Efficiency of regional agriculture state support

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Abstract. The study analyzed data on state support for agricultural production in the Samara region. The regional level is the main source of budgetary funding for the agro-industrial complex. The Samara region is a pilot region in the research field into the results impact effectiveness of support measures on the agricultural organizations activities. The study purpose is to substantiate the need to improve state support in agriculture in the Samara region. It is necessary to solve the following tasks: to analyze the experience of state regulation in the Samara region agro-industrial complex; to classify the existing directions of state support for agriculture; to substantiate the need to correct the existing approach when improving state support for agricultural production. As a result of the consistent policy implementation in the field of agro-industrial complex supporting, agricultural production in the Samara region was able to become quite effective. The twofold excess of taxes in 2019 over the amount of support indicates that agricultural producers were able to switch to expanded reproduction using their resources. If the current situation persists in the long term, then the state role will be reduced to stimulating extremely promising directions for the region's agro-industrial complex development.

1. Introduction

State support for agricultural production in the Russian Federation occupies a significant place in budget expenditures [1-5]. Currently, the substantiation of significant financial investments in this area is the Food Security Doctrine, adopted in 2020 [6, 7]. Based on its provisions, most of the agricultural products consumed in Russia should be of domestic origin. In the context of risky farming, a high level of subsidies for food of foreign origin, the state is forced to support agriculture to maintain competitiveness at the required level [8-11].

Livestock is one of the main branches of agricultural production. At the same time, it was on livestock production that the decline of the nineties and early 2000s was most strongly affected [12-15]. In the conditions of the Samara region, there is a significant reduction in the number of all types of farm animals in comparison with the Soviet period. If in crop production the self-sufficiency of the region is more than 100%, in animal husbandry it is about 50%. Therefore, the role of incentive measures on the part of the state is increasing [16-21].
Since the beginning of the 90s, crop production has been the main income-generating industry in the region's agriculture. Significant export potential, the possibility of selling outside the region, the presence of large producers allows to reduce the speculative price pressure from large processing enterprises in the region, which is typical for the Samara animal husbandry. As a result, the industry has financial opportunities for expanded reproduction, despite the difficult climatic conditions (the territory of the region is located in the zone of risky farming) [22-27].

2. Methodology
The study analyzed data on state support for agricultural production in the Samara region. In Russian conditions, the regional level is the main source of budgetary funding for the agro-industrial complex. In the conditions of the budget surplus of the Samara region, the experience of the region in the use of various instruments of state support is of certain interest. The Samara region is a pilot region in the field of research into the effectiveness of the impact of the results of support measures on the activities of agricultural organizations.

The purpose of the study is to substantiate the need to improve state support in agriculture in the Samara region. At the same time, it is necessary to solve the following tasks:

- to analyze the experience of state regulation in the agro-industrial complex of the Samara region;
- to classify the existing directions of state support for agriculture;
- to substantiate the need to correct the existing approach when improving state support for agricultural production.

3. Discussion and results
Livestock is one of the main branches of agricultural production. At the same time, it was on livestock production that the decline of the nineties and early 2000s was most strongly affected [28-31]. In the conditions of the Samara region, there is a significant reduction in the number of all types of farm animals in comparison with the Soviet period. If in crop production the self-sufficiency of the region is more than 100%, in animal husbandry it is about 50%. Therefore, the role of incentive measures on the part of the state is increasing [32-36].

In the region, there is a decrease in state support for agriculture. If in 2016-2017 the amount of financing of agricultural production reached 6 billion rubles, then at present it is about 4 billion rubles. All articles of state support were cut, including for animal husbandry [37-41]. Currently, the size of budget payments is about 1 billion rubles (table 1).

