Advances in Economics, Business and Management Research, volume 147
Proceedings of the International Conference on Policies and Economics Measures for Agricultural Development (AgroDevEco 2020)

Scientific and Technological Development of Agrarian Sphere of Agricultural Industry as a Condition of Sustainable Development of Rural Areas

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***Abstract* — The article provides a retrospective analysis of the state and development of rural areas in Smolensk region identifies trends and evaluates the results of the regional administration of rural policies. The necessity for successful scientific and technological advancement of agricultural production for rural development is discussed. The current state of the rural social welfare should be considered unsatisfactory, not conducive to the importation and consolidation of labour force. In recent years, in rural areas there has been a significant increase in housing construction, however, the level of housing comfort is significantly inferior to urban one. Further development of rural areas is possible only with the effective management of agricultural production. Sustainable development of rural territories in modern economic conditions requires significant financial resources, while regional and local authorities do not have them. In these conditions, it is advisable to use foreign experience in the development of rural territories. The article gives a critical assessment of the Integrated Rural Development Program adopted this year, and directions for improving it are noted.**

Keywords — rural areas, rural settlements, social infrastructure.

I. INTRODUCTION

Almost all targeted state programs in the agricultural sector of Russia are aimed at eliminating the systemic crisis in the countryside, which is manifested in the fact that the modern Russian peasantry (over 37 million people, or more than 25 % of the country's population) has unfavorable social and economic conditions for living and working which is the main reason for the migration people from rural areas. Given that rural areas with a low standard of living in Russia occupy the bulk of the country's territory, the problem can not be considered as sector-specific and local.Years of economic reforms have shown that market-based management mechanisms contribute to the progressive development of agriculture. However, at the same time, they had a negative impact on the development of rural territories. During the post-reform period, the rural population of Russia decreased by 1.5 million, or 3 %, mainly due to the northern regions of the country, though the population increased in the southern regions [3]. As a result, the proportion of the rural population during this period decreased by 0.8 percentage points. Changes have also occurred in the age structure of the rural population: the proportion of the working age population increased from 51 to 53.5 %, population which is older thanworking age persons – from 22 to 26 %, and the proportion of the population younger than workingage persons decreased from 27 to 20.5 %.As a result, the dependency ratios decreased from 0.940 to 0.864, i.e. the relative number of dependents decreased, but the pension burdenratios increased from 0.428 to 0.488. This indicates a deterioration in demographic proportions, and, consequently, a complication of pension scheme [3].

The decrease in the rural population is not so tragic; the condition of rural areas and the living conditions of the rural population have deteriorated much more. Rural areas have been stagnating for many years, and in principle,the need for the rural population and rural territories for the further development of Russiacan be sought. Domestic scientists consider the rural population as a special layer of the social and national structure and believe that without the rural population there will be no Russia [4]. Without the sustainable development of rural areas, it is impossible to develop and improve the efficiency of agriculture. In turn, it is agricultural producers that primarily create the conditions and provideimpetus to the development of rural areas.

II. DISCUSSION AND THE RESULTS

Rural territories are being formed and developed, primarily in the regions. The development of regional agribusiness is impossible in isolation from the development of rural areas. In turn, rural areas successfully develop only through effective agricultural organizations. In agriculture, each large organization performs a "village-forming" function. The Smolensk region has historically been an agricultural region in which at the beginning of the last century the rural population was 91.5 % (82.2 % on average in the Russian Federation), and by 2018 it fell to 28.2 % (on average in the Russian Federation – 25.6 %) [2]. The territorial distribution of the region between the two largest cities – Moscow and St. Petersburg – significantly contributed to the migration of the rural population. A particularly intensiveout-migration from the rural areas was noted in the post-reform period, when there was actual destruction of large agricultural organizations, which to a large extent created the basis for conducting personal subsidiary plots (fodder, the importation of equipment for processing household plots, etc.). During the post-reform period, the rural population of the Smolensk region decreased by 18 % (on average in the Russian Federation – by 3.8 %). This decrease is due not only to internal and external migration but also to the natural decline in the rural population, which increased during the post-reform period from 7.8 to 11.6 ppm. The situation in the countryside required government measures, and three main documents were adopted that determined the state policy for rural development in Russia: "The Concept of Sustainable Development of Rural Areas of the Russian Federation for the period until 2020", adopted on November 30, 2010; federal target program "Sustainable Development of Rural Areas for 2014–2017 and for the period until 2020", adopted on July 15, 2013; "The Strategy for Sustainable Development of Rural Areas of the Russian Federation for the period until 2030", adopted on 02.02.2015. The Smolensk Oblast Administration developed measures and determined the procedure for financing the implementation of these programs in the region.

