The Role of State Regulation on the Sustainable Regional Development of Agriculture

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Abstract: State regulation is one of the most important tools for achieving sustainable development of the economic, environmental, and social spheres of the region. In recent years, the Tambov Region has been demonstrating stable growth in agriculture. During the period 2000-2021, the gross harvest of the main agricultural products in the region increased 3,5 times. The volume of meat production increased by 42,85 times. Nevertheless, it is not yet possible to achieve sustainable development of the ecological and social spheres of the region. In the region, there is a problem of reducing soil fertility. Economic growth in the agricultural sector of the region is not accompanied by a corresponding increase in the incomes of the population and an increase in the availability of food. A low level of food consumption was revealed in the region. The administration of the region needs to take measures to improve the welfare of the population and monitor compliance with environmental requirements of land use.

1 INTRODUCTION

There are various approaches to understanding sustainable development in the economic literature. The main goals of sustainable development of agriculture are: the growth of production, improving the quality of life of the population (the formation of steadily growing demand), the use of innovations in production and others. The following definition can be considered the most complete: sustainable development is the ability to maintain expanded reproduction, human capital and environmental conditions at a certain level for a long period of time (Sridhar et al., 2022).

Based on the above, the sustainable development of agriculture should be understood as a set of actions aimed at achieving growth in agriculture, while ensuring the expanded reproduction of all resources used. Achieving sustainable development in agriculture is a complex task, including increasing production volumes by using more productive equipment and resource-saving equipment, improving the welfare and social security of the rural population, maintaining environmental standards in the region. This paper examines the regional development of agriculture on the example of the Tambov region and the role of state regulation in this development.

2 RESEARCH METHODOLOGY

The following general scientific methods are used in the work: analysis and synthesis, induction and deduction. The use of these methods made it possible to carry out an objective comparative analysis and substantiate the conclusions. The creation of this work took place using information from domestic and foreign sources on the problem under consideration.

3 RESEARCH RESULTS

To support the domestic production of agricultural products in 2013, the State Program for the Development of Agriculture and Regulation of agricultural products, raw materials and food markets was adopted for the period of implementation until 2030 (Kastornov et al., 2020). This program is also valid in the Tambov region.

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The region has a favourable geographical location for agriculture. The region is located in a temperate climate in the centre of the European part of Russia. As of 2021, 980984 people live in the region, of which 375590 people are rural residents. The area of the region is 3446.2 thousand hectares, of which 80.8% are agricultural land. Black soils make up approximately 87% of the land area of the region.

In the ranking of regions by grain harvest in 2022, the Tambov Region ranks 3rd in the Central Federal District and 11th in Russia. In the ranking of sugar beet production, the region ranks second in the Central Federal District and fourth in Russia. In addition, the Tambov region ranks fourth in the Central Federal District in the ranking of regions for soybean production, and seventh in Russia. In the production of livestock and poultry meat, the region ranks 4th in Russia and the Central Federal District (Sysoeva et al., 2022).

Agriculture plays a leading role in the region's economy. The share of the sector in the structure of the Gross regional Product is approximately 32.4%. The gross volume of agricultural products in 2021 amounted to 213406.1 million rubbles. In 2021, 141917.4 million rubbles of crop production (66.5% of the gross volume of agricultural products) and 71488.6 million rubbles of livestock products (33.5% of the gross volume of agricultural products) were produced (Sysoeva et al., 2022).

The dynamics of the volume of production by the region of the main types of crop production is shown in Figure 1.

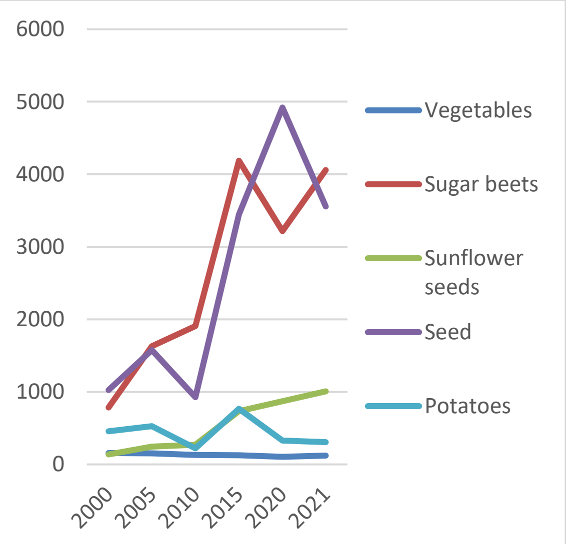

Figure 1: Dynamics of production of the main types of crop production for 2000-2021, thousand tons (Zakshevsky et al., 2021).

