

## **RESULTS ASSESSMENT OF SUSTAINABLE RURAL DEVELOPMENT IMPLEMENTATION. CASE OF THE STAVROPOL REGION**

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### **Abstract**

Sustainable rural development is regarded as one of the main priorities of modern social and economic development on international, national and regional levels. The article presents the research of social and economic spheres within the implementation of Federal Target Programmes of sustainable rural development, based on the example of the Stavropol Region. The major results of the current research are authors' interpretation of regional sustainable development, overview of the state policy in the field of social and economic rural development and assessment of the results achieved.

**Keywords:** sustainable rural development, state programme, regional economy, rural areas, agricultural products.

**JEL classification:** R130

**LCC code:** HD72-88

### **Introduction**

Nowadays the problems of economic independence, security and sustainable development of the regions are the determinative ones for Russia regarding to economic growth, GDP increase and maintenance of steady state.

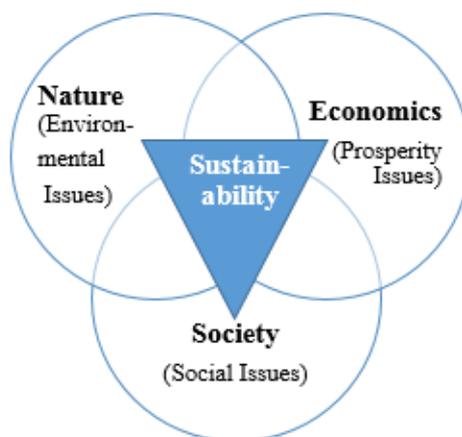
The concept of "sustainable development" has entrenched oneself into economy of advanced nations. It is caused by the agenda for environment and development adopted at the first UN Conference on Environment and Development (UNCED) in 1992 in Rio de Janeiro. This Rio Declaration defined the main three components of sustainable development, namely economical efficiency, social equality and ecological sustainability. However, for the purpose of insightful analysis it is reasonable to study economic competitiveness as one more component.

The term "sustainability" is used with variety of scientific definitions. In philosophy and physics, sustainability is considered as a motion state characteristic of material substance. In mechanics, this concept means the ability of mechanical systems to offset external impact while motion.

From the systematic standpoint of economic research approach, the notion "sustainability" is defined as a property of the system used for characteristic of the whole system rather than some of its parts. At the same time, all of these parts may have different resilient levels (high, medium and low).

According to the points of view of some Russian economists such as Professor V. Bautin, V. Kozlov, N. Andreeva etc., the fundamental difference between the sustainable development and traditional business practice is the integral approach to the industrial management. This approach implies triple bottom line that consists of following components: nature-society-economics. Schematically it is represented in the Figure 1.

Under the component “nature”, the mentioned authors consider such terms like ecology, pure environment, biodiversity, natural resources preservation, reducibility. In the framework of concerned approach, the component “economics” includes stability, effectiveness, and production development. As for the component “society”, it involves poverty reduction, rise in the standard of living, right to take part in the process of decision-making, traditions and culture. In our opinion, the offered approach completely reproduces the model of sustainable development.



**Figure 1 - Triple bottom line of sustainable development**

*Source: authors' development according to Cavagnaro E., Curiel G., 2012.*

The region is the most important element of national economy. It is a complex multilevel structure that is characterised by complexity, integrity and managing ability. It also has its own structure, functions, history, culture, living conditions, internal dynamics, lines of developments of local enterprises, authorities etc. In this case, the main goal of the government is to support its regions and to promote sustainable development at first at the local level. Line of action of that kind makes possible to realise the strategy of sustainable development at the national level.

Among the regions of Russia, rural areas have always been the places of great importance. The major reason is that countryside represents great natural, demographic, cultural and economic potential. Nevertheless, the development of rural territories is under irregular way. The current situation of rural economy is characterised by such features as innovation and information gap; lag between living conditions in cities and countryside; outflow of population from rural areas.