To increase the attractiveness of life in rural areas, labor in agriculture should become highly intellectual, therefore, in the near future, the priority direction of the agricultural sector of the agro-industrial complex is its scientific and technological development, which will ensure the country a stable place in the world market of agricultural raw materials. Research of Russian scientists shows that young people express a desire to work in rural areas using new technologies [5]. At the same time, scientific and technological development means the transition to highly productive, environmentally friendly, resource-saving agricultural production, rational and effective means of chemical and biological protection of plants and farm animals, waste storage and efficient processing of agricultural raw materials, production of safe, high-quality products for healthy nutrition of the population. In addition, scientific and technological development will contribute to the accelerated replacement of imports of agricultural products, raw materials and food, agricultural machinery and equipment, plant and animal protection products and biostimulants [6].

In the Smolensk region, agriculture and processing industry as sectors that determine the agro-industrial complex are sectors of the economy that identify resources, which priority development set the region's position in the domestic market of raw materials, food products, sales and production of equipment for the production and processing of agricultural products, taking into account the scope of creation agricultural resources. The share of agriculture in the gross product of the Smolensk region is 6 %.

Since 2017, the regional administration has recognized the technical, scientific and technological modernization of one of the main tasks in the development of the agro-industrial complex of the region, which is developing in the following areas (Table 1). In 2018, agricultural enterprises purchased more than 370 units of machinery and equipment allocated for upgrading agricultural machinery.

TABLE I. MAIN DIRECTIONS OF SCIENTIFIC AND TECHNOLOGICAL DEVELOPMENT OF THE AGRO-INDUSTRIAL COMPLEX OF THE SMOLENSK REGION IN 2018

Directions of development	**Sources of financing**	**Level of funding, in 2018, million rubles**	**The growth rate over the previous year, %**
Upgrading agricultural machinery	Public investment	714	105.0
Conservation and expansion of agricultural land	Federal budget	100	+ 22 times
Technical audit of technological processes in dairy cattle breeding	Regional budget	80 % of the total cost	+ 2 times
Reproduction of cattle in all categories of farms	Regional budget	50	125.0
Creation and development of agricultural sectors lost during the reform process.	Regional budget	1122	x
Development of the material and technical base of processing enterprises	Federal and regional budgets	500	x
Production of a new generation of highly efficient equipment for growing and processing crop products	Regional budget	300	x
Implementation and development of IT-technologies	Regional budget	150	125.0
Staffing of the agro-industrial complex with highly qualified specialists	Regional budget	15	110.0

In addition, 8 preferential microloans worth more than 14 million rubles were obtained to implement the entrepreneurship support program. As a result, the renewal coefficient of agricultural machinery in agricultural enterprises amounted to 4–5 % for all types of machines (1–2 % in previous years), and for combine harvesters – 10 %.

To protect and expand agricultural land in 2017, a regional department of the unified federal land information system was created in the region, which will allow tracking the status, condition and actual use of lands, the state of grass vegetation on agricultural lands. In 2018, with the funds of the regional budget in fifteen agricultural enterprises, cultural and technical

events were held on an area of more than 9,000 hectares, which is 22 times more than in the previous year.