Figure 1 shows a significant increase in crop production since 2000. Relative to the indicator of 2000, in 2021 grain production increased 3.5 times (3553.7 tons), sugar production increased 5.2 times (4059.8 tons), sunflower seed production increased 7.3 times (1007.1 tons), and only the production of vegetables (decreased by 24%) and potatoes (decreased by 33%) demonstrates negative dynamics.

The reason for the reduction in the production of potatoes and vegetables is that most of these products are produced by households, which have been steadily reducing production since 2000 due to the disinterest of the population in agricultural activities. Nevertheless, in 2021, the shares of production by households of vegetables (65.2%) and potatoes (68.9%) remain high. Since citizens mainly grow products for their own consumption, only a small surplus is sold on the market. Therefore, this volume is not enough to fully meet the demand of the population for fruit and vegetable products, so consumers in most cases buy these products imported from other regions. This problem requires State intervention.

The dynamics of livestock production in the region is shown in Figure 2.

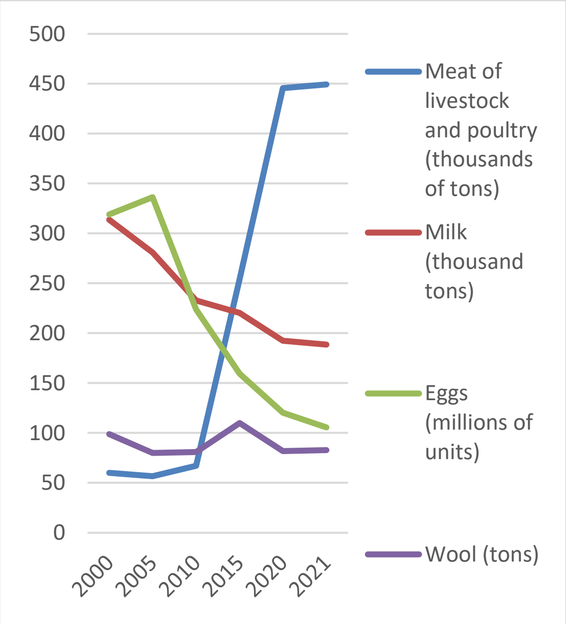

Figure 2: Dynamics of production of the main types of livestock products for 2000-2021. (Zakshevsky et al., 2021).

Significant growth is demonstrated by the production of livestock and poultry meat, the volume of which in 2021 amounted to 449.3 thousand tons. Production growth in 2021 compared to 2020 was

1%, but the indicator increased 7.48 times compared to the value of 2000. Most of the livestock and poultry meat products are produced by agricultural organizations (595.2 tons in 2021), whose production volume of these products increased 42.85 times compared to 2000. Also during this period, the share of agricultural organizations in the total volume of production of these products increased from 16.6% to 95.4%.

A significant increase in the production of livestock and poultry meat in the region is primarily due to support from the state. On the territory of the region, in addition to the implementation of the subprogram "Development of the livestock sub-sector, processing and sale of livestock products", departmental programs operated:

- "Regional economically significant program for the development of slaughter production of farm animals, meat processing in the Tambov region", implementation period 2015-2017;
- "Regional economically significant program for the development of beef cattle breeding in the Tambov region", implementation period 2016-2018;
- "Regional economically significant program for the development of beef cattle breeding in the Tambov region", implementation period 2016-2018 (Kastornov et al., 2021).

Due to the aggravation of the international situation, some departmental programs were discontinued.

The state is interested in supporting small businesses. In the region, from 2013 to 2020, the subprogram "Support for small businesses" was in operation, and since 2020, the subprogram "Development of agro-industrial sectors providing accelerated import substitution of basic agricultural products, raw materials and food" has been in operation. 340 446 040.4 thousand rubles have been allocated for the implementation of this program, and at the moment 1082 contracts have been concluded with representatives of peasant (farm) farms throughout Russia for the supply of agricultural products (Kuvshinov, 2021).

Currently, there is a federal project "Creation of a system of support for farmers and development of rural cooperation", under which peasant (farm) farms in the Tambov region received a subsidy of 50818.58 thousand rubles. In 2019, the number of peasant (farm) farms that received financial support amounted to 23 units, in 2020 – 15 units, in 2021 – 18 units, in 2022 - 25 units.

The Ministry of Agriculture of Russia conducts annual monitoring of the implementation of relevant state support programs and adjusts the program in accordance with the current results. In 2020, the Ministry abolished the following areas of subsidies:

- Provision of funds to achieve the targets of state programs for the development of the agricultural sector;
- Financial assistance by producers of crop production;
- Provision of funds to increase the number of dairy cattle;

However, instead of these points, new directions for the provision of subsidies were added:

- Financial assistance to representatives of small businesses and support of the main sub-sectors of the agricultural sector;
- Financial support for crop production and animal husbandry, provision of preferential conditions for agricultural insurance.

