An organizational-economic mechanism for effective work of peasant farms: concept, structure, and directions for improvement

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Abstract. The modern period of the formation and development of the farming sector in Russia has more than 25 years, during which the growth rates of the main economic indicators of its subjects exceeded the levels of similar indicators of other agricultural producers. The paper discusses changes in the physical volume index, providing a number of observations revealing causal mechanisms in the work of peasant farms in Russia. Consideration of these factors, as well as evaluation of the effectiveness of the work of peasant farms revealed a whole range of problems and difficulties in the process of agricultural production. The paper also provides recommendations aimed improving the efficiency of the already operating peasant farms, which would a positive impact on the overall development of the farming sector of Russia’s national economy.

1. Introduction

In the modern period of development of the agrarian economy, the role of the farming sector in the production of agricultural products and food, as well as in the social sphere of the village, is gradually increasing. The number of peasant farms (PFF) and individual entrepreneurs, according to the data of the 2016 All-Russian Agricultural Census, was 174.6 thousand, and the land area in their use was 42 million hectares [1]. In 2003-2016, the volume of products produced by PFF increased by 13.4 times, and its share in all agricultural products increased from 4.9% in 2003 to 12.5% in 2016. The share of farm products in the total volume of grain production in 2017 amounted to 29.1%; 11.6% in sugar beet, 31.5% in sunflower, and the production of these types of products increased by 3-4 times in comparison to the level of 2003 [2].

As the author’s long-term studies have shown, it is the peasant (farmer) households that are the main link of small rural entrepreneurship. And from this point of view, an effectively working PFF represents the main source for the formation of the middle class in the countryside, leveling the incomes of the rural population with the urban one. That is why their development contributes to the growth of consumer demand and increases investments in the domestic economy. However, the production and social potential of the peasant (farmer) farms is not yet used effectively enough, as evidenced by the time series of the main indicators of their activities (Table 1, 2) and the assessment of this process by the farmers themselves. Of all those surveyed at the XXVII Congress of the Association of Peasant (Farmer) Farms and Cooperatives of Russia (2016), 47.2% of PFF owners spoke in favor of expanding their farms.

Therefore, it became necessary to develop a set of organizational and economic measures that would increase the efficiency of the development of PFFs in modern conditions of agricultural production modernization and the orientation of the agrarian policy on food import substitution in Russia.
2. Methods

Studying the issues of the essence, typification, and classification of PFFs allowed to reveal that all their characteristics can be divided into common for all farms (housekeeping is based on private property and family labor; the owner and members of the farm are highly motivated to work on the land; economic independence and entrepreneurial initiative) and specific, inherent only in their individual species. Therefore, in the course of the research, methodological approaches were used to assess the effectiveness of their activities, based on the generally accepted system of indicators, but taking into account the peculiarities of farmers’ production. So, for example, in the PFFs of consumer and low-product types that operate independently, without participation in the process of cooperation, the efficiency indicators of the use of production potential must be adjusted for the cost of the services involved. In the peasant farm that finances production at its own expense, the final result is largely determined by the chosen system of product sales and its corresponding assessment. And if the farm is actively involved in the long-term lending process, the calculation of the financial indicators of agricultural producers that characterize their solvency and sustainability becomes important. In this case, the assets of farms, their liquidity, the ratio of own and borrowed funds are taken into account. Although, regardless of their size, the main criterion of effectiveness is still the profitability.

| Table 1. The efficiency of agricultural production in Russian PFFs. |
|---------------------------------------------------------------|
| Indicators | Years | Average chain growth index, % | Attitude 2016 by 2006 |
|-------------|-------|-----------------------------|-----------------------|
| The share of products in its total volume, % | 2000 | 2003 | 2006 | 2008 | 2011 | 2015 | 2016 | - | +5.4 p.p. |
| Total, billion rubles | 10.8 | 16.9 | 32.4 | 33.8 | 43.5 | 51.0 | 56.7 | 111.8 | 175 |
| Per average annual employee, thousand rubles | 21.6 | 32.6 | 58.6 | 59.7 | 47.6 | 55.7 | 188.3 | 140.6 | b times 3.2 |
| On 1 hectare of farmland, rub. | 705.5 | 922.4 | 1500.5 | 1301.3 | 1481.8 | 1428.0 | 1348.0 | 105.8 | 89.8 |
| Crop yield, c / ha | |
| Cereal | 11 | 14.8 | 17.7 | 21.3 | 19.0 | 19.6 | 22.8 | 113.1 | 132.4 |
| Potato | 95.8 | 109.6 | 154.4 | 174.0 | 165.6 | 189.2 | 178.1 | 107.7 | 115.4 |
| The productivity of farm animals | |
| Milk produced by 1 cow, kg | 2192 | 2538 | 2353 | 2571 | 1765 | 3465 | 3499 | 114.0 | 148.7 |

We used the methods of economic and statistical evaluation of the dynamics of the series for 10–20 years for individual production indicators. To identify the position of the PFF owners on various issues of development of their business we interviewed the farmers-delegates of the AKKOR congresses. Moreover, in the process of research, literary, and analytical generalizations, expert assessments, monographic experience, etc. were used at certain stages.