Carrying out a technical audit of technological processes in dairy cattle breeding will allow identifying and eliminating existing shortcomings in the maintenance and milking animals, improving their conditions, increasing labour productivity, quality and profitability of milk. Since 2019, agricultural producers receive compensation from the regional budget in the amount of 80 % of the cost of the audit. Since 2017, at the expense of the regional budget, a herd reproduction program has been carried out in personal subsidiary plots through free artificial insemination of cows. About 1,500 cows were vaccinated in 2017–2018. In addition, subsidies are provided from the regional budget to struggle against the cattle leukemia virus for maintaining the number of cows, resulting in decreasing the incidence of leukemia in 2012–2019 from 25 to 1 % of the livestock.

In the agricultural sector of the region, commodity industries lost during the reforms are being revived. In 2017-2019 in two districts, an industrial gardening project is being implemented with the cultivation, storage, processing of apples and other fruit and berry raw materials, during which an apple orchard was established using intensive technology on an area of 212 hectares. Also, in the Gagarinsky district, a rabbit breeding center is being created, in which 23 thousand head of parental animals will be reproduced annually. Poultry farming is expanding: an investment project to increase egg production at Smetanino Poultry Factory LLC has been completed, which has allowed producing more than 270 million eggs and fully ensuring a rational level of egg consumption in the region. A new industry for the region is fish farming, which development began in 2017 with the opening of a complex for sturgeon farmingwith production of black caviar. As a part of the 500 million rubles investment project, breeding of sturgeon fish (sterlet and sturgeon) and production of black caviar are planned.

In the processing industry, the leading role belongs to meat processing, milk processing and enterprises for the production of ready-made feeds: they account for more than 70 % of the production costs of the processing industry. In the current year, the milk plant “Rosa” was put into operation with a capacity of 50 tons of dairy products per day.

For the development of flax growing in the region, the administration raised funds from a French holding company for the production of a new generation of highly efficient equipment for growing and processing flax. In addition, an investment project for the construction of a flax mill for the production of flax yarn is being implemented in a regional industrial park.

A new direction in the development of the leading countries of the world is the digital economy, resulting in introduction of information technologies into various sectors of the economy [3]. Since 2018, in the Smolensk region, unmanned aerial vehicles have been used for digital aerial photography, by which the state of more than 3.3 thousand hectares of flax crops is monitored. In dairy cattle breeding, automated herd management systems have been introduced: milking parlors, robotic farms, automated control systems, computer programs for collecting and analyzing information on the status of animals. While the first robotic farm in the region for 410 cows has been created in one of the districts, this direction will develop in the future.

New technologies for the production of agricultural products require highly qualified personnel. To this end,an agro-industrial educational cluster has been created in the region, which includes executive branch, educational institutions, and agricultural organizations. Within the cluster, an interaction was organized with Smolensk Agricultural Academyand with secondary educational institutions that train tractor drivers, agricultural machinery operators, agronomists, economists,and accountants. Young specialists who have decided to engage in agricultural production receive monthly supplementary payments to wages, as well as a lump-sum payment from the regional budget at the rate of 210 thousand rubles. Despite the low level of benefits in 2018, 39 young professionals arrived to work in the countryside. It is necessary to develop measures to consolidate and attract young qualified personnel to agricultural organizations. First of all, thesearecomfortable living arrangements, developed infrastructure and decent wages.

The determining factors in the scientific and technological development of the agro-industrial complex of the Smolensk region are budgetary and private investments. In 2018, 1.1 billion rubles were allocated for the development of agriculture, 75 % of which are from the federal budget. In addition, in 2018, agro-industrial organizations in the region took out loans – total amount of 5.4 billion rubles – mainly at a reduced rate. Thanks to the constructive policy of the regional administration in business, the share of private investment in agriculture and the food industry over the five years increased from 8.7 to 11.3 %.

