

The system for calculating the level of investment potential is a complex approach that requires the development of appropriate tools. Currently, there are various methodological approaches to assessing the investment potential of agricultural organizations. However, some scientists identify the most effective methods that allow assessing the investment potential of agriculture in a country or individual regions. In addition, there is a methodology based on mapping sources, which shows all the natural and climatic features of the region.

RESULTS AND DISCUSSIONS

The results of statistical studies and empirical calculations for a more in-depth study of investment activity in agriculture made it possible to assess the contribution of

investment potential to increasing the efficiency of agricultural production and substantiate a set of measures to stimulate innovative development based on expanding forms of interaction and methods of investment policy, science, and agribusiness [4].

According to the Institute for Statistical Studies and Economics of Knowledge of the National Research University Higher School of Economics, other studies, and Rosstat data for 2017, in Russia, the share of agricultural organizations that carry out technological innovations in crop and livestock production, in their total number was no more than 3.9% [15].

On the regional level, there is significant differentiation in investment and innovation development. To study the state of investment resources and investment potential, the Volga Federal District was chosen, consisting of 14 regions of the Russian Federation. The choice of this territorial object is explained by the significant contribution of the district to solving the problem of food security. Equally important is the factor of a sufficiently high provision of the district's agriculture with investments in fixed assets, which is most noticeable when comparing the distribution of investments in agriculture in the context of federal districts (Fig. 1).

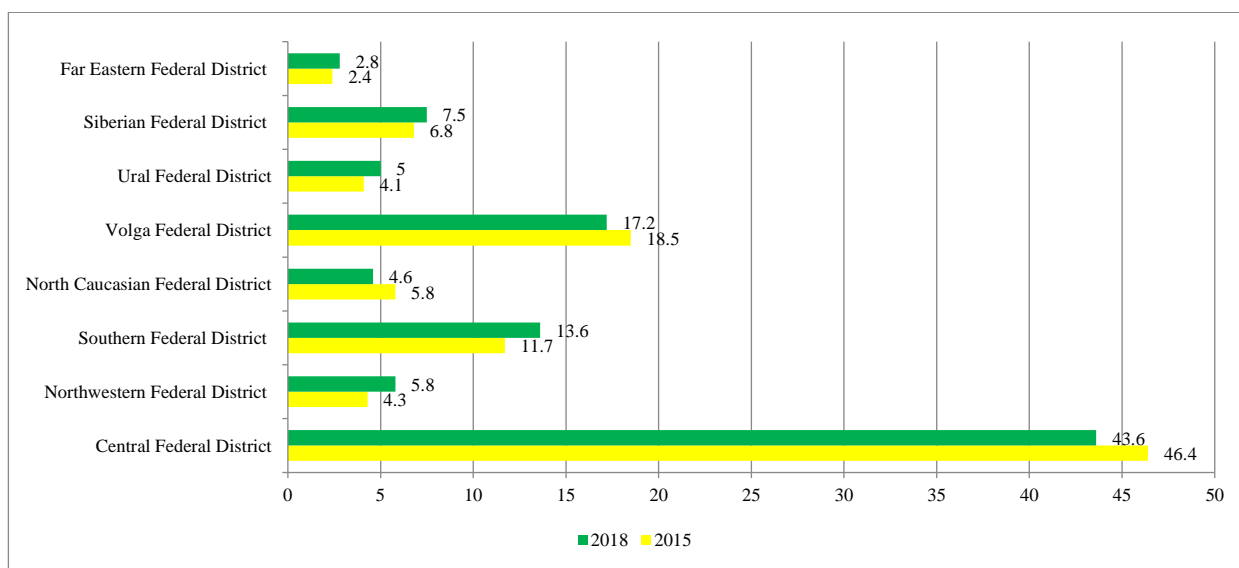


Fig. 1. Distribution of investments in fixed assets of agriculture by federal districts, in% of the all-Russian indicator
 Source: Own calculation.

