



## Contemporary State of Resource Potential of Agriculture in South Russia

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### ABSTRACT

The present article estimates the resource potential of the agriculture, and reveals basic factors affecting agricultural production and agrarian market in the region. The author defines the reserves related to increasing the economic efficiency of the agro-industrial complex (AIC) subjects. It determines multiplicative change and reveals the factors that affect the stability and efficiency of the development of the organizational and economic mechanism of the agricultural business. The research of the resource potential of the Stavropol Territory proves high potential of the region's agricultural business development. The work specifies that there is a stable tendency of the increase in the efficiency of the agricultural production. The author makes the conclusion that subject to support of state structures it is necessary to create conditions for the agricultural business, stimulate the implementation of intensive power saving technologies, reduce the deficit of productive capacities to store and process agricultural products, ensure the inflow of qualified personnel in organizations of the AIC, make financial resources more accessible, increase the volumes of the financial support for large, medium- and small-sized agricultural organizations, and create a long-term program of implementing the intervention program on the agrarian market.

**Keywords:** Agricultural Business, Resources, Labor, Land, Innovations, Investment Activity

**JEL Classifications:** J43, E22, N54

### 1. INTRODUCTION

The contemporary state and tendencies of the development of national agriculture witness that the current economic mechanism of the Russian agrarian sector has not yet created such economic conditions that would focus all employees of agricultural organizations on the increase in the level of using land, material and technical, and labor resources, and implementation of research and technical achievements. Thus, the issues related to the increase in the efficiency of using production resources acquire the supreme importance. The role of material and technical, and social and economic factors in the development of agricultural production grows. Strengthening of their interrelations allows to form modern material and technical basis of the production, on the one hand, and to increase the outcome on the basis of intensification, rational

organization and use of production resources, and to improve organizational and economic mechanism of the activity, on the other hand. These other unsolved issues define the urgency of the theme of this article.

Economic transformations that take place in the country revealed a number of system problems of social and economic, market and opportunistic, ecological and anthropogenic, food and technical and technological nature. The unstable character of macro and micro economic processes we revealed and the dynamics of their basic indicators at the phase of the post-crisis development require the explanation of reasons of the current non-stability, systematization of a complex of factors that restrain the tempos of the increase in the efficiency of functioning of agricultural organizations as the most important

elements of the production area of the agroindustrial complex (Lowder and Carisma, 2011).

## 2. METHODS AND RESULTS

Various methods combined by the system analysis and analysis of basic agricultural resources were used for the research: Abstract and logical, monographic, system analysis, and expert methods.

In the South of Russia the Stavropol Territory is one of the basic agricultural producers. It specializes in growing grain and sunflower. Cattle rearing and fine-wooled sheep breeding play the leading role in the cattle breeding. Gardening, winegrowing, poultry breeding, pig breeding, and beekeeping are widely developed.

The agroindustrial complex of the Stavropol Territory is detached into a separate subject of management - A mega cluster. The economy of the majority of municipal establishments, level of social development, and welfare of rural population depend on its state and the development dynamics.

The economy of the Stavropol Territory has an expressed agricultural specialization. Areas of the agroindustrial complex hold the leading position both in terms of the number of people involved in the economy of the Territory, and the formation of the gross regional product. Above one fourth of all people employed are involved in areas of the agroindustrial complex, including 18.9% in the agriculture. The agroindustrial complex account for about 22% of the gross regional product, with agriculture accounting for 16.8%, which is the third basic area of the economy of the Stavropol Territory.

In the territorial division of labor the Stavropol Territory has positions of the important producer and supplier of agricultural products and food. In 2005-2007 the Stavropol Territory held the 3<sup>rd</sup> position according to the production of grain, as well as grape wines and cognac, the 6<sup>th</sup> position - sunflower seeds, sunflower oil, and meat (carcass weight), and the 7<sup>th</sup> position - sugar beet.

Competitive advantages of the Stavropol Territory that allow to strengthen positions in the Russian agroindustrial complex include the following:

- Considerable land resources (the 8<sup>th</sup> position in the Russian Federation) characterized by high natural fertility of soils represented by black soil (47% of all lands) and chestnut soils (the 4<sup>th</sup> position in Russia according to the quality of lands);
- Relatively high provision of the agriculture with labor resources (the number of people involved in the areas in the structure of economy is 20% against 10 in Russia);
- Experience of farming and accrued production potential, availability of the relevant infrastructure (transportation, educational, research, etc.), and;
- Availability of enterprises that are regional leaders.