Table 1. Amounts of financing in the areas of state support, million rubles.

| Indicator                                      | 2018          | 2019          |
|------------------------------------------------|---------------|---------------|
|                                                 | regional budget | federal budget | total  | regional budget | federal budget | total  |
| Subsidies for the development of beef farming  | 43.06         | 79.96         | 123.02 | 36.19           | 58.13           | 94.32  |
| Subsidies to support certain areas of animal husbandry | 74.13         | -             | 74.13  | 96.44           | -               | 96.44  |
| Feed subsidies                                 | -             | -             | -      | 89.93           | -               | 89.93  |
| Livestock development subsidies                | 106.74        | 142.91        | 249.65 | 70.77           | 131.44          | 202.21 |
| Insurance premium subsidies                    | 1.78          | 3.31          | 5.09   | 6.22            | 3.33            | 9.55   |
Subsidies for increasing productivity in dairy farming: 179.48, 71.39, 250.87, 202.15, 71.49, 273.64
Subventions to increase productivity in dairy farming: 322.46, -322.46, 352.57, -352.57
Total: 727.65, 297.57, 1025.22, 854.27, 264.39, 1118.66

As can be seen from the data in the table, the bulk of funding is provided by the regional budget (70.9% in 2018, 76.4% in 2019). The largest share is taken by support aimed at increasing productivity in dairy cattle breeding (in total, more than 50% of the allocated funds).

**Table 2.** Results of the implementation of measures of state support for animal husbandry.

| Indicator                                                                 | 2018   | 2019   | 2019 to 2018, % |
|--------------------------------------------------------------------------|--------|--------|-----------------|
| The number of beef cows and crossbred beef cows in agricultural organizations and peasant farms, thousand heads | 24.2   | 25.0   | 103             |
| Production of beef and veal in live weight in agricultural organizations and peasant farms, thousand tons | 11.9   | 14.8   | 124             |
| Milk herd productivity in agricultural organizations, kg | 5567   | 5920   | 106             |
| Share of pedigree livestock in the total livestock in agricultural organizations and peasant farms,% | 9.9    | 10.6   | +0.7            |
| The share of the insured livestock of farm animals in the total livestock,% | 9.22   | 19.36  | +10.14          |

Based on the data in table 2, it can be seen that as a result of government support measures, the indicators of the development of livestock farming in the region are increasing. For example, there is an increase in the number of meat animals. For a long time, there was no specialized meat herd in the region, and only in the last 15-20 years the prerequisites for its appearance have been created. There is an increase in the productivity of dairy cattle (by 106%), which is associated, among other things, with an increase in the proportion of breeding animals with high genetic potential.

**Table 3.** Performance indicators of agricultural organizations - recipients of subsidies for increasing productivity in dairy farming.*

| Indicator                                                                 | 2018   | 2019   | 2019 to 2018, % |
|--------------------------------------------------------------------------|--------|--------|-----------------|
| Share of milk production by recipients of subsidies in the total volume produced by agricultural organizations of the Samara region,% | 51.0   | 54.0   | +3.0            |
| Milk production by recipients of this subsidy, thousand tons             | 73.1   | 78.0   | 107             |
| Livestock of dairy cows, thous.                                          | 9.7    | 10.1   | 104             |
| Average annual productivity of dairy cows, kg                           | 7521   | 7748   | 103             |

* - the recipients of this type of state support are 17 agricultural organizations with a livestock of dairy cows with a productivity of 6000 kg of milk and above.
Special attention from the leadership of the region is paid to specialized enterprises with high production rates (table 3). In dairy cattle breeding, a conditional “pool” of 17 enterprises has been formed, with a productivity of more than 6,000 kg of milk per cow. They receive about a quarter of all funding for the development of livestock in the region. This allows increasing both productivity (on average up to 7748 kg of milk in 2019) and the share in total milk production (up to 54%).

The growth of insurance coverage for animals is increasing in the region. Their share increased to 19.36%. Despite the shortcomings of the existing insurance methodology, enterprises are forced to do this due to the deterioration of the epizootic situation in the region (ASF, rabies, brucellosis, etc.).