Analysis of statistical data for 2015-2018 showed the presence of significant interregional differentiation in terms of the level of investment provision. Thus, for several years, the highest provision with investments has been observed in the Central Federal District. This district accounted for 43.6% of the total Russian investment in 2018. The Volga Federal District is in second

place (17%). For individual Russian regions, the share of investments in fixed assets in agriculture also has significant deviations from the average data for the federal district.

A more detailed analysis of the scale of investment in agriculture is presented by the region of the Volga Federal District in Table 1.

Table 1. Dynamics of investments in fixed assets of agriculture in the regions of the Volga Federal District (2008-2018)

Federal subject of Russian Federation	Investments in fixed assets by type of activity "agriculture, forestry, hunting, fishing and fish farming". mln. Rubles.		The volume of investments in fixed assets by type of activity "agriculture, forestry, hunting, fishing and fish farming" in 2018 relative to 2008. %
	2008	2018	
Bashkortostan republic	7,116	5,691.5	80.0
Mari El republic	1,332	2,328.1	174.8
Mordovia republic	4,972	7,351.0	147.8
Tatarstan republic	11,134	12,050.3	108.2
Udmurt republic	3,050	4,119.2	135.1
Chuvashia republic	1,119	1,265.4	113.1
Perm krai	3,557	2,939.8	82.6
Kirov oblast	3,639	6,594.9	181.2
Nizhegorodskaya oblast	5,458	8,176.9	149.8
Orenburg oblast	4,429	3,035.5	68.5
Penza oblast	4,104	16,351.1	402.8
Samara oblast	1,887	2,787.5	147.7
Saratov oblast	3,338	4,690.7	140.5
Ulyanovsk oblast	1,908	1,119.6	58.7

Source: Own calculation.

It follows from Table 1 that a significant increase in the volume of investments in the period under review occurred in the Republic of Mari-El (174.8%) and the Kirov region (181.2%). However, against the background of these regions, a sharp jump in investment in the analyzed period occurred in the Penza region (398.4%), which ranks first. In 2018 alone, 14 billion rubles were invested in the agro-industrial complex of the Penza region. investment.

In the Republic of Bashkortostan, Perm Territory, Orenburg, and Ulyanovsk Regions in 2008–2018, on the contrary, the volume of investments in agriculture decreased by 20–40%. At the same time, in these regions, the share of agriculture in the total volume of investments has decreased, which has resulted in structural changes in the economy.

To assess the contribution of investment to an

increase in gross output, the investment multiplier of Keynes's theory can be used. It is a coefficient reflecting the ratio of the increase in national income (gross output) to the increase in investment, which is a clear characteristic of economic growth.

In our study, to analyze the multiplier effect, we used the indicators of gross output and investment presented in Figure 2.

The ratio of the gross agricultural output and the volume of investments in fixed assets to a certain extent characterizes the multiplier effect. The highest return on investment was obtained in agriculture in the Saratov, Orenburg, and Samara regions (33.8 rubles, 38.1 rubles, and 41.5 rubles, respectively).

According to the rating of investment attractiveness of Russian regions for 2019, the Samara region had a high third level rating, and the Saratov region - an average third level

rating, which characterizes favorable conditions for production and investment.