However, a number of reasons of both industry-wide and subjective nature for the Stavropol Territory caused the occurrence and development of serious problems in the industry development.

The outrunning growth of prices for the means of production manufactured by the industry in comparison with the prices for agricultural products, and weak positions of agricultural producers on agrofood markets led to the aggravation of financial ill-being in the industry, and a decrease in the flows of goods of production and technical purpose in the agriculture. Finally, it caused technological and technical degradation on the background of weak investment attractiveness, and a decrease in innovational activity.

The developed countries have practically ceased reclaiming lands, and reduced the use of organic and mineral fertilizers. In these countries the hydrological basics of production have worsened, and the optimal structure cultivation areas has been infringed. The decrease in the soil fertility that partially leads to soils degradation goes on (FAO, 2012).

The system of professional training of labor forces is broken. Qualified personnel weakly goes on working in the agricultural production (Gerasimov et al., 2015).

For the years of reforms the cattle breeding has lost its leading position in the agroindustrial complex of the Stavropol Territory. The concentration of animal production in private farm holdings caused worsening of the products quality and loss of the industry development.

Competitive positions have been weakened in comparison with neighboring territories in the area of production, processing and selling dairy products, fruits and vegetables and meat products. Structural deformation of the agroindustrial complex, violation of inter-industrial connections and proportions are observed (Alexandratos, 1995).

The regional agroindustrial complex is a sort of social and economic system that has features of the territorial cluster with the industrial type of management that is developed simultaneously. It allows to develop general approaches to solving the problems that are currently peculiar of the majority of enterprises of the agricultural business.

1,152 economic entities of various forms of ownership function in the Stavropol Territory. They interrelate with the Ministry of Agriculture of Russia and the Ministry of Agriculture of the Territory. They include 453 agricultural organizations that are involved in marketable agricultural production, 12.3 thousand peasant (farm) holdings, and 412 thousand private farm holdings. A lot of organizations of various forms of economic activity appeared after reforming the agrarian sector of the Russian economy in the 1990s. At the present time it is possible to say with certainty that the process of the economy decentralization had positive effect on the resources provision, because under the impact of the increased competitiveness the resources saving and efficiency of production in the agriculture have grown.

In his report Rizov (2002) states that economic reforms in the Eastern Europe and developing countries included both privatization of agricultural production assets and restructuring of state and co-operative farms. Restructuring of the agriculture caused

the occurrence of several types of holdings such as cooperatives, partnerships, farm holdings, and their various combinations. A wide range of types of agricultural organizations can be found in the majority of countries in transition. One of the countries with a great variety of organizational and legal forms of agricultural organizations is Romania, where in addition to basic types of agricultural organizations it is also possible to observe hybrid forms such as combination of individual holdings and associations of larger agricultural goods producers.

At the same time the analysis of agricultural production of various forms of the agricultural business organization in the South of the Russian Federation shows that resources are the most efficiently used in the agricultural production of large goods. They make up the biggest ratio of the produced agricultural products (Official website of the Ministry of Agriculture of the Stavropol Territory of the Russian Federation). The process of integration in the agricultural business is associated with the annual growth of the agricultural production volumes. Herewith, the volumes of production are grown both in crop farming and cattle breeding. This process is observed in all categories of holdings (Glotova et al., 2014).

Over the latest 2 years the Stavropol Territory has seen the record harvest of grain. Herewith, the share of bread grain is 83%. This is one of the best indicators in the Russian Federation. In spite of the fact that the production of grain is the basic area in farming and its share in the income is 74%, the Territory produces considerable volumes of industrial crops. In the Territory the production of milk and meat, tradable eggs and pond fish was stabilized. Poultry industry and pig breeding are on the rise. The volumes of producing the basic types of animal products are increased due to the growth of the productivity of agricultural animals and poultry. The Stavropol Territory has occupied the second position in Russia according to the tempos of producing tradable eggs. Over the recent 5 years the share of the profitably operating holdings has remained 63% (37% in Russia) (Truchachev et al., 2015a).

The agriculture is the leading area of the Stavropol Territory. The data from Table 1 proves it.

During the researched period the gross domestic product (GDP) of Russia has increased by 53%, while the GRP of the Stavropol Territory has increased by 63.8%. As a whole in the country, the volumes of agricultural products have increased by 55.5%, and by 71.4% in the Territory. Herewith, the ratio of the agricultural production in Russia has increased from 6.5% up to 6.6%, and from 24.4% up to 25.6% in the Territory. In average the ratio

of the agricultural production for the researched period in the Territory makes up about 25.6% (as compared with 6.3% in Russia) (Truchachev et al. 2015a).

