

# Performance and development trends of small businesses in the agro-industrial complex

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## Abstract

The article reviews key economic indicators of the development of small businesses in Russian agro-industrial complex (in terms of farm enterprises) over the period of their establishment and development up to the present day. The over-time contribution of farm enterprises to the total output of agricultural produce is shown; their work performance is analyzed. The article provides the performance review as well as the role of small businesses in the agro-industrial complex of the Saratov Oblast. It is demonstrated that the increase of state support for small businesses is required in the modern context. Research results of the performance of farm enterprises in the Saratov Oblast are presented. It is concluded that there is a required farm enlargement in order to increase the competitive ability and performance of small businesses. The article also provides survey results of rural population of the Saratov Oblast in order to determine the concerns of job loss in the mid-term.

**Keywords:** agricultural production, farm enterprises, small businesses, state support, infrastructure, effectiveness, agro-industrial complex.

## Introduction

Small businesses are currently playing an important role in the development of Russian agro-industrial complex. One of the key features of such businesses is their complete economic independence, excluding any outside interference in their

production activities. It is commonly known that the process of establishment and development of farm enterprises in Russia consisted of several stages. The first stage began with the adoption of the law "On peasant (farm) enterprise" (The law of RSFSR, 1990) and several other regulations, which created a legal platform for development. By the end of 1991 there were 62 thousands farm enterprises organized across the country. The beginning of the second stage is related to the adoption of the Russian Federation Presidential Decree "On urgent measures for implementation of land reform" (1991) and the Russian Federation Government Decree "On the procedure of kolkhoz and sovkhos reorganization" (1991), which granted every worker the right to withdraw from an enterprise with his or her land and property share in order to create their own farm enterprises. The third stage began in early autumn 1993, when easy-term loans for farmers were cancelled, thus marking the decay of farm enterprises. The number of farm enterprises in Russia peaked in 1992, when 134 thousands of them were organized. The total amount of such enterprises reached 280 thousand in 1995 with the total land area of 1.2 million ha and the average size of one enterprise of 43 ha. In the upcoming years the number of farm enterprises reduced, while the total land area and the average size of a land parcel in terms of an enterprise increased. According to the Russian Federal State Statistics Service (Agriculture, hunt and forestry in Russia, 2013), in 2011 peasant and farm enterprises used 23.2 million ha of farmland or 12.2% of total land with croplands amounting to 16.5 million ha. It should be noted

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that over the years of their existence farm enterprises in Russia have been dynamically growing and currently are producing 8.9% of the total agricultural output. Compared with the figures of 2000, the output of farm enterprises has grown 4.8 times.

In order to specify key economic indicators of the development of farm enterprises in Russian Federation it should be noted that over a period of 2007-2011 their number across the country reduced by 55.2 thousands or 31.7%; however, the average size of a land parcel in terms of an enterprise increased from 103 ha to 150 ha or by 45.6%. The gross output of farm enterprises in terms of value increased from 156.5 billion rubles to 306.6 billion rubles, while its share in the total volume increased from 7% in 2007 to 8.9% in 2011. The most fast-paced increase appears in crop production which takes up 79% of the gross output or 242 billion rubles in terms of value. Work performance per average worker over the same period has increased from 923 thousand rubles to 1445 thousand rubles in 2010 and 2106 thousand rubles in 2011. The development of farm enterprises leads to the process of concentration of production, which is related not only to the increase of land area, but also to the increase of production volume in large-scale enterprises.

The analysis of production activity of farm enterprises over the past years compared to the period of 1991-1995 indicates that with the average size of a farm enterprise having increased by 2.5 times, overall production of grain has increased by 6 times, sunflowers – by 7 times, potatoes – by 4.8 times, vegetables – almost by 14 times, livestock – by 2.6 times.

Based on the number of farmer enterprises, their average size and overall production of core products the Saratov Oblast occupies one of the leading places in the Volga Federal District. With the average size of a land parcel in terms of an enterprise in the Volga Federal District being 112 ha, in the Saratov Oblast this figure amounts to 284 ha. As of January 1, 2011, there were 7229 officially registered farm enterprises in the Saratov Oblast with the assigned land area of more than 2 million ha, including 1.8 million ha of croplands, of which 34.2 thousands ha were irrigated. However, there came to be a significant and not always justified variation in the size of a land parcel in terms of an enterprise. With the average size of a land parcel in terms of an enterprise in the Saratov Oblast being 284 ha, on a micro level this figure varies from 179 ha in the Northern Left-

bank to 381 ha in the South-Eastern microzone. The smallest size of a land parcel is accounted for by the Southern Right-bank microzone, where the production is focused on growing vegetables, potatoes and gourds.