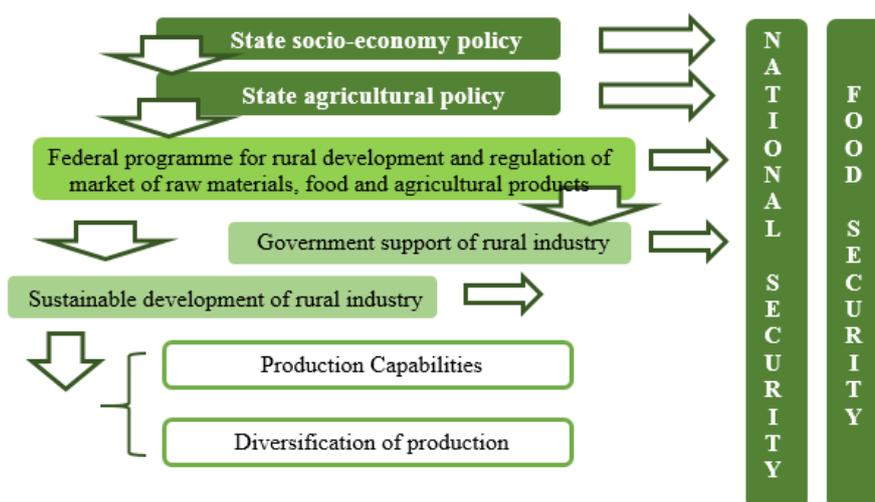
According to the data of population census in 2013, migration outflow has increased by 8 per cent in a year, while two thirds of the total number of rural settlements has less than 200 inhabitants.

During the period from 2000 till 2014 the employment in the main agricultural sectors reduced from 49 to 23 per cent. The wages in agriculture in 2015 were only 58% of the national average wage in all industries. Pursuant to survey the half of young people are intended to leave rural

areas. If the current tendency holds true the proceeding decline of rural economy will be guaranteed (Ministry for Economic Development, 2015).

The way out could be based on gradual transition to the stage of stability and sustainability (Figure 2). In fact, the Government of the Russian Federation adopted on the federal level the Strategy for sustainable development of rural areas. The problem is that each region need real and effective mechanisms of its realisation, which is especially important taking into consideration the high level of discerning of Russian countryside.

To define the most appropriate measures to ensure sustainability of the rural regions in terms of economic, production and ecological factors it is necessary to examine the categories of sustainable development in agriculture.



**Figure 2 - Gradual Transition Strategy to the Sustainable Rural Development**

*Source: authors' development according to Hodos D., 2013*

In consideration of the peculiarities of the agricultural sector, there is a need to distinguish the main categories of its sustainable development. Hodos D. has differentiated following types of sustainable development. They are industrial, economical, financial, ecological etc. The offered classification is not completely acceptable for rural economy. Such indicators as profit level, economic efficiency, financial rating, breakeven point and many others are unquestionably important. However, in terms of agricultural activities the complex of implementing rates differs. The Figure 3 illustrates them.

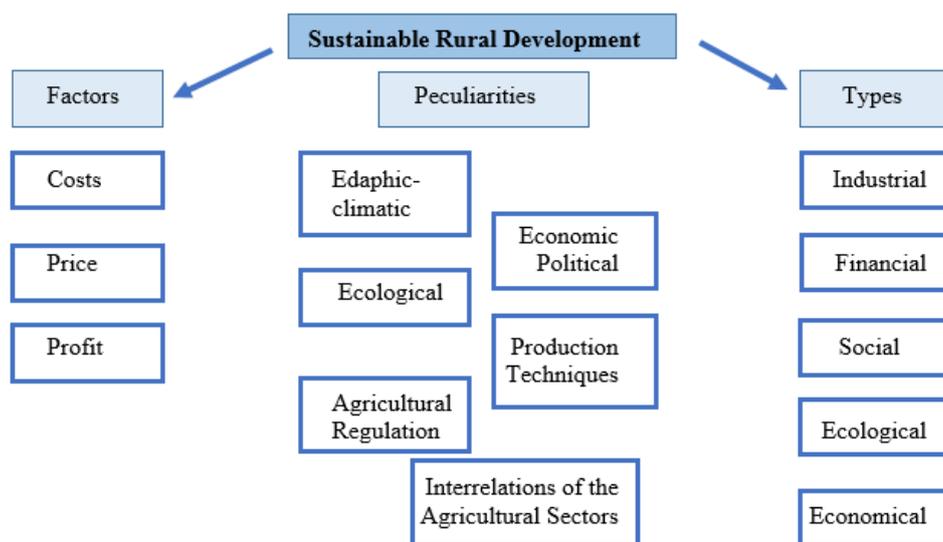
The fundamental peculiarity of the rural economy sustainability shows itself in the strong natural conditions dependence. It effects mainly on the organizational sustainability, which is basic requirement to any sector of the national economy.