In order to define tendencies of the agricultural business development as the most important component of the population subsistence system, we will research the agricultural capacity of the Stavropol Territory. This is a complex of indicators that characterize the agrarian nature and as consequence food security of the national economy (Mazloev and Ozerova, 2015).

We will consider the whole aggregate of the resource potential of the region successively in the context of such types as:

- Land
- Labor resources
- Basic production funds, and
- Inventories (Sklyarov and Sklyarova, 2013).

Lands of agricultural designation whose basis includes farmlands cover the territory meant for systematic use in the agricultural business. The increase in the efficiency of land use is defined by rational use of farmlands (Gerasimov et al., 2013; Glotova et al., 2014; Trukhachev et al., 2014).

The land fund of the Stavropol Territory is formed by the land situated within administrative boundaries, including the areas covered with water and forests. It is a subject of law and economic use. During the researched period the structure of land sources and its area has not undergone any considerable changes (Table 2 and Figure 1).

The structure of farmlands characterizes the efficiency of using land resources that is defined by the ratio of production types of farmlands, namely tilled areas and perennial plantings (Tomilina et al., 2013).

Figure 1: Structure of farmlands of the Stavropol Territory

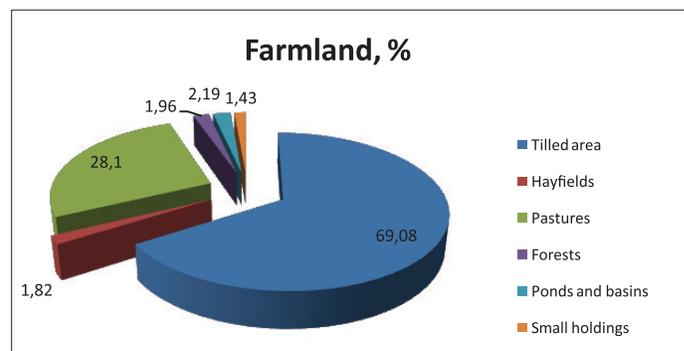


Table 1: Indicators of the Agrarian character of the development of economy of Russia and the Stavropol Territory, billion rub

Indicators	2010	2011	2012	2013	2014	In average for 5 years	2014 in % as to	
							2010	2013
Russian GDP	38,807.2	45,172.7	54,585.6	56,533.6	59,458.2	50,911.5	153.2	105.2
Including agricultural products	2,515.9	2,618.5	3,451.3	3,529.9	3,911.3	3,205.4	155.5	110.8
Ratio of agricultural production, %	6.5	5.8	6.3	6.2	6.6	6.3	101.5	105.4
Gross regional product of the Stavropol Territory	277.3	316.9	382.5	403.5	454.2	366.9	163.8	112.6
Including agricultural products	67.7	82.8	100.2	103.4	116.1	94.0	171.4	112.3
Ratio of agricultural production, %	24.4	26.1	26.2	25.6	25.6	25.6	104.7	99.7

GDP: Gross domestic product

**Table 2: Dynamics of land resources change (thous. ha)**

Indicators	2009	2010	2011	2012	2013	2014	Structure 2014, %
Total land area, including	6,616	6,616	6,616	6,616	6,616	6,616	100.0
Farmland, total	5,787.6	5,787.3	5,786.9	5,786.9	5,786.9	5,659.3	97.8
Including							
Tilled area	3,994.6	3,995.7	3,996.4	3,997.7	3,997.7	3,957.7	99.1
Hayfields	105.2	105.2	105	105.1	105.1	105.1	99.9
Pastures	1,628.8	1,628.1	1,627.8	1,626.3	1,626.3	1,626.3	99.8
Forest	113.2	113.2	113.3	113.2	113.2	113.2	100.0
Ponds and basins	127	127	127	127	127	127	100.0
Small holdings	79.2	80.7	82	82.9	82.9	83.0	104.8
Other lands	125.8	125.5	125.4	125.4	125.4	125.3	99.6

As on 01.01.2015 the total area of the Territory land fund has not changed and was 6,616 thous. ha. The data witnesses that in the Territory farmlands prevail. They occupy 87.5% of the Territory. In its turn it witnesses about high agricultural reclamation of the land fund of the Territory. Herewith, the basic type of farmlands is tilled area. Its ratio in the structure of farmlands is 60.5% (for the reporting period the ratio of tilled area in the composition of farmlands has increased by 0.1). It also points at rather high level of ploughness of the Territory area (Table 3).