Despite the growth in livestock production in agricultural organizations and peasant farms, the volume of production in the region practically does not increase. Due to these sources, it is not possible to fully compensate for the decline in production in the private household plots sector. Despite the system of subsidies, support for this type of agricultural producers is significantly less compared to other forms of agricultural production. Without equalizing the conditions of state support, it is impossible to reduce the reduction in livestock in private household plots, in the volume of products produced, and to reduce the number of complete abandonment of animals.

At present, the main directions of state policy in the field of supporting crop production are aimed not so much at maintaining the profitability of agricultural producers, as at solving particular problems related to stimulating the development of priority technological solutions and meeting the requirements of the World Trade Organization. Among the main measures of state regulation, one can name: unrelated support (the share is up to 65.8% in 2018 of the sum of all subsidies in crop production); a subsidy for the purchase of elite seeds (up to 27.8% in 2019); compensation for insurance premiums under contracts concluded in the field of crop production (up to 17.7% in 2019). In total, for these three areas in 2018-2019, more than 90% of all subsidies paid for the development of plant growing industries were allocated (table 4).

### Table 4. State support for crop production (by directions).

| Indicator                                                                 | 2018 regional budget | 2018 federal budget | 2018 total | 2019 regional budget | 2019 federal budget | 2019 total |
|---------------------------------------------------------------------------|----------------------|---------------------|------------|----------------------|---------------------|------------|
| Reimbursement of costs in terms of the costs of laying and caring for perennial plantations | 16.6                 | 30.8                | 47.4       | 16.2                 | 30.1                | 46.3       |
| Subsidies for the purchase of elite seeds                                 | 67.0                 | 124.5               | 191.5      | 102.2                | 116.7               | 218.9      |
| Unrelated support in crop production                                      | 222.8                | 364.6               | 587.4      | 131.5                | 226.4               | 357.9      |
| Crop insurance subsidies                                                  | 15.2                 | 28.3                | 43.5       | 49.2                 | 90.0                | 139.2      |
| Unrelated support in the production of vegetables and industrial crops    | 7.8                  | 14.5                | 22.3       | 8.6                  | 16.0                | 24.6       |
| **Total**                                                                 | **329.4**            | **562.7**           | **892.1**  | **307.7**            | **479.2**           | **786.9**  |

Basically, government support measures have a positive effect on the development of the selected industries.

With regard to perennial plantations, this is evidenced by the annual increase in the area of gardens by almost 10% (table 5).

### Table 5. Areas of perennial plantations.

| Indicator                              | 2018 | 2019 |
|----------------------------------------|------|------|
| Perennial planting area, ha            | 230  | 203  |
| The area of perennial plantings at a fruiting age, ha | 2245 | 2301 |
Improving the quality of the seed is associated with the organization of its timely replacement with conditioned seeds, with the exclusion from the technological process of using commercial grain of mass reproduction as seeds.

**Table 6. The share of the area sown with elite seeds, %**

| Indicators                      | 2018 | 2019 |
|--------------------------------|------|------|
| In the total area under crops  | 7.8  | 8.5  |
| In crops of spring grains and legumes | 15.3 | 16.4 |
| In crops of winter crops       | 11.8 | 14.8 |

Based on the data in table 6, it can be seen that at present the enterprises of the region are fully provided with seeds that meet the requirements of the technological process.

In the field of agricultural insurance in crop production, a significant increase in the insured sown area is seen in 2019. If in 2018 the area of insured crops was 114.9 thousand hectares, then in 2019 it increased to 329.4 thousand hectares (or 2.9 times). This practice indicates that in the event of an emergency (mass death of crops as a result of drought, freezing or other weather anomalies), this will not be associated with an excessive load on the regional budget to compensate for damage to producers [42, 43], but will be regulated within the framework of market mechanisms (through payments from insurance companies).