The modern administration strategy in scientific and technical development of the agro-industrial complex provides positive dynamics of the main effective indicators, although there is a decrease in some indicators (Table 2). In 2018, in all categories of farms, gross agricultural output amounted to 23.6 billion rubles, which is 106 % in a comparable estimate to the level of 2017. The main producers of agricultural products are agricultural organizations, which account for 62 % of production. In 2018, they sold products for about 10 billion rubles. A positive result is the profitability of the agricultural industry over the past five years, the average level of profitability was 14.5 %.

In 2018, agricultural organizations in the region received net profit of 1.2 billion rubles from the sales of products, which is 26 % higher than the level of previous year. This is the highest growth rate of net profit over the past three years. Due to its own production, the region provided itself with eggs – by 125 %, meat – by 106 %, milk – by 72 %, potatoes – by 80 % and vegetables – by 55 %.

Out of 87 thousand tons of livestock and poultry meat produced in the region, pork meat production amounted to 65 thousand tons (75 % of the total production), which is 20 % higher than in 2017.

The growth in the production of these products allowed in 2018 to ensure a rational norm of meat consumption per

capita. In 2018, the productivity of dairy cows in agricultural organizations increased to 46.6 centners,which is 10 % higher than the level of 2017. In 2018, more than 279 million eggs were produced in all categories of farms, which is 39 % higher than the level of 2017, and the increase was provided by large producers while reducing egg production in peasant and individual farms.

TABLE II. TRENDS IN THE OUTCOME INDICATORS OF THE AGRO-INDUSTRIAL COMPLEX OF THE SMOLENSK REGION

Indicators	2012	2018	Growth rate by 2012, %
The cost of gross output at current prices, billion rubles	18.5	23.6	127.6
Index of production of the previous year, %	100.6	106.5	+5.9 p. p.
The percentage of agricultural enterprises in gross output, %	44.3	62.0	+17.7 p. p.
Level of self-sufficiency, %: eggs	105.3	125.0	+19.1 p. p.
meat	64.9	106.0	+41.1 p. p.
milk	104.5	72.0	-32.5 p. p.
potatoes	112.7	80.0	-32.7 p. p.
vegetables	79.3	55.0	-24.3 p. p.
Agricultural production, thousand tons: grain	217.0	278,0	128.1
potatoes	219.6	129.0	58.7
vegetables	75.4	52.0	68.9
rape seed	-	13.0	x
flax fiber	2,1	3.3	157.1
milk	325.8	113.8	34.9
livestock and poultry growth	37.2	87.0	2.3 times
eggs, mln. pcs.	274.7	279.0	101.6
Net profit of agricultural enterprises, million rubles	78.8	1200.0	15.4 times
Profitability of agricultural production, %	1.5	14.5	+13.0 p. p.

The use of modern technologies on the basis of increasing doses of fertilizer application and the use of recognized varieties contributed to an increase in the yield of the main crops to the level of 2012: potatoes – by 1.8 times, flax fiber – by 1.3 times, grain – by 1.3 times, rape – by 1.3 times, vegetables of open ground – by 1.2 times. Over the past five years, grain production increased in the Smolensk region. In 2018, in all categories of farms, 278 thousand tons of grain and legume crops were produced in weight after processing, which is 14 % higher than the level of 2017. For the past four years, agricultural organizations have received record grain crops in the post-reform period. More than 13 thousand tons of rapeseed were produced in all categories of farms, which is 28 % more than in 2017, while the total output (74 %) produced by agricultural organizations. The leading position in the countryin the production of flax fiber maintains stability in the region, despite a decrease in total output from 4.5 thousand tons in 2017 to 3.3 thousand tons in 2018. It should be noted that flax growing in the Russian Federation is going through hard times, therefore the primacy of the Smolensk region is relatively and many times lower than its pre-reform level. The decrease in gross production of flax fiber is due to a decrease in the cultivated area of long-fibred flax caused by the lack of specialized machinery and equipment for its cultivation, which are not produced in Russia. According to the main typesof agricultural products, the region is among the top ten regions of the Central Federal District. It should also be noted that the region's place in the rating has risen in all positions over the past five years.