Information sources were the scientific and reference papers and books, data from Rosstat, including the results of the All-Russian Agricultural Censuses for 2006 and 2016, regional consolidated annual accounting reports of farms and their cooperatives, monographic studies of the authors. As a result, an extensive
scientific and analytical material was collected, which allowed developing key directions for the formation of an organizational and economic mechanism for the PFF effective development.

3. Results

The essence of the organizational and economic mechanism of work of economic entities is formed from two large systems interacting with each other: organizational and economic. Their interaction is provided in a certain way, in a specific order, with the help of activating or, on the contrary, reducing the activity of influence of certain factors on them by means of levers of influence. The combination of the elements of impact and forms the organizational and economic mechanism. Among them, the purpose of his work, features, principles, tools, and levers deserve special attention (Fig. 1). The latter are also independent systems (in this case, subsystems) with their own mechanisms (Fig. 2, 3). For example, the organizational and economic mechanism of the PFF innovative development is an important condition for their effective activity in the modern agrarian economy. It includes the following elements: the availability of innovative developments and the alternative payback of their implementation; information availability; financial opportunities, since this activity requires certain costs, as a rule, of an investment nature; government stimulation of innovation through both direct and indirect impact [3].

Table 2. PFF efficiency in 2016

| Indicators                                      | Areas             |              |
|------------------------------------------------|-------------------|--------------|
|                                                | Vladimirovskaya   | Tula         | Ulyanovskaya |
| Number of farms, units                         | 1029              | 926          | 809          |
| Area of farm on 1 household, ha               | 35.86             | 250.76       | 406.06       |
| Average chain index of growth in gross agricultural output over 10 years, % | 140.1             | 146.7        | 133.7        |
| Produced on 100 hectares of agricultural land, c: grains | 1227              | 2640         | 743.8        |
| milk                                           | 1045.6            | 114.8        | 61.5         |
| Productivity, c / ha: grains                   | 16.8              | 25.4         | 14.7         |
| Per 100 hectares of agricultural land accounts, thousand rubles: | 263.2             | 308.4        | 109.5        |
| proceeds from the sale of agricultural products| 9019.2            | 3218.2       | 56.3         |
| net income                                     | 756.5             | 236.7        | 169.8        |
| government support (subsidies of all levels and grants) | 1930.6            | 240.2        | 126.3        |
| accrued taxes                                  | 183.9             | 151.7        | 94.9         |
| Profitability level, %                         | 6.8               | 6.7          | 14.9         |

On average, over 3 years (2014 - 2016) per 1 household, thousand rubles

| Proceeds from the sale of agricultural products| 3674.3            | 7750.3       | 2379.2       |
| Net income                                     | 651.1             | 627.8        | 531.0        |
| Government support (subsidies of all levels and grants) | 763.2             | 659.3        | 481.1        |
| Accrued taxes                                  | 62.2              | 346.0        | 194.5        |
Figure 1. Scheme of the organizational and economic mechanism for the PFF effective development [4].

The conducted studies have shown that the effective functioning of a PFF as an independent system in the agrarian space is determined by the qualitative component of the elements of its organizational and economic mechanism, the whole set of which can be divided into internal (microeconomic) and external (macroeconomic) (Table 3).

The first group includes the quantitative and qualitative composition of production resources, enterprise, initiative, and other personal characteristics of a farmer and family members. It is the microeconomic conditions that form the internal reserves for increasing the PFF efficiency and sustainability. But the possibility of their growth largely depends on the environmental conditions, which are manifested through the relationship of farmers with other actors of the agricultural market regarding the supply and maintenance of their production activities, product sales, lending, leasing, taxation, etc.

The main elements, the priority directions of their improvement and the result of the implementation are described in Table 3. Of course, this list is not the only right and indisputable, it can be added and specified. (For example, activities on insurance systems, training and advanced training of PFF workers and owners). Or, in our opinion, in its formation, not enough attention was paid to such important (requiring a special approach to their improvement) elements of the organizational and economic mechanism for the PFF effective development as regulating the disparity of prices for agricultural and industrial products, as well as upgrading farm production [16].