There are several approaches aimed to provide sustainable rural development, based on variation of agricultural production output. (Ivolga A., Erokhin V., 2012) According to them, there is a number of deterrents in rural sector, among which are the following factors:

- -reduce of productive capacity and soil conditions;
- -price distortions of the agrisector;
- lack of experienced specialists of the sphere;
- financial indebtedness of agricultural products producers at high level;
- poor innovation development.

Sustainable rural development should not be confused with effectiveness of production. The feature of productive efficiency is based on transaction to its diversification, while to develop sustainably for rural sector means to integrate firmly the whole complex of elements of economic system.

In this case, the concept “sustainable rural development”, in our opinion, should be defined as an ability of all rural economy sectors to follow the ratio of effective production in the sphere, to expand production and to form food security at the national level, as well as at the local one.



**Figure 3 – The System of Sustainable Rural Development**

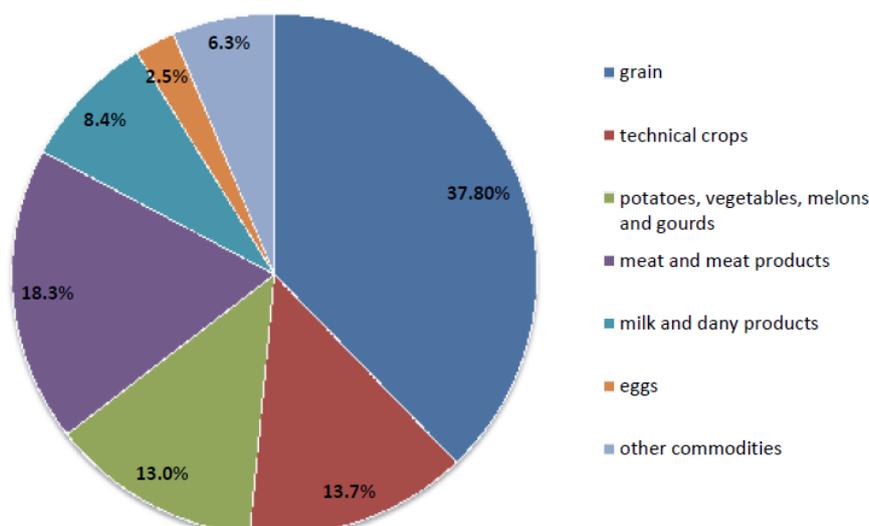
*Source: Hodos D., 2013*

**Materials and methods**

Based on government programmes aimed at rural development, statistical data and reports of Federal Service of State Statistics, Ministry for Economic Development and Ministry for Agriculture. We analyzed the modern conditions in rural areas, determined the problem issues and assessed the efficiency of implemented state policy. All the results are presented in forms of tables, diagrams and schemes. For its preparation there were utilized abstract, logical, comparative methods, as well as system approach to systematisation and stocktaking of sustainable development aspects.