The positive dynamics of the development of agriculture in the region are also evidenced by the awards received at exhibitions at the national level. At the Russian agricultural exhibition of the Ministry of Agriculture "Golden Autumn 2018", agricultural producers from the Smolensk region received awards in four categories. Thus, the strategy of scientific and technological development of the agrarian sector in the region gives positive results: new jobs are created, the working conditions of rural population are improved, and environmental conditions are improved.

Comprehensive development of the agro-industrial complex has a direct impact on the sustainable development of rural areas. The region maintains a positive trend in the development of rural engineering infrastructure. In 2018, 104 million rubles of budgetary funds were allocated for the implementation of measures for the social development of the countryside, including 90million rubles from the federal budget (87 % of the total funding) and 14 million rubles from the regionalbudget (13 %). Construction work of gasification facilities was carried out in 11 rural settlements of six administrative districts of the region, resulting in the operationalization of about 23 kilometers of gas distribution networks. In addition, more than 13 kilometers of local water supply networks were put into operation, resulting in providing four settlements with cold water, which, unfortunately, does not yet correspond to the real needs of rural residents for centralized water supply.

The living conditions of rural residents are constantly improving in the region: in 2018, about 3.2 thousand square metersof housing were introduced into rural areas, including 78 % for young families and young professionals. In 2018, for the first time in the region, the implementation of socially significant non-profit projects began as part of the event "Grant support for local initiatives of citizens living in rural areas". Currently, six projects have been implemented for the construction and reconstruction of socio-cultural facilities in the countryside.

However, this is not enough for the sustainable development of rural areas.In addition to the production sector, social conditions of life are of great importance for engaging and consolidating the population in rural areas: modern comfortable accommodation, medical and cultural services. The destruction of rural settlements did not begin today, but in the 60s of the last century, i.e. in the period when "schools under strength" were closed, taxes on personal subsidiary plots were introduced, etc. The revival of rural territories in modern conditions will require quite large financial investments. The financing of the regional program for the development of rural areas of the Smolensk region is carried out mainlythrough state funds (Table 3).

As we can see, the share of local budgets in the amount of financing is negligible, because the main source of local income is personal income tax, and in times of crisis this

source is unreliable. Moreover, almost all of the fund-raising incomes are spent on housing and communal services, and nothing remains for the development of the social sphere [4]. To maintain and develop rural areas, it is necessary to strengthen local budgets by developing and supporting small and medium businessentities that perform village-forming functions.

TABLE III. FINANCING OF THE REGIONAL RURAL DEVELOPMENT PROGRAM

Sources of financing	2019		2020		2021	
	millionrubles	*%*	*millionrubles*	*%*	*million rubles*	*%*
Total, million rubles	1168.5	100.0	1339.1	100.0	1199.5	100.0
including regional budget	414.3	35.5	369.5	27.6	369.1	30.8
federal budget	577.7	49.4	631.2	47.2	573.6	47.8
local budgets	3.8	0.3	3.2	0.2	2.6	0.2
extrabudgetary sources	172.7	14.8	199.9	14.9	106.9	8.9
regional road funds	-	-	135.3	10.1	147.3	12.3

After the adoption of federal documents on the development of rural areas in the Smolensk region, work is actively being done to expand and improve the housing stock: the annual commissioning of housing over 18 years has increased by almost 10 times, with the result that the current housing supply in the countryside is 16 % higher than in the city (table 4).

This is largely due to the fact that 90 % of housing units in rural areas is privately owned, and more than 80 % of new housing unitsare built by the population throughpersonal and loan funds. The availability of loans for housing construction dramatically changed the housing problem in the countryside. In 2000, in the city housing units per 1000 inhabitants were introduced 3.3 times more than in rural areas, while in 2018 the opposite was the case: a relative indicator of housing commissioning in rural areas is 2.3 times higher than in urban areas now.

