

# Creation of tools for digitalization of agro-industrial complex on the basis of innovative development management

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**Abstract**—In the article are questions of forming of innovative mechanism of support of agriculture. The importance of the role of the state in solving the problem is noted. Attention is paid to the Russian and foreign experience of stimulating the transition to the innovative way of development according to the priorities of state regulation of the innovative sphere. The formation of the system of innovative development of agriculture takes place in the context of global changes and the global crisis in the external environment and the associated uncertainty. The concept of the system of innovation and information support of agricultural enterprises acts as a fundamental management tool. Components for regulation of digital information exchange of management system and production efficiency are presented. The role and importance of analytical support of decision-making processes in the management of agricultural enterprises. The tools of competitiveness management in agriculture, based on digitalization, which will ensure the interest in the greatest importance of the population for agricultural products in the regions of Russia to fully meet the needs of the market and demand. Components of the innovative management mechanism include methods of public administration, economic instruments of influence, regulatory, information and legal support. The proposed tools of digitalization of agriculture on the basis of innovative development acts as a system. The fundamental components of the system

**Keywords**—*Tools, digitalization, management, competitiveness, economic management subsystem, regulatory and legal support, functional support.*

## I. INTRODUCTION

It is well known that the strategy of sustainable development of agriculture is based on the tools of innovative management.

The message of the President of the Russian Federation V. V. Putin to the Federal Assembly noted the importance of a digital breakthrough in the economy. Thus, at present, the main attention in the scientific, technological, technical and economic competition of Russia with the countries of the world community contributes to the formation of prerequisites for a significant reorientation of the priorities of the state, private business and civil society to activate the innovative component in the development of agriculture and the economy as a whole.

Of course, the process of formation of the mechanism of innovative development is a consequence of the political and social conditions that are dynamic in society. The study of practical experience in the creation and operation of similar mechanisms in developed countries suggests that the role of the state in addressing emerging issues is more important today than ever. An excursion into the field of Russian and foreign experience of stimulating the transition to an innovative way of development makes it possible to determine the priorities of state regulation of the innovative sphere.

## II. LITERATURE REVIEW

The modern tool of innovative-digital support of agricultural enterprises in the conditions of global changes and the global crisis in the external environment and the associated uncertainty is the formation of the system of innovative development of the enterprise