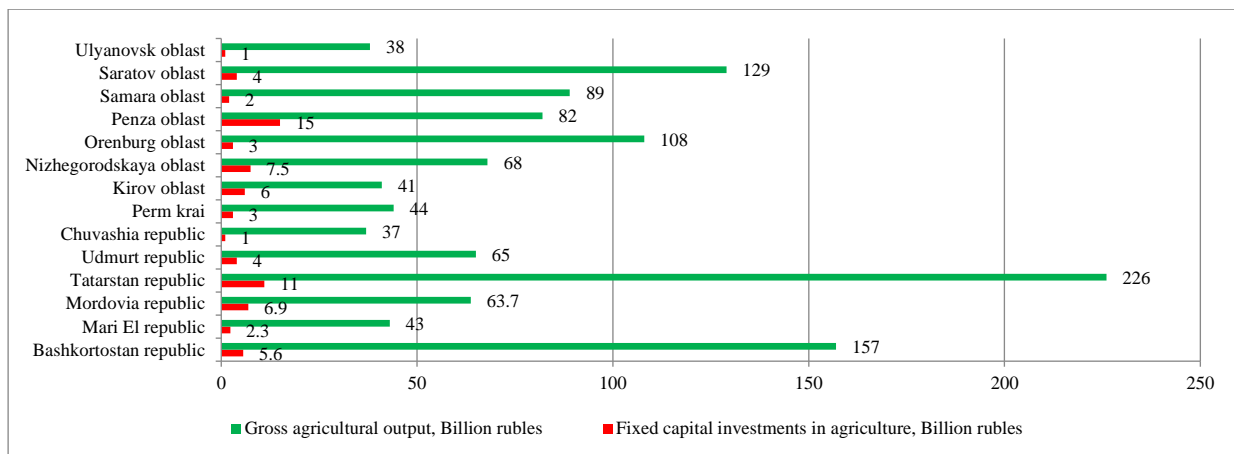


Fig. 2. The ratio between investments in fixed assets of agriculture and gross agricultural production in the regions of the Volga Federal District (2018)

Source: Own calculation.

According to analysts, shortly, the agricultural sector will retain its investment attractiveness, although some decrease in investment activity is allowed, including due to the deterioration of the economic situation in the country and the world due to the coronavirus pandemic. Based on the particular indicators proposed in this article, it is proposed to construct an integral indicator for assessing the effectiveness of the investment potential of agricultural production. Its construction is proposed to be presented as a set of specific weights of the following indicators: the proportion of budgetary funds in internal

research and development; the share of costs for technological innovation in the total volume of shipped goods; internal costs for research and development as a percentage of the gross regional product (GRP); the share of organizations that carried out marketing innovations in the total number of organizations surveyed; the share of organizations that carried out organizational innovations in the total number of organizations surveyed. Table 2 presents indicators for assessing the level of development of the investment potential of agricultural production in 2018.

Table 2. Integral indicator for assessing the level of development of Russia's investment potential and its components in 2019

	Russian Federation
Share of budgetary funds in internal research and development,%	78
Share of costs for technological innovations, in the total volume of goods shipped,%	74
Share of organizations that carried out marketing innovations in the total number of surveyed organizations,%	53
Internal costs for research and development as a percentage of GRP,%	8
Share of organizations implementing organizational innovations in the total number of surveyed organizations,%	94
Investment potential index	61.4

Source: Own calculation.

In the context of the selected private indicators of the development of investment potential, the following conclusions can be drawn. Relatively high values are typical for such indicators as: “Share of costs for technological innovation in the total volume

of goods shipped; “The proportion of organizations implementing organizational innovations in the total number of surveyed organizations”; Share of budgetary funds in internal research and development (Fig. 3).