The most significant variations are evidenced in particular microzones with specific specialization in farm production. For example, in the Central Left-bank microzone the average size of a land parcel per enterprise amounts to 1520 ha in the Soviet region and 1115 ha in the Krasnokutsk region, which is higher than the average figures by 3.3 and 4.5 times respectively. A similar trend is evident in other microzones as well. This circumstance demanded a necessary establishment of optimum size of enterprises.

An enterprise with the optimum size should be considered the one, which is using land, facilities and workforce in the most efficient way and thus produces maximum yield at a minimum expenditure of effort (Kuznetsov et al., 2012, P.70). It is commonly known that the size of an enterprise is determined by many factors (volume of gross and commercial output, number of employees, livestock population, etc.). But the most important factor is the size of land area, as it affects output volume, investment costs, shipping expenses, manageability, etc. Various enterprise parameters, such as yearly output, workforce requirements, occupational level of workers, etc., are also calculated based on the size of land area (Khramushin et al., 1996).

## Methodology

In our opinion, one of the efficient ways allowing to optimize manufacturing parameters of agricultural goods producers, is mathematical-economic modeling. Solving problems by means of economic and mathematical modeling allows to optimize parameters at minimum expense and with due regard to the most efficient use of available resources. This model includes several blocks dealing with optimal allocation of cultivated areas, naked fallow, workforce, fixed and circulating assets, sales, etc. According to our reckoning, it would be appropriate to use the following figures as optimality criteria: maximum commercial output, profit, net income, gross output or minimal production expenses, product costs. As the result of solving the mathematical-economic model the following size of land areas were established for enterprises in the

Saratov Oblast: 320–350 ha of land for the ones in the Right-bank and 380–450 ha of land in the Left-bank. The proposed size reflects performance capabilities of agricultural goods producers, their financial condition as well as available facilities and resources. This size would allow to get maximum profit for the investigated enterprises, which form the core of small agribusinesses in the Saratov Oblast. However, it should be emphasized that each enterprise has its distinctions, while our suggested parameters are the most optimal in terms of efficiency.

Specified size is largely conditioned upon the existing structure of cultivated areas, where the leading place is taken by grain and technical crops. According to our calculations, the highest percentage of grain crops is in the left-bank steppe regions of the Saratov Oblast reaching 67.8–75.5%. Cultivation of technical crops is mostly focused in the right-bank microzones, where, apart from sunflowers, sugar beets are cultivated in the Western microzone reaching 2.7%. Most of the cropland in the left-bank regions is used to grow fodder crops, especially corn for green fodder and silage, as well as perennial grasses. The exist-

ing structure of cultivated areas is largely conditioned upon the lack of scientifically-based crop rotation. In fact, only three–four crops are rotated, thus leading to over-saturation of cropland with grain and sunflower. Such disregard for crop rotation in accordance with the preceding crops results in the degradation of structure of the ploughed layer, soil fertility and the efficiency of land resource use. Farm enterprises are extremely ill-equipped with machinery, which for the most part is well worn-out. In 2010 the coefficient of renovation amounted to 1.9% for tractors, 1.4% for combine harvesters, 0.8% for ploughs, 2% for seed drills and 2.4% for cultivators. The level of availability of buildings is only 18%, while 60% of enterprises have less 50% of the required facilities.

## Results

The results of the analysis of production activity of 430 farm enterprises in the Saratov Oblast suggest the advantage of large enterprises over small ones, considering higher yield of crops, livestock, higher level of profitability and overall performance (Table 1).

**Table 1. The impact of size on performance of farm enterprises in the Saratov Oblast**

Figures	Groups of enterprises in terms of land area, ha		
	under 150	151–1500	over 1500
Number of enterprises in a group	285	135	10
Average annual number of workers	3	6	28
Cropland assigned to one worker, ha	50	72	96
Average yield of crops, dt/ha	10	14	21
Average annual milk yield, l/head	1912	2525	3210
Average daily weight gain of cattle, g	421	535	620
Money expenses, RUB/ha	3850	4250	5120
Percentage of subsidies in revenues, %	9,3	12,8	21,8
Sales proceeds, thousand RUB	2200	6850	15620
Level of profitability, %	6,3	9,4	29,5

\*Calculated according to the official data as of 2011: the official website of the Russian Federal State Statistics Service. – Access mode: <http://www.gks.ru>

With the increase of land area there is also a significant increase in the average yield of crops from 10 dt/ha to 21 dt/ha or by more than 2 times, the average daily weight gain of cattle from 421 g to 620 g or by 47% and sales proceeds – by 2.1 times. The level of profitability increases from 6.3% to 29.5%. Such growth occurs mostly due to the possible increase of

money expenses as well as the development of organization and technology of production.

Farm enterprises in the Saratov Oblast show a high percentage of crop production, whereas the proportion of animal products is rather low (Table 2).