**Stavropol Region: Main indicators**

The objective of this paper is to estimate the current state of rural sustainable development, and to find the ways of its optimisation, using the case of Stavropol Region. It is located in the south of Russia, at the foothills of the North-Caucasus. As the Ministry of Economic Development states, the area of the region amounts 66.2 thousand km<sup>2</sup>. The main sphere of specialisation is agricultural sector, that has a leading position in number of employed and in Gross Regional Product formation. The biggest part of agricultural production rendered by crop production (Figure 4). According to the statistics, given by the Ministry for Agriculture of Stavropol Region, the recent years were quite positive for the territory development (Table 1).



**Figure 4 – The structure of agricultural production in the Stavropol Region in 2013**

Source: Ivolga A., Erokhin V., 2014

According to the database of territory agency of the Federal State Statistics Service in Stavropol Region, total output of agricultural products in 2014 amounts 145 976,9 million rouble, which is 22% more than its level in 2012 and equal to 44% of the average output of the North-Caucasus district. Productivity figures of the agricultural industry in the region have also upward trend, 35% increase for crop production and 7% increase for animal production. Nearly 93% of farms is working with profit. Moreover, there is 22% increase for profit value among agricultural producers (Table 1).

**Table 1 – Analysis of main indicators of economic development of the Stavropol Region in 2012-2014**

	2012	2013	2014	Growth ratio, %
<b>Balanced financial result of farms (profit/minus loss), million rubles</b>	8919,0	7607,0	10863,0	121,8
<b>Gross agricultural output, million rubles</b>	101214,1	122274,1	145976,9	144,2
<b>Employed population, thousand people</b>	1309,2	1285,5	1299,0	99,2
<b>Employment level, %</b>	61,6	60,5	61,5	99,8
<b>Average per capita income of rural people, rubles</b>	13992,0	15903,0	19087,0	136,4
<b>GRP, thousand rubles</b>	52187,6	45001,3	57628,9	110,4
<b>Gross collection of grain crops, thousand tons</b>	4957,5	7117,9	8741,2	176,3
<b>Output of grain crops per hectare</b>	22,6	30,5	37,3	165,0
<b>Farm stock</b>	374,2	383,6	400,8	107,1

Source: authors' development according to the Federal Service of State Statistics of Stavropol Region, 2015

Examining the demographic potential of the Stavropol Region it should be noted that its state is sufficient for rural sustainable development of the area. Among other regions of the district

the Stavropol Region ranks third for population, which is provided by a positive migration balance since 1999. Stavropol Region is one of the least urbanized areas, its rural population ratio amounts 46%, while the country's average ratio is 20%. The rate of employment of the Stavropol Region is slightly ranging, while the average income of rural people is consistently growing (above 30% in comparison with 2012) (Table 1).

Though regional economics is a relatively isolated system, economic factors of the national level play no less significant role in the sustainable development of the area. In this case, the region is affected by such factors like the state of interregional relations, fluctuations in prices of both regional and foreign exchange markets, state economic policy, etc. One more virtue of the Stavropol Region is its location. The territory lies at the crossings of transport routes from Central Russia to Transcaucasia, from Donbass to the Urals-Volga region, from the Eastern regions to the ports of the Black sea. This state present necessary preconditions for sustainable development of the economic complex of the region, including trade growing and economic ties strengthening. Domestic transport communication network, being an integral part of local infrastructure, has also an impact on the maturity level of the region. The region possesses of railways 1.47 thousand kilometers and roads 26.7 thousand kilometers long. It falls 22 km and 400 km correspondingly per thousand square kilometers of the territory, where 210 km have hard surface. All the district centers and most of the farms are connected with good roads that are suitable for transportation of industrial and agricultural products.