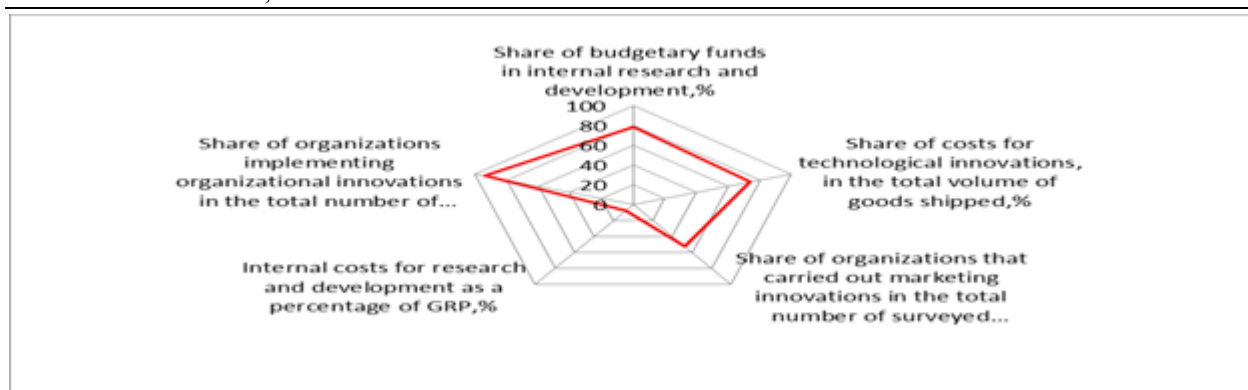


Fig. 3. The ratio of private indicators of the development of the investment potential of Russia's agricultural potential in 2019 (%)

Source: Own calculation.

The following indicators have medium and low values: "The proportion of organizations that carried out marketing innovations in the total number of surveyed organizations"; "Internal costs for research and development

as a percentage of GRP." In the context of regions, typology was also carried out [6] by the level of investment potential development as shown in Table 3.

Table 3. Results on the typology of the constituent entities of the Russian Federation according to the level of investment potential development

	Development level		
	High	Middle	Low
Integral indicator of investment potential	Bryansk Region Yaroslavl Region Republic of Karelia Vologda Region Murmansk Region Republic of Kalmykia Republic of Crimea Volgograd Region Republic of Ingushetia Kabardino-Balkarian Republic Karachayevo-Circassian Republic Republic of North Ossetia – Alania Chechen Republic Republic of Mordovia Tyumen Region Altai Territory Republic of Tuva Republic of Khakassia Novosibirsk Region Republic of Buryatia Republic of Sakha (Yakutia) Kamchatka Territory Magadan Region Sakhalin Region Jewish Autonomous Region	Vladimir Region Ivanovo Region Kaluga Region Kostroma Region Lipetsk Region Moscow Region Tambov Region Tula Region Arkhangelsk Region Kaliningrad Region Leningrad Region Novgorod Region Republic of Adygeya Astrakhan Region Republic of Daghestan Stavropol Territory Republic of Mari El Nizhny Novgorod Region Saratov Region Kurgan Region Tomsk Region Trans-Baikal Territory Primorye Territory Khabarovsk Territory	Belgorod Region Voronezh Region Kursk Region Orel Region Ryazan Region Smolensk Region Tver Region Komi Republic Pskov Region Krasnodar Territory Rostov Region Republic of Bashkortostan Republic of Tatarstan Udmurtian Republic Chuvash Republic Perm Territory Kirov Region Orenburg Region Penza Region Samara Region Ulyanovsk Region Sverdlovsk Region Chelyabinsk Region Republic of Altai Krasnoyarsk Territory Irkutsk Region Omsk Region Amur Region

Source: Own calculation.

The weakness of the state investment policy in agriculture is evidenced by the pronounced differentiation of the constituent entities of the Russian Federation by the level of its development. The reasons for such interregional differentiation may be such factors as a low level of resource provision; insufficient funding for research and development; the imperfection of state policy in the distribution of budgetary funds for innovative activities, which does not take into account the level of investment attractiveness of the region.

The article proposes measures to stimulate innovative development based on the expansion of forms of interaction and methods of investment policy, science, and agribusiness. In the direction of "science" support in the form of creating a framework, conditions consist in the allocation of grants for training, the expansion of research grants by the industry specifics. In agribusiness, the forms of support in the form of creating a framework for functioning are patenting, lending, grants, digitalization support, the development of venture investment, tax incentives, and the development of employee competencies. In terms of measures to integrate the interaction of science and industry, it is necessary to support professional communities and clusters, create virtual innovation networks, and develop international cooperation.

In terms of design measures for scientific organizations, it is necessary to intensify contract research and targeted programs. In terms of project measures, agribusiness needs to implement project financing mechanisms and technological programs. The symbiosis of science and agribusiness in the form of project measures is possible in the form of such tools for stimulating innovative development as project financing, the development of cooperation funds, and joint research.