In addition, adjustments were made to the performance indicators of financial support. The Federal State Statistics Service has developed a defining index of production, the base period for calculating which was 2018.

4 DISCUSSION OF THE RESULTS

Therefore, according to the results of the analysis of the impact of state regulation on the production of agricultural products in the Tambov region, the positive impact of state support measures on the growth of production has been revealed.

Nevertheless, in order to achieve sustainable development in agriculture, it is necessary to pay attention to the social aspect. Economic growth in agriculture should occur simultaneously with improving the quality of life and increasing the availability of agricultural products (Karamnova, 2020). However, according to statistics, inflation for food products in 2022 amounted to 10.38%, while the average monthly salary of the population of the Tambov region increased by 7.7% (Akindinov et al., 2022). In addition, this fact indicates, first of all, that the agricultural market of the Tambov region is growing only in value terms, while real production volumes are growing at a slower pace due to the low income level of the population.

Also an important factor of economic growth is the indicator of food consumption per capita. Actual indicators of food consumption in the Tambov region per capita in 2021 significantly lower than the medical norms of food consumption: 109 kilograms of vegetables and melons (medical recommended norm - 140 kilograms), fruits and berries - 59 kilograms (medical recommended norm - 100 kilograms), milk and dairy products - 160 (in terms of milk) (medical recommended norm - 325 (in terms of milk)), eggs – 194 pieces (the medical recommended norm is 260 pieces), These statistics indicate that the success of agriculture in the region is not accompanied by an increase in the social accessibility of agar products. The area needs more available products (Zyukin et al., 2022).

Stable growth of the agro-industrial market is possible only if the increase in income of the population exceeds the increase in prices for agricultural products. Under such conditions, the population will stop saving on food and will begin to consume them in accordance with medical standards, which will strengthen the health of the population. The formation of stable demand is the basis for the sustainable development of agriculture.

The introduction of advanced innovations is the way to create a stable production. In 2021, only 19.8% of agricultural organizations in the region have equipment whose performance is not inferior to world standards. With the help of this technique, 12.4% of the volume of agricultural products in the region is produced (Akindinov et al., 2022). That is why the administration of the region should increase financial support for agricultural organizations for re-equipment and strengthen control over the use of funds.

The increase in the collection of major crops is accompanied by soil degradation, which, according to experts, began in the 2000s. This problem arose primarily due to a decrease in the application of mineral fertilizers in 2000-2005. This situation arose due to a significant rise in the price of domestic mineral fertilizers. The result of this was the oxidation of 1469.6 thousand hectares of land, which, according to research, tends to grow, which is a threat to obtain a stable harvest in the future. Especially serious soil oxidation occurred in Bondarsky district (100%), Pichaevsky district (99.4%), Staroyuryevsky district (99.3%), Gavrilovsky district (99.2%), Morshansky and Sosnovsky districts (99.0%) (Zakshevsky et al., 2022). In these areas, it is urgently necessary to take measures to reduce soil acidity. The local population mainly uses natural fertilizers and practically does not apply liming, since there are very few lime reserves in the region. In order to achieve sustainable development in agriculture, it is necessary to achieve a balance of economic and environmental aspects. Reproduction of soil fertility should become one of the most important tasks of state programs for the development of crop production (Hobbs et al., 2008).

The Tambov region has been the most environmentally friendly region of Russia for many years. However, out of 13 organizations polluting the atmospheric air of the region, 8 are agricultural organizations. The amount of pollutant emissions in 2021 is as follows: KomEk LLC (6,194 thousand tons), Tambov Bacon LLC (4,517 thousand tons), Tokarevskaya Poultry Farm OJSC (3,961 thousand tons), Rusagro-Tambov LLC (6,439 thousand tons), Cherkizovo-Pig Breeding LLC (1,509 thousand tons), Tambov Turkey LLC (1,219 thousand tons). Such high rates of emissions of harmful substances into the atmosphere indicate the inefficient work of agricultural organizations to eliminate them.

In addition, studies on the state of nature of the region in 2021 revealed an excess of the maximum permissible discharge into wastewater from JSC "Ingavinskaya poultry Farm", JSC "Tokarevskaya poultry farm" and LLC "Rasskazovsky pig breeding complex"(Zakshevsky et al., 2022). All of the above indicates the lack of proper control by the state over compliance with environmental requirements.

5 CONCLUSION

Therefore, with the support of the state, the agricultural sector of the Tambov region has achieved significant growth. Nevertheless, the administration of the region does not pay enough attention to the development of social and environmental aspects of the industry. All this may cause a decline in production in the future, despite the significant resource potential. That is why the administration of the region needs to review its policy regarding the development of agriculture and strengthen control over compliance with environmental requirements

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