Based on the results of 2011 private farm holdings have produced the major portion of potatoes

(95.7%), field vegetables (48,4%), fruits and berries (92.9%). Over the specified year farm enterprises, including sole proprietors, have produced the following portion of the total volume: 47% of grain, 45.7%

of sunflowers and 67% of sugar beets. The relative share of animal products is much lower: only 7.2% of milk, 2.8% of eggs and 7% of livestock (carcass-weight based).

**Table 2. Proportion of farm enterprises and sole proprietors in the production of basic agricultural goods in the Saratov Oblast, %**

Kinds of products	2000	2009	2010	2011
Grain	22,8	47,9	39,7	47,0
Sunflower seeds	24,1	49,8	42,0	45,7
Sugar beet (industrial)	27,0	83,3	63,3	67,0
Potatoes	0,1	1,8	4,6	4,8
Field vegetables	4,7	13,2	31,0	48,4
Livestock (carcass-weight based)	8,0	6,1	6,9	7,0
Milk	6,5	7,7	7,0	7,2
Eggs	1,5	3,2	2,7	2,8

Over the years of the development of Russian agro-industrial complex the role of farm enterprises and sole proprietors, who independently produce and sell agricultural products, has undergone significant changes. Since the development and implementation of the national priority project “Development of the agro-industrial complex” small businesses in Russia are considered one of the principal directions in the national agricultural policy. Over the past years small businesses have also attracted increasing attention from the government as well as municipal authorities. The State program for the development of agriculture and regulation of agricultural markets for 2008-2012, which has recently been transformed into the State program for the development of agriculture and regulation of agricultural markets for 2013-2020, was introduced in 2008 in order to further the development of farm enterprises and other small businesses in the agro-industrial complex as well as to increase measures aimed at the development of agricultural production, revival of rural areas and integration of all forms of government support. Within the frame of this program there is a subprogram called “Support of small businesses”, which is designated for furthering the development of small businesses, including the following measures: the support of emergent farmers, the development of family cattle farms based on farm enterprises, government financing programs for small businesses, registration

of land property rights for farm enterprises.

The development of government support on federal, regional and municipal level is currently among the high-priority measures aimed at the improvement of the performance of small businesses. Despite the fact that the funding of farm enterprises has grown from 2.4 billion RUB in 2006 to 6.1 billion RUB in 2009 or by 2.5 times, in our opinion, it is still insufficient. The proportion of farm enterprises in the total amount of subsidies on federal and regional level is no more than 5-6%. According to the Federal law “On development of agriculture” (2006), small businesses enjoy equal rights to large-scale manufacturers. But, at the matter of fact, this principle is not complied with. For example, per one ruble of the gross output in 2009 farm enterprises received 0.9 kop, agricultural organizations – 7 kop, and private farms – 0.3 kop of federal aid. Insufficient financial means for purchasing fertilizers, crop and animal protection agents together with poor technological infrastructure make it impossible to ensure the necessary level of performance of small businesses. The conducted research of organizations of the agro-industrial complex in the Saratov Oblast indicates that a major share of federal aid goes to large-scale agricultural organizations with the total expenditures based on certain types of products (milk, cattle meat) reaching 20-25%.

Over the last years agricultural goods producers in Russia have received government support in

terms of green box subsidies, which involve the provision of funds for crop farming on a per hectare basis. Green box subsidies should act as one of the incentives for production and compensate production expenses. Such subsidies conform to the conditions of Russia's membership in the WTO and belong under green box measures. However, according to Doctor of Economics, Professor V.Y. Uzun, Russian policy of support for agriculture has two important features:

a) according to the OECD statistics, the combined support (support for producers, infrastructure and consumers) of agricultural goods producers amounts to 84.8% (2010). As a comparison, in the same year the combined support of agricultural goods producers in the USA amounted to 19.1%. The rest of the funds were spent on common support measures and the support for food consumers;

b) the support of agricultural goods producers in Russia has a specific character in terms of products (resources): 95.8% of total support is accounted for by the support of market prices of specific products as well as subsidies on resources (2010). Green box subsidies on land areas, livestock population, etc. amounted to 66.1% of total aid in the EU and 2.1% in Russia. The volume of green box subsidies on crop production provided from the federal budget in 2014 in the Saratov Oblast will amount to 607.17 million RUB or 4.2% of the total volume of subsidies in Russia.

In our opinion, the amount of the allocated funds is still extremely low and thus has no significant impact on the level of profitability, while the existing procedure of government funding of small businesses is deficient. In order to increase the effectiveness of government support it would be appropriate to take several measures, including the adoption of direct support in purchasing machinery, livestock, seeds and fertilizers, differentiated allocation of funds, etc. With due regard for particular conditions, government support should be provided for enterprises which produce marketable products, while agricultural regulatory agencies should supervise the target use of subsidies provided from the budget. Academician I. Ushachev (2011) reasonably suggested government support of small businesses through cooperatives, which could assume the duties of preparing applications for subsidies and submitting general documentation to local regulatory agencies. It makes sense to support processing and supply and marketing cooperatives by providing up to 50% of the inputs for the cre-

ation and enhancement of the material and technical basis in equal proportion from the federal and regional budgets.