As institutional measures in the direction of "science", it is advisable to provide basic institutional funding for scientific organizations by the needs of the economy and the development of scientific infrastructure. Institutional measures in agribusiness are joint research projects,

development of support institutions for technological and innovative start-ups, and stimulation of innovative consulting. As institutional measures of interaction between science and agribusiness, it is necessary to create institutions for the transfer of knowledge and technology, scientific and technological parks, regional centers of competence, and the application of the principles of public-private partnership [12].

It is also advisable to differentiate the presented measures to stimulate innovation policy depending on the stages of the innovation process. At the same time, it is important to choose the optimal form of interaction, taking into account the expansion of the information space, focusing on the benefits of network cooperation, and facilitating the search for partners. After the creation of these structures, the functions of the state are to ensure its openness to new participants based on the concept of open innovation and exclude the interference of market regulation methods [8].

The proposed toolkit will make it possible to create a favorable investment climate in agriculture at the regional level by attracting financial resources to the economy of the territories, to ensure the activation of both investment and innovation activities, including the use of modern digital technologies. The development of the market for advanced scientific and technological achievements will make it possible to identify the actual needs of the agricultural sectors of the Russian regions for specific innovations to achieve indicators of sustainable socio-economic development.

CONCLUSIONS

Investment potential is the most important condition for the country's economic development. The economic interests of the state are realized based on the availability of investment potential, an increase in the level of which in the agricultural sector provides a balanced investment activity that determines the dynamics of investment processes in agriculture. In the context of the transition to a new technological structure and the formation

of an export-oriented economy, the achievement of sustainable agricultural development is inextricably linked with the search for new forms, methods, and mechanisms to stimulate the development of the investment potential of agricultural production [25]. In this work, theoretical aspects of the development of investment potential are developed based on the synthesis of the concepts of innovative development, the knowledge economy, as well as forms, methods, and principles of investment. The analysis of positive foreign experience is carried out and the role of foreign investments in agriculture in increasing the productivity of the industry and meeting the needs of the industry in various resources is substantiated. It has been proved that in the process of deciding on foreign investment in agriculture, especially in developing countries, one should take into account the ratio of positive and negative effects of investment; the state of the investment environment; investment attractiveness of the business. The main determining factor is the presence of positive externalities of investment, therefore, about developing countries, it is recommended to relax international rules and increase foreign investment, even if there is a low investment attractiveness. The specificity of the provision of investment resources in agriculture has been studied using the example of the Volga Federal District. An empirical assessment of the multiplier effect of investments was carried out using a pool of indicators. Based on the proposed private indicators, an integral indicator for assessing the effectiveness of the investment potential of agricultural production was calculated. In the context of the selected private indicators of the development of scientific and intellectual potential, the following conclusions can be drawn. Relatively high values are typical for such indicators as "Share of costs for technological innovation in the total volume of goods shipped; "The proportion of organizations implementing organizational innovations in the total number of surveyed organizations"; "Share of budgetary funds in internal research and development." The following indicators have medium and low

values: "The proportion of organizations that carried out marketing innovations in the total number of surveyed organizations"; "Internal costs for research and development as a percentage of GRP." A typology of the constituent entities of the Russian Federation is carried out according to the contribution of investment potential to innovative development and the growth of export potential, based on which it is possible to monitor the process of innovative structural transformation in the agro-industrial complex, groups with a low, medium and high level of development are distinguished. The article proposes measures to stimulate innovative development based on expanding the forms of interaction and methods of investment policy, science, and agribusiness in the context of framework conditions, project, and institutional measures. The implementation of these measures will make it possible to create a favorable investment climate in agriculture at the regional level by attracting financial resources to the economy of the territories, to ensure the activation of both investment and innovation activities, including with the use of modern digital technologies. The practical significance of the results of the study is to improve the methodology for assessing the level of development of investment potential and increase the efficiency of agricultural production based on improving government support measures at all stages of the innovation process.

ACKNOWLEDGEMENTS

The reported study was funded by the Russian Foundation for Basic Research according to the research project №20-010-00979 A «Influence of investment resources of regional agricultural systems on increasing export potential in the conditions of innovative structural transformation».