The labor potential of the region as well as the country is one of the most important indicators of the economic development. It is difficult to calculate its basic characteristics in practice (16).

It is possible to single out two characteristics of the labor potential - quantitative and qualitative ones, where the quantitative characteristic is defined by demographic factors and intensity of the labor process, and qualitative characteristic is defined by the ability of labor resources to produce added value and social and economic relations (Trukhachev et al., 2015b).

The estimation of the labor potential is a rather difficult task in terms of methodology and organization. It is necessary to note that today there is no unified universal methodology suitable to solve the whole complex of tasks both in the Russian and foreign statistical practice (Ushvitskiy et al., 2015).

We will consider demographic characteristics of the Stavropol Territory in the quantitative aspect.

The Stavropol Territory holds the third position according to the amount of population in the Southern and North-Caucasian federal districts. Herewith, the Territory has almost twice lower figures as compared to the Krasnodar Territory, and 1.5 times - to the Rostov Region. The share of the Stavropol Territory population is 12% of the Southern and North-Caucasian federal districts population. In the aggregate volume of GRP of the regions of the Southern and North-Caucasian federal districts, the share of the GRP of the Stavropol Territory makes up 10%. According to this indicator, it holds the 4<sup>th</sup> position and is 2.9 times inferior to the Krasnodar Territory, 2.1 times - to the Rostov Region, and 1.6 times - to the Volgograd Region.

The situation on the labor market of the Stavropol Territory has improved as compared to 2009. The implementation of additional measures aimed at decreasing the tension on the labor

**Table 3: Level of using land fund, %**

Indicators	2009	2010	2011	2012	2013	2014
Farmlands in the total land area	87.5	87.5	87.5	87.5	87.5	85.5
Tilled area in farmlands	60.4	60.4	60.4	60.4	60.4	60.5
Crops in tilled area	69.0	69.0	69.1	69.1	69.1	69.2

market allowed not only to maintain the personnel potential of organizations employees but also to reduce the number of unemployed citizens. It was calculated in accordance with the methodology of the International Labor Organization (ILO). As compared to 2009, the number of people who had no job or did not perform any profitable activity but looked for a job and were ready to start working (unemployed people according to the methodology of ILO) decreased by 33.4 thous. people or by 31.0% and made up 74.3 thous. people. It caused a considerable decrease in the total level of unemployment. According to the results of 2014, the level of unemployment calculated according to the methodology of the International Labor Organization was 5.3% of the economically active population (Table 4).

In comparison with 2009 it decreased by 3.4%. It is lower than the indicator put in the estimation of the achievement of strategic goals of the Strategy of Social and Economic Development of the Stavropol Territory up to 2020 and for the Period up to 2025 (6.8%). At the present time the specified indicator of unemployment is on the minimum level for the whole history of observation (since 1993). At the same time the level of total unemployment exceeds the level of the registered unemployment 3 times. It means that a lot of persons of employable age are not represented on the labor market.

Over the recent years in the Territory the tendency of the growth of the population's monetary incomes has maintained. The basic source of income of the majority of employable population is the salary that is more than a half in the structure of incomes of the whole population and has a dominating impact on the level of life. The tempos of growth of real salary in the Stavropol Region outrun the analogous indicator in the Russian Federation and in subjects of the Southern federal district. The average nominal salary for the recent 5 years has increased 1.8 times. Stable tendency of the growth of the payment of labor in the agriculture is observed (Table 5).

The basic problems in the area of labor payment remain as follows: High inter-industrial differentiation of the salary size; arrearage of the level of salary of employees of other sectors of economy;

untimely and incomplete payment of salary; inconsistency of the level of labor payment with the real cost of the labor force and consequently the poverty of the working population; and applying opaque schemes of salary payment for the purpose of tax avoidance.

In the years ahead organizations of the Stavropol Territory will experience a stable demand for qualified labor force and specialists. It is related to the implementation of investment projects, and industrial strategies of development in the Stavropol Territory.

Considering the indicators of the dynamics of basic funds in the Stavropol Territory, it is possible to notice that as a whole in the Territory the cost of the agricultural equipment has increased by 32.6% from 2009 to 2014. However, at the same time the decrease in almost all indicators related to the availability of equipment in agricultural organizations of the Territory is observed (Table 6).

The number of tractors has decreased by 13.7% for the period under analysis: Those without installed digging, ameliorative and other machines - 13.7%, and by 17.9% for with installed digging, ameliorative and other machines (Table 7).