TABLE IV. INDICATORS OF LIVING CONDITIONS IN RURAL AREAS OF THE SMOLENSK REGION

Indicators	2000	2005	2010	2016	2018
Rural housing stock, thousand square meters, total	7784	7788	8071	8378	8457
including private housing stock	6660	6651	7024	7504	7655
Buildings in the countryside: residential buildings with a total area of thousand square meters, total	19.4	42,7	56.5	211.3	171.7
includingbuildings provided from personal and loan funds of population	17.1	42,1	50.3	169.5	144.9
Total area per 1 resident, sq.m.: in the countryside	23.8	28.1	30.1	31.3	31.8
in urban areas	20.3	22.3	23.9	26.6	27.4
Commissioned residential buildings per 1000 people, sq.m.: in the countryside	59	144	208	790	645
in urban areas	195	310	407	608	276

Thus, we can discuss the first results of a fundamental change in the policy of regional authorities in relation to rural areas. However, to ensure a comfortable standard of living in rural areas, it is not only the availability of housing that is important but also the level of its improvement, in particular, central water supply, which allows the use of modern home appliances. But according to these indicators, rural housing is significantly inferior to urban housing (Table 5).

TABLE V. INDICATORS OF IMPROVEMENT OF THE HOUSING STOCK IN THE SMOLENSK REGION

Total equipped area, %	Ruralsettlements		Urbansettlements	
	2016	*2018*	*2016*	*2018*
Plumbing	45.9	47.3	84.5	84.9
Drainage system	31.0	31.7	81.9	82.3
Heating	49.4	53.1	90.8	91.0
Bathtubs (shower)	20.9	21.5	74.2	75.5
Gas	85.8	87.2	89.3	90.3
Hotwatersupply	15.0	16.1	73.3	74.4
Electric stoves	1.4	0.9	7.3	7.1

The percentage of living space with plumbing, drainage system, hot water supply, and sewerage is extremely small. Only 30 % of settlements have plumbing and 5 % of villages have sewerage. Moreover, these are average indicators, but in fact, home improvement is carried out in large settlements without solving the infrastructure problems of small settlements. Currently, only every 5 households have a range of household benefits in housing.

About 30 % of the localities(these are settlements outlying from the district centers) do not have the connection on paved roads with a public communication network, about 20 % are not telephoned, 4 % are not served by the postal network (these are calculations based on the data of the latter census). One of the most important problems in the rural areas of the region is the centralized water supply and gas supply. This year, gas supply to 12 municipalities was improved with 31.4 million rubles funding, and water supply networks in 6 municipalities were reconstructed and built with 20.6 million rubles funding.

Improving the living conditions of ruralpopulation of the Smolensk region was not accompanied by appropriate infrastructure. Therefore, the sociocultural living conditions in rural areas over the past decades have only worsened (Table 6).

However, it is the infrastructure that plays an important role in formation a new way of rural life, engagement, and most importantly, retention of young staffwhois accustomed to relatively comfortable living conditions during the time they received their profession in the district and regional centers [5]. For almost the last two decades, not a single school or library has been built in the rural Smolensk region, and the capacity of the cultural institutions and preschool institutions introduced in 2016 clearly does not correspond to actual needs, and this is why less than 36 % of rural children are enrolled in preschool education. But the situation is particularly dire in rural health care, which to a certain extent is a consequence of the ill-conceived policy of “optimization” pursued by the Ministry of Health. For the period from 2000 to 2018 the rate of decline in the number of beds in district and

rural hospitals amounted to 2 and 8.7 times, respectively, which is significantly higher than the rate of decline in the population. During this period, the urban population decreased by 11 % and the rural population – by 17 %.