REFERENCES

- [1]Altukhov, A.I., Bogoviz, A.V., Kuznetsov, I.M., 2019, Creation of an information system – a necessary condition of rational organization of agricultural

- production, *Advances in Intelligent Systems and Computing*, Vol. 726, pp. 800-809.
- [2] Andryushchenko, S.A., Vasilchenko, M.Ya., Derunova, E.A., Rubtsova, V.N., Sharikova, I.N., 2018, Modeling of Structural and Institutional Factors of Development in Regions Unfavorable for Agriculture. *The Journal of Social Sciences Research*, Vol. 3: 40-43.
- [3] Chenery, H. B., 1975, The structuralist approach to development policy. *American Association Papers and Proceedings*. Vol.65: 310–316.
- [4] Derunova, E., Semenov, A., Balash, O., Firsova, A., 2016, The Mechanisms of Formation of Demand in the High-Tech Products Market. *International Journal of Economics and Financial Issues*, Vol. 6(1) : 96-102.
- [5] Derunova, E., Andryushenko, S., Gerchikova, E., Firsova, A., Derunov, V., 2018, Monitoring of innovative activities effectiveness in agriculture. *Scientific Papers. Series Management, Economic Engineering in Agriculture and Rural Development*, Vol. 18(3): 89-100.
- [6] Derunova, E., Kireeva, N., Pruschak, O., 2019, Typology of regions according to the level of food security: methodological approaches and solutions. *Scientific Papers Series Management, Economic Engineering in Agriculture and Rural Development*, Vol. 19 (1): 135-146.
- [7] Derunova, E.A., Kireeva, N. A., Prushchak, O. V., 2019, Inclusive development of the agri-food system as a driver for sustainable growth in the region's economy. *Scientific Papers Series Management, Economic Engineering in Agriculture and Rural Development*, Vol.19 (3):165-174.
- [8] Derunova, E.A., Ustinova, N.V., Derunov, V.A., Semenov, A.S., 2016, Modeling of diversification of market as a basis for sustainable economic growth. *Economic and Social Changes: Facts, Trends, Forecast*, Vol. 6: 91-109.
- [9] Derunova, E.A., Firsova, A.A., Vavilina, A.V., Semenov, A.S., 2014, The study of the dynamics of innovative development of economy on the endogenous growth through multi-sector extension of the solow model. *Biosciences Biotechnology Research Asia*, Vol 11(3) : 1581–1589.
- [10] Federal Law "On Investment Activities in the Russian Federation in the Form of Capital Investments" dated 02.25.1999, No. 39FZ. http://www.consultant.ru/document/cons_doc_LAW_22142/, Accessed on January 12, 2020.
- [11] Gorlanov, S.A., Medelyaeva, Z.P., Malitskaya, V.B., Chirkova, M.B., Kostyukova E.I., 2019, Content analysis the term "effectiveness" and the concepts of its quantitative characteristics, *Indo American Journal of Pharmaceutical Sciences*, Vol. 6 (3): pp. 5293-5298.
- [12] Guinet, J., Meissner, D., 2012, Open Innovations: Effects for Corporate Strategies, Public Policy, and International Spillover of Research and Development. *Foresight*, Vol. 1: 26-36.
- [13] Gusakov, V.G., 2012, Issues of market development of agribusiness: selected works: Vol. 2., Minsk: Belaruskaya Navuka.
- [14] Gusev, A. B., 2013, Strategy of economic development of regions of Russia. Systemic crisis and a new economic environment. *Economy of region*, Vol. 4 (36): 220-235.
- [15] Innovation Indicators: 2019, Stat. Sat./Gokhberg, L.M., Ditkovsky, K.A., Kuznetsova, I.A. et al., Nat. issled. University Higher School of Economics. M.: NRU HSE, 376 p.
- [16] Lowder, S. K., Brian, C., Skoet, J., 2012, Who invests in agriculture and how much? An empirical review of the relative size of various investments in agriculture in low- and middle-income countries. *ESA Working paper*, Vol. 12 (9).December.
- [17] Paptsov, A.G., Nechaev, V.I., Mikhailushkin, P.V., 2019, Towards to a single innovation space on the agrarian sector of the member states of the Eurasian economic union: a case study. *Entrepreneurship and sustainability issues*. Vol. 7 (1): 637-648.
- [18] Passport of the Federal project «Export of agricultural products "(UTV. minutes of the meeting of the project Committee of the national project "international cooperation and export" dated December 14, 2018 # 5) // <http://mcx.ru/upload/iblock/013/013f266cee8d39bce5ca867381ff0da1.pdf>, Accessed on February 27, 2020,
- [19] Popescu, A., 2018, Main aspects regarding the contribution of domestic trade to the development of Romania's economy in the period 2008-2017. *Scientific Papers Series Management, Economic Engineering in Agriculture and Rural Development*, Vol. 18(4): 250-259.
- [20] Popescu, A., Dinu T., Stoian E., 2019, Changes, trends and relationships between average income and consumption expenditures per household in Romania in the period 2007-2017. *Scientific Papers Series Management, Economic Engineering in Agriculture and Rural Development* Vol. 19 (2): 364-375.
- [21] Popescu, A., Dinu, T., Stoian, E., 2019, Efficiency of the agricultural land use in the European Union, *Scientific Papers Series Management, Economic Engineering in Agriculture and Rural Development*, Vol. 19(3): 475-486.
- [22] Roizman, I.I., 2017, Modern and perspective typology of the investment climate of the Russian regions. *Investments in Russia*, Vol. 3: 59.
- [23] Sandu, I.S., Glagolev, S.N., Doshanova, A.I., Troshin, A.S., Lomachenko, S.N., 2015, Formation features of higher school innovation model in modern conditions. *International Business Management*. Vol. 9(6): 1102-1107.
- [24] Sandu, I.S., Veselovsky, M.Y., Semyonova, E.I., Fedotov, A.V., Doshchanova, A.I., 2015, Methodological aspects of social and economic efficiency of the regional activities. *Journal of Advanced Research in Law and Economics*, Vol. 6 (3): 650-659.
- [25] Shabanov, V. L., Vasilchenko, M. Ya., Derunova, E.A., Potapov, A.P., 2021, Formation of an Export-Oriented Agricultural Economy and Regional Open Innovations. *J. Open Innov. Technol. Mark. Complex*, 7, Vol. 1: 32.