Besides, the decrease in the number of other agricultural equipment is observed: Tractor trailers - by 25.0%, ploughs - by 15.4%,

harrows - by 19.3%, cultivators - by 11.6%, sowing machines - by 13.2%, and mowing machines - by 15.1%, etc.

The negative tendency is also observed in relation to harvesters: The number of harvester-threshers has decreased by 6.6%, the number of corn harvesters - by 46.8%, the number of forage harvesters - by 34.4%, and the number of potato harvesters - by 13.6%. As a whole in the Territory they have amortized more agricultural machines as a result of tear and wear than acquired (Glotova et al., 2014).

Furthermore, it is necessary to consider the availability of generating capacities in the Territory. For 2014 generating capacities made up 5,241 thous. hp. This is 5.6% less than the indicator for 2009. Generating capacities are allocated according to the zones of the Stavropol Territory as follows: The first zone - 13.6% of the general volume of capacities, the second zone - 33.3%, the third zone - 42%, and finally the fourth zone - 10.8%. The decrease in the availability of generating capacities is observed almost in all zones of the Territory: The decrease in the first one was 14.7%, in the second zone it was 11.1%, and in the third one - 1.3%. Only in the fourth zone the generating powers grew by 4.8% (Table 8).

The lowest ratio of generating capacities is observed in the Andropov Region - 0.8% of the Territory indicator. In the Grachevsk

**Table 4: Estimation of the labor and population employment market in the region**

Indicator	2009	2010	2011	2012	2013	2014	2014 in % as to 2009
Number of economically active population, thous. people	1,346.5	1,363.6	1,373.2	1,383.4	1,373.5	1,310.5	97.3
Level of economic activity of population, %	63.5	64.6	65.1	65.1	64.6	46.8	×
Number of employed, thous. people	1,229.1	1,270.0	1,290.8	1,309.2	1,292.9	1,237.5	100.6
Level of employment, %	57.9	59.4	61.2	61.6	60.8	60.8	×
Number of unemployed, thous. people	117.4	93.6	82.4	74.3	76.9	73.0	62.2
Level of unemployment, %	8.7	6.7	6.0	5.4	5.9	5.3	×
Level of official unemployment, %	2.5	2.0	1.8	1.3	1.2	1.1	×

**Table 5: Dynamics of incomes of the territory population**

Indicator	2009	2010	2011	2012	2013	2014	2014 in % as to 2009
Average monetary income of population per head per month, rub.	11,244.5	13,016.1	14,439.9	16,813.0	19,767.5	21,385.5	190.2
Amount of labor payment in the territory, rub. as calculated per one employee	12,646.0	14,408.5	16,241.3	18,469.0	20,667.0	22,597.0	178.7
Agriculture, hunting and forestry, fishery, and fish husbandry	9,229.0	10,742.8	12,712.0	13,321.0	15,903.0	16,235.0	175.9
Minimum subsistence level, rub.	4,793	5,326	5,939	6,033	6,543	6,956	145.0
Gross regional product, mln. rub.	277,251	316,889	383,847	382,500	475,300	501,629	180.9

**Table 6: Material and technical resources of the Stavropol Territory**

Indicators	2009	2010	2011	2012	2013	2014
Number of harvesters per 1,000 ha of seeds (planting) of relevant crops	3	3	3	3	3	3
Number of tractors per 1,000 ha of tilled area	4.4	4.2	4.1	4.0	4.3	4.3
Coefficient of equipment update	1.8	2.2	4.3	2.6	2.7	2.7
Loading of tilled area per one tractor	229	238	245	252	232	234
Park of basic types of equipment	12,527	n/a	n/a	n/a	n/a	n/a
Acquired new equipment	231	266	495	293	n/a	n/a
Seeds (planting) of relevant crops per one harvester	360	344	379	375	386	392
Generating capacities, h.p.	5,551	5,382	5,271	5,291	5,260	5,241
Generating capacities as calculated per one employee, h.p.	69	67	66	68.4	73	79
Generating capacities per 100 ha of the tilled area, h.p.	268	271	242	244	237	236

Region this is 1.1% in the 3<sup>rd</sup> agroclimatic zone. The highest ratio of this indicator is in the Kochubeevsk Region - 17.6%, in the Novoaleksandrovsk Region this is 7.5%, and in the Trunovskiy Region this is 6.4% that are located in the same zone.