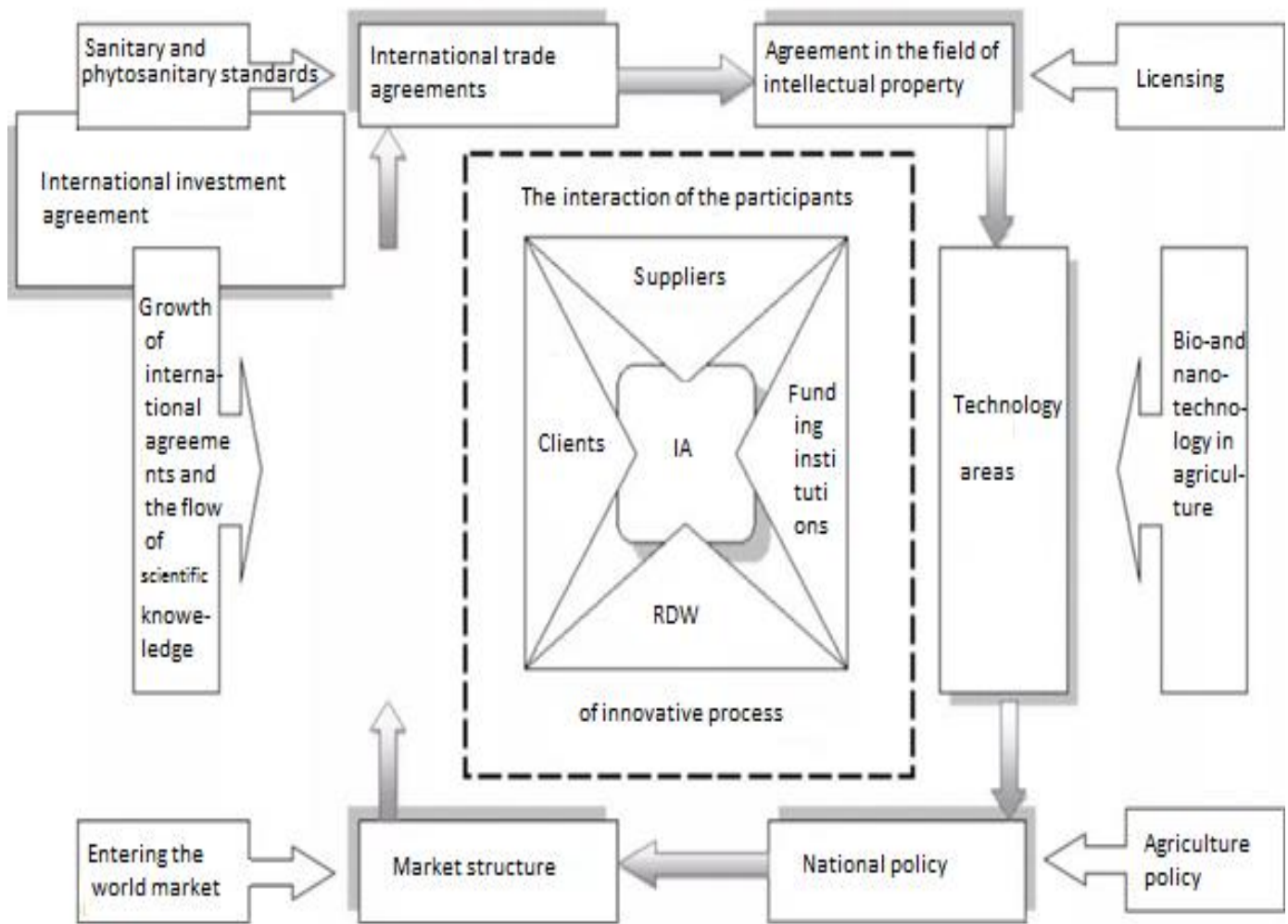


Fig. 1. Information and digital support system for agriculture

The concept of the system of innovation and information support of agricultural enterprises acts as a fundamental management tool designed to regulate the exchange of information management system and monitor the effectiveness, as well as providing analytical support for decision-making processes during the management of agricultural enterprises [ 1 ] .

At the moment, the development of the economy worldwide is determined by the active spread of information. This process has diverse directions. [2-5] Regular complication of modern information technologies is impossible without the formation and application of a large

number of data sets. The economy becomes information-digital projected. These aspects of the economy make it possible to determine the need for modern methods and means of management, which change according to the requirements for the management of the enterprise. The system of information and digital support is the most relevant method. The concept of information and digital security system includes controlling as a control. Typically, the system of information and digital support of agricultural enterprises is understood as the performance of management and control functions. The analysis reflects the interaction of the system of information and digital support with the use of controlling.