TABLE VI. INDICATORS OF SOCIAL CONDITIONS IN RURAL SMOLENSK REGION

Indicators	2000	2005	2010	2016	2018
Rural housing stock, thousand square meters, total	7784	7788	8071	8378	8457
including private housing stock	6660	6651	7024	7504	7655
Buildings in the countryside: residential buildings with a total area of thousand square meters, total	19.4	42.7	56.5	211.3	171.7
general education schools, number of places	65	-	-	-	-
cultural facilities, number of places	-	-	-	228	-
pre-schools, number of places	-	-	-	150	-
Total area per 1 resident, sq.m.: in the countryside	23.8	28,1	30,1	31.3	31.8
in urban areas	20.3	22.3	23.9	26.6	27.4
Commissioned residential buildings per 1000 people, sq.m.: in urban areas	195	310	407	608	276
in the countryside	59	144	208	790	645
Number of organizations providing preschool education	…	102	93	64	60
Coverage of children with preschool education, %	…	28.8	31.8	35.7	…
Number of beds: in central district hospitals	5037	4811	4589	2584	2533
in district (rural) hospitals	470	236	133	50	53
Number of primary health facilities in central district hospitals	24	25	32	32	32
The number of people who received emergency medical care in rural areas, people, total:	99307	100705	90194	81370	78901
per 1000 rural population	304.2	338.9	332.8	304.4	296.6

Rural population of the Smolensk region do not always have the opportunity to receive timely medical care in case of emergency, because in 2018, there were only 32 ambulance stations in the central district hospitals, i.e. at an average of 1.3 ambulance stations per district. The absolute and relative indicators of emergency care for the rural population also decreased: the number of people who received emergency medical care for the period from 2000 to 2018 decreased by21 %and the same indicator per 1000 inhabitants – by 2.5 %. Of course, a decrease in the absolute indicator was influenced by a decrease in the rural population, as well as a decrease in the incidence rate of residents of the Smolensk region as a whole from 731 to 724 per 1000 population. For the rural population, there are no separate statistics on the incidence,however, during the analyzed period, the proportion of the rural population over 55 years old increased by almost 1.5 times, therefore, it can be assumed that the incidence rate has also increased, as the incidence is higherin older age groups.

The assessment of the materials reviewed allows concluding that in recent years a lot has been done for rural areas in the Smolensk region, but is it enough, and how much is needed – there are no justified answers to these questions, neither at the regional nor federal levels, although financing of all activities for improvement of rural life is carried out mainly from the federal budget. The broadly similar patterns and development trends of rural areas of the Smolensk region are seen in the country as a whole, and it allow assessing the public rural policy.

The rather low level of socio-economic development of the countryside in the 21st century is associated not only with historical reasons (solving the country's problems primarily with the help of the countryside, financing the countryside by a leftover principle, etc.) but also with the lack of a reasonable state strategy for development of rural areas, although today, as already noted, several program documents have been adopted at the federal level (the last program was adopted on May 31, 2019 [1, 6]).

There is no an overall consensus about the need for the equivalent development of urban and rural settlements neither in Russian society as a whole nor in power structures. In our opinion, it is necessary first of all to get answers to the questions: is it necessary to have a village at all, is it necessary to preserve and increase the number of the rural population, because the restoration and development of rural areas is a very expensive project – there are no funds for its implementation in the regions. This project is unprofitable by definition, so it is unlikely to expect large private investors to come to the countryside in order to improve rural life, at best they will come for building enterprises and importation of cheap labour where it still remains. Large agricultural holdings supported by the government are not interested in the development of rural areas; moreover, they negatively affect the environment [3, 4]. From the point of view of a market economy, investments in rural development are not profitablec – even if there were a possibility to get a refund, it’s not without risk. Consequently, most of the financing of this project should be carried out from the federal budget, and on an ongoing basis. Indeed, in the final analysis, the development of rural areas will contribute to strengthening the territorial integrity of the state.