In 2014 the structure of generating capacities was as follows: Tractors (including tractors with installed digging, ameliorative and other machines) - 30.0%, harvesters and mechanical vehicles - 19.8%, cars - 25.6%, other mechanical engines - 0.9%, electromotor and electricity-generating equipment - 23.8%, and plough cattle in terms of mechanical force - 0.03%. This tendency is peculiar of almost all period under analysis (Truchachev et al. 2015a).

Considering the provision of cultivation areas with tractors, it is possible to notice that as a whole this indicator is lower than the

Russian level. For the reporting period the number of tractors per 1,000 ha of tilled area in the Stavropol Territory is 4.3 pcs. This is 0.5 pcs less than in 2009 (Table 9).

At the same time the number of aggregates for tractors decreases. It says that more modern and powerful agricultural machines are used. In 2014 the number of harvester threshers per 1,000 ha of sowing grains (excluding corn) was 0.2 pcs. less than in 2009, and sowing of grains (excluding corn) increased by 32 ha per one harvester thresher.

According to Glotova et al., in the South of Russia in the Stavropol Territory the agrarian cluster of the production has been formed. It has all required resources for efficient agricultural production (Truchachev et al. 2015a).

**Table 7: Availability of equipment at agricultural enterprises as on the end of the year (thous. pcs)**

Indicators	2009	2010	2011	2012	2013	2014
Physical tractors	13.9	13.3	12.9	12.5	12.2	12.0
Harvesters						
Harvester-threshers	4.2	4.1	4.1	4.0	4.0	4.0
Corn harvesters-pieces	124	109	93	79	66	68
Potato harvester-pieces	22	20	21	20	20	19
Forage harvesters	0.6	0.5	0.45	0.4	0.4	0.4
Beet harvesters-pieces	123	121	114	109	94	92
Tractor trailers	6.4	6.1	5.5	5.2	4.9	4.8
Ploughs	5.2	5.0	4.7	4.6	4.5	4.4
Harrows	40.0	37.7	35.3	33.5	32.6	32.3
Cultivators	9.5	9.0	9.0	8.7	8.7	8.4
Including combined aggregates	0.4	0.4	0.4	0.4	0.5	0.4
Sowing machines	9.1	8.8	8.5	8.5	8.3	7.9
Including sowing complexes	0.3	0.2	0.4	0.35	0.4	0.4
Mowing machines	1.1	1.0	1.0	1.0	0.9	0.9
Tractor rake-pieces	233	185	173	170	169	164
Baling machines-pieces	676	664	648	649	636	655
Windrowers-pieces	1,013	867	832	797	762	739
Sprinkling, irrigation machines and installations-pieces	810	729	691	612	577	648
Casters of hard fertilizers-pieces	792	806	850	933	926	971
Machines to fill soil with						
Hard organic fertilizers-pieces	170	155	151	130	134	127
Liquid organic fertilizers-pieces	215	213	206	206	196	199
Spraying apparatus and tractor dusters-pieces	1,174	1,210	1,234	1,242	1,232	1,369
Seed treaters-pieces	528	526	533	540	559	574
Milkers and aggregates-total, pieces	448	404	369	349	323	301
Including milk ducts	177	155	148	139	130	130

**Table 8: Availability and structure of power capacities (thous. hp)**

Indicators	2009	2010	2011	2012	2013	2014
Total tractors engine horsepower rating (including tractors with installed digging, ameliorative and other machines)	1,676	1,625	1,598	1,583	1,567	1,570
Total engine horsepower rating of harvesters and mechanical vehicles	988	1,012	975	996	1,006	1,035
Total engine horsepower rating of cars	1,525	1,447	1,413	1,424	1,382	1,400
Total engine horsepower rating of other mechanical engines	68	55	52	49	48	47
Total engine horsepower rating of electromotor and electricity-generating equipment	1,291	1,241	1,230	1,238	1,256	1,246
Plough cattle in terms of mechanical force	2	2	2	2	1	1
Total generating capacities	5,551	5,382	5,271	5,291	5,260	5,241
Ratio of capacities of engines in the total amount of generating capacities, %						
Tractors engines	30.2	30.2	30.3	29.9	29.8	30.0
Harvesters and mechanical machines engines	17.8	18.8	18.5	18.8	19.1	19.8
Cars	27.5	26.9	26.8	26.9	26.3	25.6
Other mechanical engines	1.2	1.0	1.0	0.9	0.9	0.9
Electromotor and electricity-generating equipment	23.3	23.1	23.3	23.4	23.9	23.8
Plough cattle	0.04	0.04	0.03	0.03	0.03	0.03

Considering the dynamics of basic economic indicators of the agricultural production in the Stavropol Territory, it is seen that for the analyzed period almost all indicators related to the efficiency of the agrarian production have increased (Table 10). The income has increased 2.1 times, the expenditures have increased by 65.1%, and the profit has increased 4.0 times. In 2014 the economic return made up 117%. The level of profitability has increased by 14.0%, and the profitability taking into account donations has increased by 13%. This is a positive tendency (Mazloev and Lysenko, 2012).