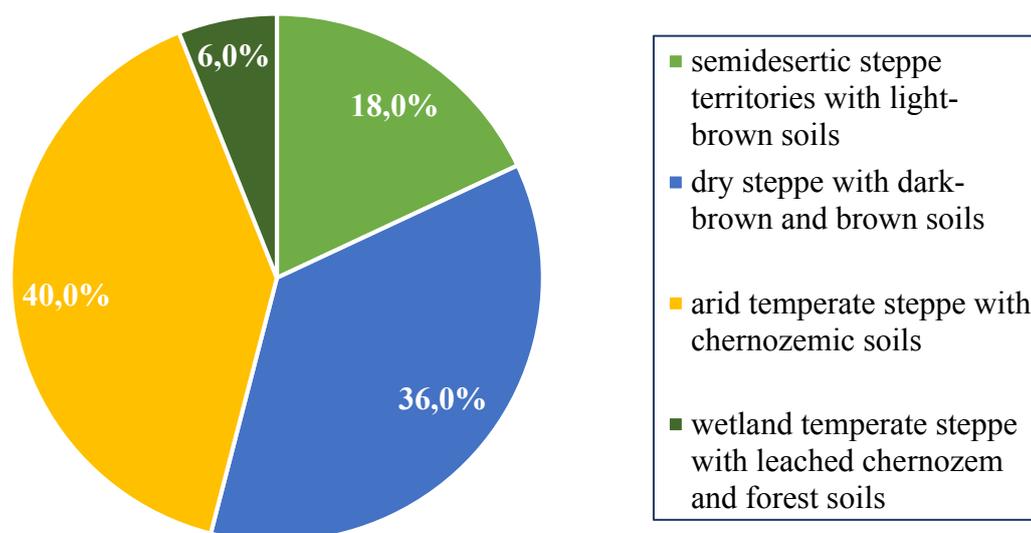
The most profound impact on the development of the Stavropol Region is observed from the land resources and climate. It is located in the south of Russia, at the foothills of the North-Caucasus. The area of the region can be divided into 4 groups from the agricultural production point of view (Figure 5). They are:

- semidesertic steppe territories with light-brown soils;
- dry steppe with dark-brown and brown soils;
- arid temperate steppe with chernozemic soils;
- wetland temperate steppe with leached chernozem and forest soils.

From the standpoint of economic complex resourcing and agricultural industries resourcing among other things, such land structure is quite favourable. Thus, 46% of the total area can be occupied with crop cultures, 36% of it can be used for crop cultivation on condition of its supplemental irrigation. As for remaining 18% of land, its usage in plant production is too risky while for livestock farming such soils are still favourable as pastures (Federal Service of State Statistics).

In this case, for sustainable rural development of the region under current climate conditions it is necessary to implement following measures:

- land-use systems adopted to the area characteristics;
- agronomical amelioration;
- set of measures aimed to prevent or resist the process of desertification.



**Figure 5 - Land Structure of the Stavropol Region**

*Source: authors' development according to the Ministry for Agriculture of Stavropol Region and Federal Service of State Statistics of Stavropol Region, 2015*

Overall, the region has developed quite a differentiated system of land use, which corresponds to natural and ecological regional characteristics and reflects the overall status of agriculture for domestic economy. However, cases of misuse of land still occur. Thus, erosive processes affected about 1.6 million hectares, or 30% of the total area of agricultural land. Croplands that amount more than 2 million hectares belong to the category of erosion-hazardous. There is still the problem of land pollution with industrial and city waste. There is a real threat of the desertification extension in the region, caused mainly by anthropogenic factors. All these fact indicate on the significance for Stavropol region the ecological component of economic complex, as well as a factor of sustainable rural development.

Currently, to dispose of energy resources and objects of extractive industries is one more thing of great importance for the socio-economic wellbeing of the territory and sustainable development of its economy. As for Stavropol Region, in its area there are deposits of oil (66 million tons) and natural gas (43 billion cubic meters), prepared for exploitation. The region also possesses the largest reserves of salt, mineral waters, raw materials for manufacture of building materials. All of these factors represent the preconditions for sustainable development of industrial region, the development of raw-material branches for the oil and gas extraction.