<https://doi.org/10.3390/joitmc7010032>, Accessed on January 18, 2020.

[26]Shevchenko, D.K., Ashitko, V.A., 2016, Assessing the flexibility of an enterprise when adapting it to innovative updating. *Economics and Entrepreneurship*, Vol. 3-2(68): 867-870.

[27]Stroeveva, O. A., 2010, Investment and innovation strategy of transition of the regional economic system to the mode of sustainable economic growth. *Vestnik Orelgiet*, Vol. 1(11): 101-106.

[28]The state of food and agriculture: Investing in agriculture for a better future United Nations Food and Agriculture Organization, Rome (2012), <http://www.fao.org/docrep/017/i3028e/i3028e.pdf>, Accessed on January 19, 2020.

[29]Trukhachev, V.I. , Sklyarov, I.Y., Sklyarova, Y.M. Volkogonova, A.V., Mazloev, V.Z., 2018, Features of investment activity in agriculture in the south of russia and ways of its activation. *Montenegrin Journal of Economics*, Vol. 14 (1):171-184.

[30]Valinurova, L.S., Kazakova O.B., 2017, Investing: theory and practice: a textbook'. Moscow: KNORUS.

[31]Vasilchenko, M. Ya., Sandu, I., 2020, Innovative-investment development of agriculture in the conditions of formation of the export-oriented economic sector: System approach. *Scientific Papers Series Management Economic Engineering in Agriculture and Rural Development*, Vol.20: 599–612.