### 3. DISCUSSION

The basis of stable development in the agroindustrial complex is the resource potential whose efficient use contributes to the increase in the efficiency of industries and sub-complexes of the regional agriculture. The resource potential in the context of this research includes material and technical basis and human resources (Mazloev and Ozerova, 2015). Material resources in the agricultural business are represented by basic productive assets, including land and material floating assets. Labor resources of the agroindustrial complex are characterized by the number and quality of the employable population. The resource potential of the regional economy is estimated by the system of indicators that as a whole characterize the agricultural capacity in the agriculture of the region. Herewith, the peculiarities of the agricultural business stipulate the necessity to supplement the market mechanism with managing impact of the state. Investments in the agricultural area

have a determining impact on the parameters of the agricultural capacity whose feature includes the participation of the agricultural business in the creation of the GDP of the country (Alexandratos, 1995).

As Truchachev (2015a) states that the most perspective area of the increase in the efficiency of functioning of the agroindustrial complex of the Stavropol Territory is the process of updating objects of the productive area according to the principles of reproduction. We understand them in the system of the agroindustrial complex as a continuous process of updating basic production resources taking into account rational use of morally and physically outdated means of production considered as a reserve to decrease expenditures of the economic entity for acquiring new means of production. The process of production focuses on the stimulation of updating basic production resources, ecologization of production and area of treating wastes of the production and commercial activity, activating the activity of the area related to manufacturing production means, increase in the competitiveness of the manufactured products, as well as development of the tertiary entrepreneurial sector involved in the area of collecting and utilizing objects of production and processing in the agriculture.

Mazloev and Ktsoev (2014) states that systems of reproduction are revealed under the availability of immanent characteristics and principles of functioning:

**Table 9: Provision of agricultural enterprises of the territory with tractors and harvesters**

Indicators	2009	2010	2011	2012	2013	2014	2014 as to 2009 (+;-)
Tractors per 1,000 ha of tilled area, pieces	4.8	4.7	4.1	4.0	4.3	4.3	-0.5
Tilled area per 1 tractor, ha	207	213	245	252	232	234	27
Per 100 tractors, pieces							
Ploughs	41	42	41	41	41	40	-1
Seeders	71	71	73	76	75	73	2
Mowing machines	9	9	9	9	9	9	-
Cultivators	76	76	77	77	79	77	1
Harrowes	320	315	305	297	296	299	-21
Rakes	2	2	1	2	2	2	-
Harvesters per 1,000 ha of sowing relevant crops, pcs.							
Harvester threshers	2.8	2.9	2.6	2.7	2.6	2.6	-0.2
Corn harvesters	2.3	2.0	1.0	1.0	1.0	1.0	-1.3
Sowing relevant crops per 1 harvester, ha							
Harvester threshers	360	344	379	375	386	392	32
Corn harvesters	438	496	764	1,522	1,901	1,915	1,477

**Table 10: Dynamics of basic economic indicators of agricultural production of the Stavropol Territory**

Indicator	2009	2010	2011	2012	2013	2014	2014 as to 2009	
							Mln. rub.	%
Expenses, mln. rub.	39,900.4	43,156.1	52,759.8	58,430.7	64,996.1	65,881.0	25,980.6	165.11
Income, mln. rub.	39,845.5	46,677.0	56,775.1	59,142.7	63,510.5	83,948.0	44,102.5	2.1 times
Besides, subsidies from budgets of all levels, mln. rub.	2,885.6	3,164.1	3,115.5	3,671.8	4,488.5	4,025.6	1,140.0	139.51
Income with subsidies from budgets, mln. Rub.	42,731.2	49,841.0	59,890.6	62,814.5	67,999.0	87,973.6	45,242.4	2.1 times
Profit, mln. rub.	4,498.2	7,723.0	10,952.7	10,866.8	7,851.4	18,067.0	13,568.8	4.0 times
Cost recovery, %	100	108	108	101	98	117	-	-
Profitability without taking into account subsidies, %	13	20	24	23	12	27	-	-
Profitability taking into account subsidies, %	21	28	31	30	19	34	-	-