As studies show, the Stavropol Region have developed an advanced water-economic complex. It includes main and distributing canals, covering approximately 1400 km, 14 large reservoirs, 524 hydraulic facilities, thereby provide the area with more than 2 500 million cubic meters of water, that covers its natural deficit. About 5% of the potential groundwater resources of the Russian Federation falls the Stavropol Region share. The total salt content in these waters exceeds 10-80 g/L, which determined the formation and development of Caucasus Mineral Waters region, the recreational complex of global significance. Taking into account unique physicochemical compound of mineral waters and its large resources in the area of Stavropol Region, it is necessary to expand the branch of balneotherapeutic health resorts for the aim of

favourable conditions creating for sustainable development of the region (Federal Service of State Statistics).

### **The Strategy for sustainable development of rural areas**

In order to strengthen the preconditions for sustainable development of rural areas and to eliminate barriers and defects of the current statement of economy, the Government of the Russian Federation accepted the Federal Target Programme “Sustainable Rural Development in for the period until 2020”. In accordance to its purposes and instructions, each region adopted this strategy to the peculiarities of the area. The Stavropol Region is not an exception. The goals which set before the Stavropol Region, according to the Strategy for rural areas development (approved by the Ministry of Agriculture) are following:

- soil conservation and its enrichment;
- satisfaction of needs of rural people in high-quality products, sufficient for self-reliance;
- effectiveness increase of agricultural complex operation;
- arranging the crop production-to-cattle breeding ratio as 70:30
- increase of exports of agricultural products, raw agricultural materials and foodstuff, if and when the domestic markets are saturated;
- development of industries of agricultural products processing, including carrying out the new technologies;
- development of material and technical basis of the domestic infrastructure;
- development of import-substitution industries, including vegetable and fruits production;
- minimize the cost of logistics and support the competitiveness of production, considering at the same time the rational location and specialization of agricultural and food industries by zones and regions of the country (Ministry for Agriculture, 2015).

During the realisation of the goals above the region faced to a number of difficulties, among of which are following:

- non-sufficient sustainability of the main agricultural products output;
- gross wear of machinery and equipment;
- high production costs;
- non-sufficient control and support from the authority;
- underdeveloped food industry;
- overhead artificial reservoirs;
- decline of reclaimed areas (Ministry for Agriculture, 2015).

In order to complete assigned tasks, there were made a number of arrangements. Within the framework of improvement of soil quality, 10 million rubles were appropriated for the melioration of soil and 5 million roubles for its sensing. In 2012 fertilizers at a rate of 183.5 tons per hectare were introduced, which is 3% more than the same rate in the previous year and 18% more than its target level.

According to the Strategy of Agricultural Industry Development of Stavropol Region, development of industry to the level, sufficient for self-reliance of goods, supposes two patterns. The first one deals with modernisation of agriculture. For that case, it was purchased 1718 units of agricultural equipment. This pattern also includes investment attracting. Thus, its volume in 2014 amounted 14.4 billion rubles, which increased the previous year rate by 16%. This money made possible to realize 11 large investment projects for reconstruction of animal farms, systems for irrigation and melioration, for construction of greenhouses, departments for

agricultural products processing and poultry plants. It also served for job creation (in amount of 600 new workplaces).

The second pattern presupposes receipt of federal funds. In the year of 2012 it was gained 5.3 billion rubles from the federal budget, which is 21,3% higher funds, allocated in 2011. The sum was distributed between crop production and animal breeding in proportion 40:60. Among the scopes of its application was sheep breeding development, livestock breeding support, recovery of insurance expenditure and plant cultivation intensification.

It is observed a positive tendency in agricultural industry restructuring. By the year of 2012, the crop production-to-cattle breeding ratio has been changed from the 69:31 proportion to 64:36. It is provided with 5.5% increase of production output of cattle-breeding and poultry farms and 7.8% increase of milk and egg output. For the further modification there were offered strategic sets of arrangements, accepted at the local level. They are represented by such target programmes as “Development of beef cattle breeding in the Stavropol Region”, “Development of dairy cattle breeding and milk production expand in the Stavropol Region” and “Development of family farm for cattle breeding in the Stavropol Region”.