III. CONCLUSION

The problem of rural areas is not solely Russian; it exists in all developed countries of the world. Therefore, it is advisable to use the experience of the EU and US countries when developing the fundamentals of rural policy in the Russian Federation. So in Germany, a rural development strategy is being developed for each federal state, because the

conditions and level of development of each land are significantly different. When developing the program, the proposals of the federal government and specific applications of community for the development of territories are combined. An atlas of rural areas has been compiled in Germany, which reflects the current state of objects and is a tool for monitoring the level of development of rural territories and existing problems. Funding is the most important issue. In Germany, 2.4 billion euros are provided for rural development – these are funds from the EU and the federal government. At the same time, it is taken into account that there are developed and problem areas and various tools must be used to compensate for the differences. The Law on the Development of Rural Areas in Germany requires the same standard of living for all inhabitants of the countryside and the equivalent development of all territories [7].

In the United States, a public-private partnership was used to solve the problem of rural areas in the 80s of the last century: the efforts of business, local government and the state were combined. It should also be noted that the US government always realistically estimated financial costsin developing rural development programs.At the same time, 60–80 % of the budget of local authorities in the USA comes from its own sources, and the remainder comes from transfers from higher budgets and through targeted programs [4].

The Ministry of Agriculture tasked Russian scientists with developing an atlas of rural areas of the Russian Federation. At the same time, in contrast to Germany, it is recommended to rank the territories according to the level of development and, first of all, to highlight the problem areas, which initially will require more financial investments. Deprived rural areas must be allocated at the legislative level to develop initial measures for their development. Anti-crisis programs of a forced nature should be developed for such regions. They should be individual for each territory and take into account local characteristics. Academician A.V. Petrikov believes that it is necessary to preserverich rural areas and maintain poor ones, and he does not agree with the opinion of some members of the government that rural entrepreneurship is the basis for the development of rural areas, as this does not meet the objectives of the State Program for Integrated Development of Rural Areas (IDRA) adopted in 2019. According to Petrikov, the development of rural areas is an interdepartmental program, and not just the task for the Ministry of Agriculture. Suitable industrial enterprises must be relocated to the countryside to ensure non-agricultural employment for part of the rural population [4, 6].

It is the people, who are the basis of rural areas, and the density of the rural population is currently very low, so the first thing is the training of personnel potential, then investments will give a return. The implementation of the rural development program should be based on human capital, while local resources (forest, water, minerals) should be assigned to local communities, and therefore, the concept of local community needs to be justified. In this case, local authorities will have their own incomes for the development of rural areas and will depend less on federal and regional resources [3, 6]. Unfortunately, in the latest IDRA State Program, this problemwasn't even mentioned.

In our opinion, the important reason for the underdevelopment of rural territories is that local authorities are currently not obliged to establish programs for their development. According to Russian scientists [4, 6], it is necessary to create groups to establish a development program for each specific territory, which should include the head of administration, local entrepreneurs and active residents interested in the sustainable development of their settlement. This is the procedure for developing a rural development strategy that has been successfully applied in Germany. The growth points of rural areas may be inter-district information and technology centers that can demonstrate new brands of agricultural machinery, as well as equipment from other industries –wood industry, food industry, etc. State benefits are also absolutely obligatory for those agricultural producers who carry out measures to improve rural areas at their own cost.

The experience of developed countries shows that sufficient financial support is a determining and necessary condition for the sustainable development of rural areas. In fact, in recent years, the amount of funding for these purposes from the federal budget has significantly decreased. So, for the period from 2012 to 2018 the decrease in the amount of funds from all sources amounted to 14 % (in rubles) and 57 % (in US dollar equivalent). In the future, a substantial increase in funding is envisaged, but it is without assessing the adequacy of the allocated funds again. However, Russian economists believe that the sum of 2.3 trillion rubles reserved in the budget for the next six years (i.e. at an average of 383 billion rubles per year) is obviously not enough, especially considering inflation. True amounts should be much higher. For comparison: financing of the new law on rural development adopted in 2018 amounts to 430 million dollars (without housing programs) while the budget of the program adopted on July 31, 2019 for the integrated development of rural areas of the Russian Federation is24 million dollars. [4, 6]. Thus, the new rural development program, like the previous ones, was adopted without an objective financial and economic justification. Obviously, the state at this stage of the development of the domestic economy is not interested in successfully solving rural problems.

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