In addition, with the provision of government support to small businesses it is necessary to increase the effectiveness of financial and credit support. With this end in view, it seems appropriate to alter the procedure of giving farm loans directly to enterprises. As for the prime lending rate, it should be altered from the refinancing rate of the Central Bank of the Russian Federation to the average bank interest rate based on the type of the loan, and thus gradually lowered from 16-18% to 8-10%.

In our opinion, one of the reserves for lowering the interest rate for small businesses in the agro-industrial complex may be JSC Russian Agricultural Bank, the authorized capital stock of which is fully composed of government funds. This option is also confirmed by bank lending experts. The extension of lowered interest rates may be based on credit history as well as additional sources of income (real property, vehicles, etc.) In order to lower the interest rates of loans for the agro-industrial complex it is necessary to develop the insurance system, as it will mitigate the risks of loan defaults, yield losses, etc. In addition, it is necessary to create and develop a specialized insurance company, perhaps following the example of the VTB Group, which includes VTB insurance company. Targeted support of small businesses in the agro-industrial complex coming from the banking sector based on lowered interest rates will allow significantly reducing financial load on this segment of agribusiness and increasing its performance.

Government support for sales is currently of utmost importance for small businesses. With this end in view, it is necessary to provide the conditions for guaranteed sales based on production quotas and minimum purchase prices, which would ensure the profitability of production. The extensive development of production, marketing and credit cooperatives is also important for small businesses in the agro-industrial complex. This will provide farmers with an opportunity to ensure a guaranteed sales channel and accelerate the development of market infrastructure, which, in return, will improve their performance.

The development and enhancement of technical infrastructure is of much importance for the effective production in small businesses. In this context great significance is attributed to sustainable provision of new machinery, attachments, spare



parts, as well as breeding cattle and advanced technology. It is necessary to stimulate domestic production of drawbar category 0.2 and 0.6 tractors in order to reduce their production costs. It is also required to develop construction projects of small cattle farms with a high level of mechanization of production processes.

Due to the fact that the left-bank regions of the Saratov Oblast are located in the area of risk farming it is necessary to develop irrigation farming through a network of irrigation channels, pumping stations, ponds and reservoirs. The creation of road network, communication objects, energy and water supply facilities as well as storage facilities is of much importance for the successful performance of small businesses. It is also necessary to adjust the prices on fuel products, electricity and mineral fertilizers. The effective performance of small business in the modern context is largely related to the development of information and consultancy services. The expansion of network of such service points with highly-qualified personnel will allow to cut expenses and provide specific advice on cultivation of new crop species, resource-saving technologies, feed recipes, etc. As a result this will offer an opportunity to achieve better results and increase performance.

**Table 3. The results of inquiry of rural population of the Saratov Oblast, %**

Years	Are you afraid of losing your job?		
	yes	no	don't know
2005	61,8	22,5	15,7
2006	57,2	24,1	18,7
2007	51,4	33,9	14,7
2008	55,4	28,0	16,6
2009	66,1	20,5	13,4
2010	57,6	25,3	17,1
2011	44,6	37,3	18,1

\*Calculated based on the results of the conducted research

The effective performance of small businesses in the agro-industrial complex is possible only with an appropriate social infrastructure. This suggests the availability of the social overhead capital, including housing and utility services, medical facilities, schools, cultural and educational institutions,

stores, food courts, domestic services, etc. Along with individual construction of houses that meet modern requirements it is necessary to construct roads, schools, medical centers, kindergartens and available housing for young agricultural professionals. The retention of highly-qualified workforce in rural areas is impossible without solving the specified problems, including the increase of income of rural population, which is two times lower than of urban residents. In addition, according to the results of the survey (Table 3), the majority of respondents (44.6–66.1%) are afraid of losing their jobs. Considering the fact there were those who did not give a definite answer, these figures may be even higher. All this has a negative impact on the employment of rural population, thus, taken with the lack of funding, leading to contraction of the volume of agricultural products as well as growing rural-to-urban migration. That is why a cautious and well-targeted economic policy is so important in the context of government support of agricultural goods producers, especially small businesses.

## Conclusions

Finally, it should be concluded that the implementation of the specified range of measures will allow, in our opinion, to switch to a new path of development, increase level of profitability in the agro-industrial complex as well as the competitive ability and performance of small businesses in the modern context. It should be noted that the process of further development of small businesses in the agro-industrial complex becomes ever more focused, which will demand the development of scientifically-based legal framework for optimizing the size of such enterprises, implementing new machinery and production technologies and improving the economic mechanism of production.

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