State support for crop production in the region is not limited to the listed areas. The considered system of measures must be supplemented with such directions as modernization of the machine and tractor fleet, land reclamation, development of human resources of agricultural enterprises, support of farmers and others. This testifies to the integrated approach of regional authorities to the development of agriculture in general and crop production in particular.

In the Samara region, the main source of support for the agro-industrial complex is the regional budget. During 2018-2019 the share of federal finance was about 40% of the total funding (2018 - 2696.6 million rubles, 2019 - 2760.8 million rubles) (table 7).

**Table 7. Indicators of the effectiveness of state support for agriculture in the Samara region.**

| Indicator                                      | 2018      | 2019      |
|-----------------------------------------------|-----------|-----------|
| Agricultural products, total million rubles   | 88976.2   | 104274.5  |
| State support amount, total million rubles    | 2696.6    | 2760.8    |
| Incl. from the federal budget                 | 1119.5    | 1009.9    |
| From the regional budget                      | 1577.1    | 1750.9    |
| Gross production per 1 ruble state support, total | 33.0     | 37.8      |
| PSE,%                                         | 3.03      | 2.65      |
| The amount of taxes paid, million rubles      | 3350.5    | 5524.3    |
| The amount of taxes per 1 ruble state support | 1.24      | 2.00      |

As can be seen from the data in table 7, the use of state support in the Samara region is quite effective. If in 2018 the index of agricultural production (in comparable prices) amounted to 99.6%, then in 2019 it increased to 105.7%. At the same time, if in 2018 the decline in production was due to livestock products (index - 98.0%), then in 2019 there is an increase, including in animal husbandry - 102.4%.

At the same time, the gross agricultural output is growing at a faster pace than the growth of government funding for the industry. If in 2018 - the cost of gross production per 1 rub. state support amounted to 33.0 rubles, then in 2019 - 37.8 rubles. These figures also indicate a lag in agricultural financing compared to developed countries (USA, EU, Japan, Switzerland, etc.), where the PSE value ranges from 25 to 70% (Samara region - about 3%).

The amount of tax revenues of agricultural producers in 2018 and 2019 exceeds government support. In 2018, the ratio was 1.24, in 2019 - 2.0. That is, the agriculture of the region during this period acts as a budget donor.
If we consider the results of the activities of agricultural organizations (table 8), as the main recipients of state support, then in the conditions of counter-sanctions, agricultural producers managed to dramatically improve their financial performance. So, in the period under review, the profitability of current activities remained about 24%, and excluding state support - about 18%, which is significantly higher than the values of the pre-sanction period (0-5% - in 2008-2012).

**Table 8. Key performance indicators of agro-industrial complex organizations.**

| Indicator                                      | 2018      | 2019      |
|------------------------------------------------|-----------|-----------|
| Revenue, million rubles                        | 36727.3   | 39479.3   |
| Cost, mln rubles                               | 28170.6   | 30621.8   |
| State support amount, million rubles           | 1939.5    | 1798.4    |
| Net profit, RUB mln                            | 6778.3    | 7473.2    |
| Profitability of current activities,%          | 23.8      | 24.0      |
| Share of government support in net profit,%    | 28.6      | 24.1      |
| Profitability of current activities excluding subsidies,% | 17.2 | 18.5 |

Areas of state support are divided into the following areas: - support for livestock industries; - support for plant growing industries; - support for the technical modernization of the agro-industrial complex and the development of land reclamation; - support for the development of small businesses; - support for the development of rural cooperation.

4. Conclusions

As a result of the implementation of a consistent policy in the field of supporting the agro-industrial complex, agricultural production in the Samara region was able to become quite effective. The twofold excess of taxes in 2019 over the amount of support indicates that agricultural producers were able to switch to expanded reproduction using their own resources. If the current situation on the agricultural market persists in the medium and long term, then the role of the state will be reduced to stimulating extremely promising directions for the development of the region's agro-industrial complex.

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