The implemented investment projects made possible to expand fruit production by 30%, while the vegetable total output has 13.4% reduce that is equal to 440.4 tons of vegetable products in 2014. However, this level of fruit and vegetable production is sufficient according to the medical standards of consumption (126.0 kg per person) and even 25% higher than its rate. As for vegetables grew under cover, the situation is rather different. Through new projects the protected horticulture facilities increased by 40% in comparison with 2013, which allowed expanding output of vegetables under glass by 38%. That also leads to 80% excess of standards of consumption. As a result, the produced amount of fruits and vegetables is sufficient not only for self-reliance, but also for further selling.

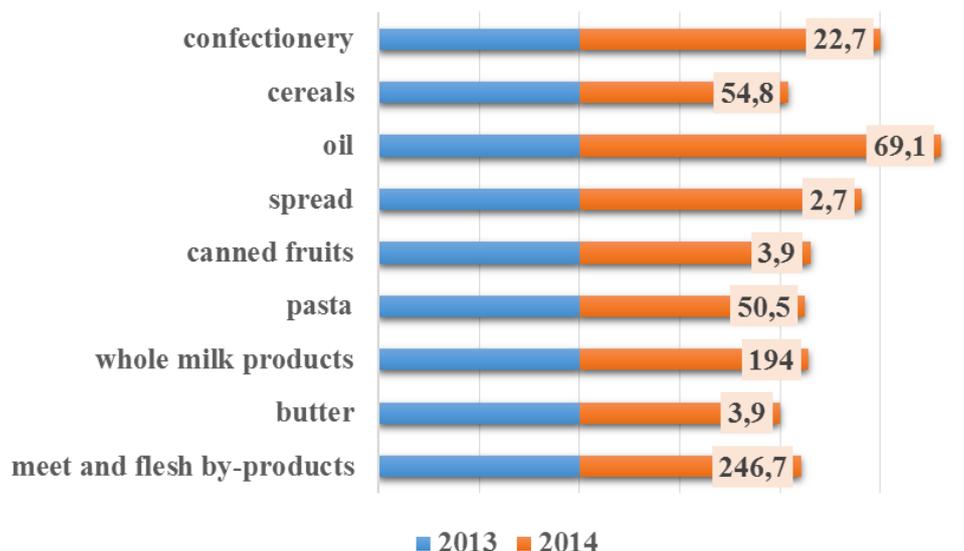
The state of livestock production is not so high potential as in plant production, but it is still positive. Cattle stock and pig population did not suffered big changes (3-4% only), while poultry stock had 9.7% increase, which is equal to 16595.8 thousand birds. Production output of the branch (meat, milk, eggs) had 1-3% increase (Federal Service of State Statistics).

Established priority in industries of agricultural products processing resulted in retooling and modernization of food producing units. The spheres of the greatest interest were pasta producing, milk products producing and mineral waters filling. In the meantime, the number of projects were implemented for development of poultry processing, slaughtering and corn processing. The total projects costs amounted approximately 1 billion rubles.

The milk production suffered a great change for the aim of import substitution. This changes mainly represented by product expansion, which presupposed promotion of such new products like lactose-reduced and lactose-free milk, milk with high concentration of protein and calcium, milk with high concentration of melatonin (owing to nigh milking operation), new cultured milk foods (Greek yogurt, yogurt+ L.Casei) and new kinds of cheese (Russian Mozzarella, Russian Philadelphia, Cheddar).

In the whole, the branch of food processing has a positive dynamics of development, what is illustrated in Figure 6. By the year of 2013 the index of food production increased by 19.3%. The ratio of food production output in 2014 was 71.2 billion rubles, which is 18.8% higher its level in 2013. Current production level of meet and meet products, sugar, oil and bread products

13.7%, 35%, 25% and 2.5 times accordingly exceeds the recommended volume of consumption.