According to the PFF owners, it is very difficult to plan business development in contemporary conditions. There is a constant rise in prices for the means of production and energy, and the rise in prices for manufactured products is not proportional to it. Over the past 17 years, diesel fuel has risen in price by 8.6 times, gasoline – by 7.5 times, electric power – by 19.5 times, and the price of the produced raw milk has increased by 3.2 times, and the wheat price has remained at the same level. This leads to financial instability of farms, to the constant search for activities, new cultures and technologies to increase the profitability of production.

To change the situation, it is advisable at the state level to determine the minimum amount of purchase prices for crop production, which provides reimbursement of costs and production of sufficient income for expanded reproduction by the producer and adjust it when diesel and material prices rise. Government measures should also be taken to regulate prices and tariffs for agricultural producers of fuels and lubricants, electricity and gas, so that their growth does not exceed the annual rate of inflation [7].

The increase in PFF labor productivity, shown by us earlier in Table 1, (as explained by A. V. Petrikov) is due to the increase in their technical equipment [8]. The analysis of the production function carried out by the All-Russian Research Institute for the Use of Machinery and Petroleum Products in Agriculture staff showed that the total weight of the factors directly related to the PFF technical equipment (availability of equipment and ensuring its efficiency) exceeded 55% [9].
Distinctive features of sales organization

Increased flexibility and mobility in restructuring production; multi-channel and low warranty sales of products; a high level of sales costs per unit; underdevelopment of market infrastructure and cooperative relations; the specificity of determining the level of marketability of products; weak government support for the development of market relations

Basic principles of sales organization

Commercia benefits | High sales warranty | A preferential orientation of production to meet the needs of the local market | A rational use of own, rental, and cooperative funds | A rational distribution of production and management responsibilities among the PFF members

Directions for improving the organization of sales

Structuring production and improving product quality | Selecting efficient and affordable product distribution channels | Justification of prices and forms of payment for products | Developing information and marketing services | Improving the market distribution infrastructure | Ensuring conditions for guaranteed product sales | State regulation of production and sales

Figure 2. The scheme for establishing the system of organizing sales of PFF products [5].
Figure 3. Components of the system of state support of small business in the agro-industrial complex [6].
Table 3. Directions for improving the organizational and economic mechanism for effective development of peasant farms.

| Element                          | Directions of improvement                                                                 | Farmer effect from the introduction                                                                 |
|----------------------------------|-------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|
| **Microeconomic**                |                                                                                           |                                                                                                       |
| Production structure             | Diversified (crop + livestock), followed by the reduction of industries and the identification of the main and (or) main industries. | Growth in production volumes focused on market demand while fulfilling technological requirements.     |
| Intensification                  | Use in the production process of improved, innovative technologies, and (or) their components. | Growth in production of better quality products per unit of land.                                     |
| Optimization of the structure of production resources | The ratio of land, labor and material resources is proportional to the availability of sources of their replenishment and standards of use. | Improving the efficiency of using the production resources, characterized by an increase in the yield of products per unit of expended resource. |
| Organization of product sales    | - Marketing research (inside the farm, through information and consulting centers, ICC); - Directly to consumers through highly organized intermediary structures; - Taking into account the payback of its own infrastructure services (transport, storage, processing, quality assessment, etc.). | Increasing profitability and own funds.                                                               |
| Choosing the form of processing of agricultural products | Cooperative or private, depending on the volume of own production and the possibility of using other raw materials sources. | Increasing revenues, income, own funds.                                                               |
| Developing non-agricultural activities | Processing, trade, agro-tourism, social services, etc. depending on the PFF location and the demand for these activities | Reducing the seasonality of the use of labor resources. Increasing the income and own funds.           |
| **Macroeconomic**                |                                                                                           |                                                                                                       |
| Legal basis                      | Protection of private property, including land; improvement of tax legislation               | Confidence in the future; focus on production functions.                                               |
| Lending through: commercial banks | Increasing banking products, more adapted to the characteristics of small forms of management. | Increasing borrowed funds.                                                                               |
| Credit cooperatives              | Expansion of assets, loan portfolio, accessibility to external sources of borrowed funds. | Increasing borrowed funds; income growth (dividends from participation in a cooperative).             |
| Market infrastructure            | Should be represented by organizations of various forms of ownership to create a competitive environment in the market. | Increasing farmers’ availability to use effective distribution channels, service organizations; an increasing payback of selling and production costs; an increase |
Cooperation: production
With full or partial pooling of resources.
Improving the efficiency of using the production resources, characterized by an increase in the yield of products per unit of expended resource.

Consumer
Supply, sales, processing.
Increasing the availability of sources of production resources, the effective use of the latter; income growth, including dividends from participation in the cooperative.

Taxation
The introduction of a single land tax adequate to the potential Income from the use of land resources; the recognition of PFFs with UATS payers of VAT, etc.
Simplification of reporting, its transparency, stimulating the development of farming, increasing its own funds of financing.