1. The offered system is a correction and supplementing tool of the state agrarian policy that entirely focuses on increasing technical and technological infrastructure of the agroindustrial complex.
2. Functioning of the reproduction system ensures additional benefits from rational use of the dropout means of production for all subjects of the agroindustrial complex (state as macro regulator, subjects of the agricultural production - as users, population - as consumers of the end product).
3. The system of reproduction must take into account the complex of incoming conditions that have an impact on the parameters of production processes such as general level of capital ratio, tempos of technical and technological regeneration of the area compared with individual parametric peculiarities of the distinguished components of the economic efficiency of economic entities functioning (personnel, production, ecological, financial, and social efficiency).
4. The system of reproduction must focus on updating only those production capacities that perform basic technological processes in the production area that can ensure the biggest growth of indicators of the efficiency of production and technological process, i.e., have specific selectiveness and achieve maximum economy of resources and their repeated use.
5. The offered system is characterized not only by initiating, implementing and controlling over the processes of technological update in the area of agrarian production, but it also includes rational events and actions on utilizing and partial processing of means of production and lateral discharges. As a whole it is included in the paradigm of the balanced ecologically focused development of areas and complexes of the agroindustrial complex.
6. The strategic goal of the reproduction system is to increase efficiency of functioning of the agroindustrial complex subjects that finally will allow to increase the level of the rural population's life and competitiveness of this area under conditions of Russian entering the World Trade Organization.

#### 4. CONCLUSION

Today it is generally acknowledged that the search for reserves to increase economic efficiency of functioning of the agroindustrial complex subjects lies within the area of rational use and reproduction of financial capital, land resources, production means, and human potential. The results of the research show low efficiency of using reserves in the regional economy under

conditions of resources deficit. Thus, in the Stavropol Territory they use only 70% of farmlands (Table 11).

It is possible to single out three basic areas in the structure of resources of financing reproduction processes in the agroindustrial complex: State support means (subsidies, subventions, budgetary assignments), private capital, above all the bank one, and means of the enterprise itself. We will not stop at the mechanisms of using financial means in reproduction processes in details. We will only note that under the modern conditions the issues related to research and methodological explanation of approaches to singling out subjects of the production area that to a maximum degree use the receipt of knowledge, innovations and technologies as additional and often the most important resources of economic growth become more and more urgent. Their identification as well as researches related to estimating their contribution in the provision of production and technological stability can reveal the required reserves whose use will act as an additional factor of the increase in the efficiency of the production activity.

Composing the matrix to compare the results of traditional and expanded (based on testing) methodologies to estimate the efficiency of functioning of the agroindustrial complex can be used as an applied tool to solve the set task. This matrix allows to single out synthetic types of enterprises and to explain essential peculiarities of the applied policy of the resources economy and reproduction that correspond to them. The offered system of agrarian reproduction of resources is characterized by a high level of efficiency for every subject of the agrarian interrelations. It is difficult to analyze cost parameters of the represented benefits and losses, because in every subject it is possible to observe different level of need in updating technical and technological area, disturbance of market conditions of the agro technical area, etc. At the same time the offered system can implement its practical potential under due coordination on the federal level, rational performance on the regional level, and countrywide participation of representatives of the municipal power.

The research of agricultural resources of the Stavropol Territory witnesses about the high potential of the development of the regional agricultural business. The growth of volumes and efficiency of agricultural production will be achieved subject to maintaining and increasing the fertility of soils, achievement of the level of production of basic types of high quality food that is sufficient for full self-provision of the population of the region and export, development of maximum processing of agricultural products by using innovational technologies, and development

**Table 11: Level of using resources in agriculture of the Stavropol Territory, %**

Indicators	2010	2011	2012	2013	2014
Farmlands in total land area	87.48	87.48	87.47	87.47	87.47
Tilled area in farmlands	60.38	60.38	60.39	60.41	60.42
Seeds in tilled area	69.02	69.02	69.04	69.06	69.07
Used generating capacities of processing enterprises	42.1	37.8	39.2	41.1	42.8
Used generating capacities of elevators	34.1	41.4	35.4	36.4	33.2
Use of agricultural equipment in calendar year	21.7	23.4	19.7	28.4	29.7
Employees of agricultural organizations in relation to the working-age population in villages	14.3	14.1	13.1	12.9	12.7

of market and material and technical infrastructure of the agroindustrial complex of the Territory.

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