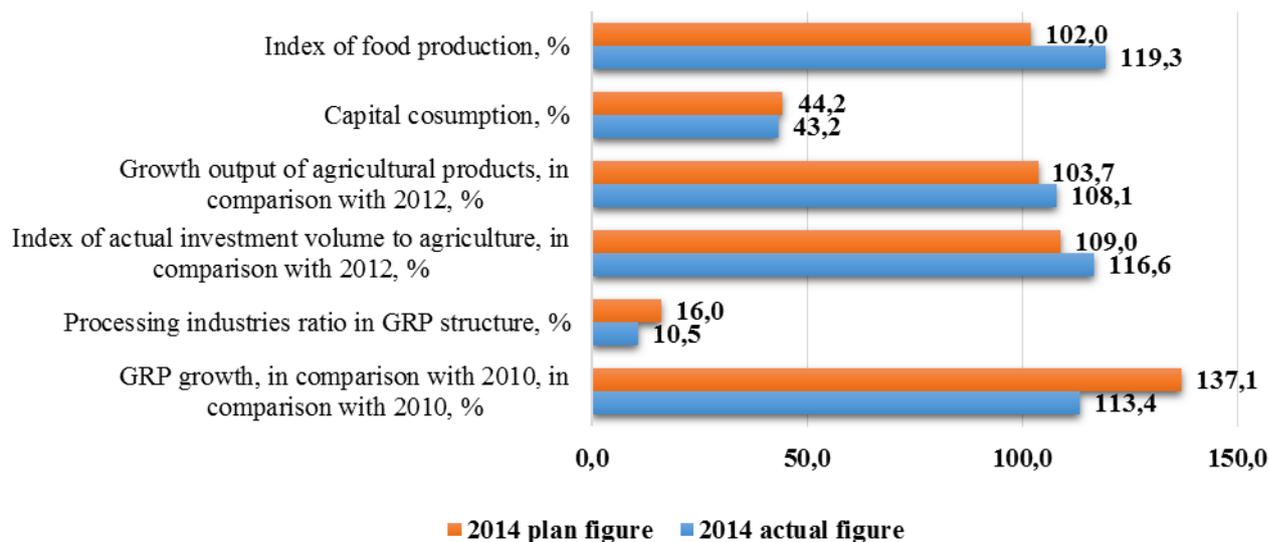
**Figure 6 –Dynamics of food processing in Stavropol Region in 2013-2014, thousand tons**

*Source: authors' development according to the Federal Service of State Statistics of Stavropol Region and the Ministry for Agriculture of the Stavropol Region, 2015*

Domestic agricultural fairs are holding to saturate the consumer market of Stavropol Region with quality products from local producers at reasonable prices. There are 217 grounds for its carrying. 549 fairs took place in the region in 2014 under the slogan "Buy food from Stavropol producers!". Such arrangements are helping to solve the problem of providing the population with food products at prices which are 10-20% lower than sell-out ones.

## Conclusion

Summarizing the results of implementation of the strategy for sustainable rural development in Stavropol Region, it should be noted that the executive authorities of the area mostly achieved the planned indicators for assessing the achievement of the strategic objective in terms of economics (Figure 7). Synthetic analysis of market specialization and the state of the existing industrial and social infrastructure as well as the branches supplementing a territorial complex, led to the conclusion that the region has being created a large agro-industrial recreational complex developing market infrastructure.



**Figure 7 – Main efficiency indicators of implementing of the Agricultural Industry Development Strategy in the Stavropol Region**

*Source: authors' development according to the Federal Service of State Statistics of Stavropol Region and the Ministry for Agriculture of the Stavropol Region, 2015*

However, despite the general positive dynamics there is a range of negative processes, related to the rural development in the Stavropol Region, which could not be solved by the year of 2025:

- worsening environmental situation and ineffective environmental management partially through the intensification of land-use;
- declining population in rural areas;
- imbalance in structure of regional economics (prevalence of agriculture);
- growing wealth disparity of population.

In order to solve following problems, it is necessary to work out more detailed ways for people, rural settlements, regions in frame of the current strategy.

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