Direct government support
Subsidies, compensation at the level (per unit of land area) not lower than agricultural organizations (enterprises).
Increase in attracted funds of financing and public motivation.

Customs regulation
Decrease in the volume of imported products, both raw materials and food.
Availability of processing and retail markets, increasing the competitiveness of farmers' products and at the price.

Information support
Establishment of ICC, preferential services, and training for farmers and their families.
Availability of information, its proper use.

In accordance with the State Program for the Development of Agriculture and Regulation of Agricultural Products, Raw Materials, and Food for the years 2013-2020, in order to upgrade the existing fleet of machinery to the minimum necessary indicators of production, energy supply for crop production should be 1.68 hp. per 1 ha. Thus, according to our calculations, farmer resources are only 0.09 hp behind. (5.3%). For the development of innovative technologies in agricultural production, the energy consumption per 1 ha should be at a level of at least 3 hp, and this task has not yet been solved by peasant (farmer) farms [10]. Moreover, as shown by a retrospective analysis of the equipment of the machines and mechanisms of the peasant farms of the Tambov region, conducted by the All-Russian Research Institute for the Use of Machinery and Petroleum Products in Agriculture staff, the increase in land area in 1993-2015. 3.09 times, did not lead to an adequate increase in technical support. The number of combine harvesters increased by 1.06 times, wheeled tractors - by 1.76 times, tracked tractors and trucks decreased by 1.16 times and 1.58 times, respectively. In this case, the period of use of a large number of production equipment for several years already exceeded the period of complete depreciation. Namely, 73% of trucks, 84.2% of combine harvesters, 64.2% of wheeled, and 100% of tracked tractors [9].

The analysis showed the increased demand from farmers for low-power tractors. Large machinery is interesting to a small number of farm owners. So, the tractors with power from 111 to 250 hp accounted for only about 9% of the total amount used by farmers; with power over 250 hp, it was even less, constituting about 1%. However, the proposal for new small-sized domestic machinery in the domestic market is not available, as the products of individual domestic tractor factories are outdated.

Acquisition of equipment by farmers continues to be multi-channel in nature: through Rosagroleasing (about 30% of farmers use this resource), by issuing an investment long-term loan (about 25%), through intermediary campaigns according to the general scheme of purchase, etc. [10]. Another efficiently used abroad and in the recent past in our country, the type of technical support for
farmers could be equipment rental centers [11]. Without going into the details of their organization and interaction with consumers, one should nevertheless note a very important function in creating competition in the market of technical means and services for their maintenance, i.e. in improving the production infrastructure of the agricultural sector.

Today, recommendations for novice farmers on their choice of industry structure of economic activity are of particular relevance. Our studies prove that in modern conditions, to ensure the reliability and stability of the operation of a PFF, its owner must choose a model of industry specialization that takes into account the positive impact of the maximum number of factors for the efficient use of resources in specific conditions. Moreover, it should be flexible and have a maximum adaptability to the regional market and to the adequate action of changing factors in the region in order to constantly create a reliable basis for the economy not only for its survival, but also for obtaining the greatest profit. For the diversification of agricultural production, the level of development of the infrastructure of the market of agricultural raw materials and food, as well as the market of technical resources and services, is of particular importance. Unfortunately, the current level of infrastructure development is not conducive to the development of agricultural diversification.

The presented study and other elements of the organizational-economic mechanism of effective development of PFFs (and the development of directions for their improvement in the Russian context) should be carried out in more detail, especially taking into account regional peculiarities of farmers.

4. Discussion
Another proof of the strong need to improve the efficiency of small businesses in the country’s economy and expand the range of their activities and numerical increment is reflected in Government Decree No. 949 of August 16, 2018. According to this document, the plan for the selection of investment projects with state support is reduced from 100 billion rubles for the fuel and energy complex and 10 billion for other industries up to 500 million rubles. The document also reflects the new list of products, the procurement plans of which the recipients of state support will have to inform the Government. It consists of 190 items (an increase of 48) of the import nomenclature, which should be replaced by domestic counterparts. In general, the new edition of the rules for selecting investment projects has become less complicated. It reduced the minimum level of participation of the federal budget, VEB, or the National Welfare Fund up to 10 million rubles. The costs can now take into account the purchase or lease of land and the cost of dismantling old equipment, buildings, and structures. However, the cost of the acquisition, manufacture, and delivery of fixed assets and equipment, commissioning and the creation of stocks of raw materials and finished products are no longer considered as “investments.”

Thus, the Russian Government expects to attract a greater number of participants to import substitution, because the owners of large projects that have already been launched are still successfully evading support for Russian production with their investments [12].

5. Conclusion
The implementation of measures developed in the process of the presented research will increase the efficiency of the already working peasant (farmer) farms and have a positive impact on the overall result of the development of the farming sector.

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