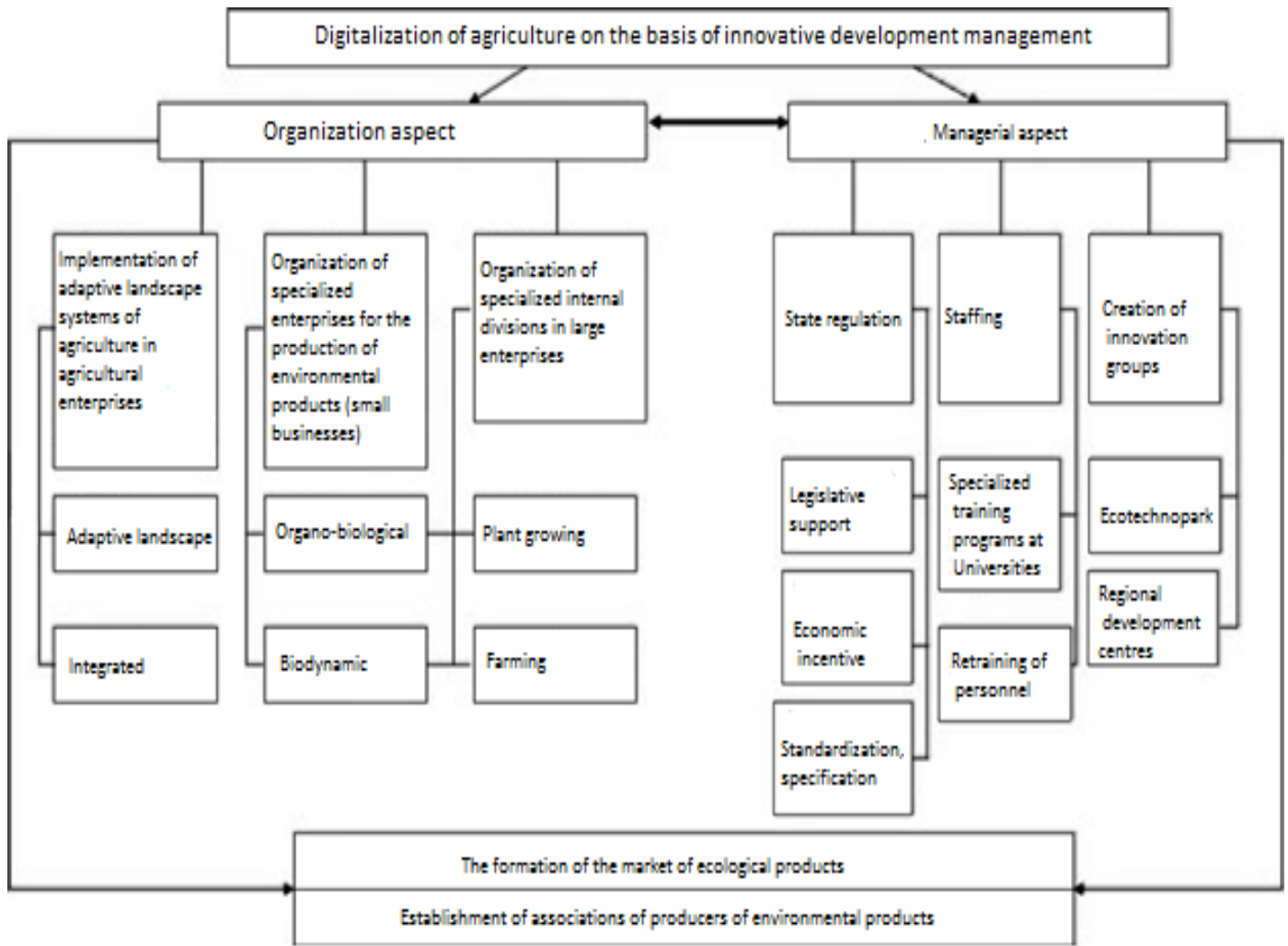


Fig. 2. The interaction of state and market instruments APK

Currently, the concept of system of information and digital security of agricultural enterprises as management has changed from a system dependent on the financial and operational activities, until the system is able to predict and plan. Equally important is the process of defining and making strategic and tactical decisions and coordinating processes. This quality allows to form the definition of information and digital support of agricultural enterprises as a management tool [6, 7].

The formed system allows to analyze the indicators of financial and economic activity of agricultural enterprises and to assess the differences between the real data from the

planned, to form ways to eliminate inconsistencies and further adjustment.

To create favorable conditions for innovative development of agricultural enterprises it is necessary to identify areas of competitive areas in animal husbandry, crop production and poultry product subcomplexes.

It is important to focus on the coordinated interaction of state and market instruments that contribute to the formation of the external environment of functioning of agricultural enterprises. As a rule, they determine the strengthening and positive implementation of the tools of their innovative development.

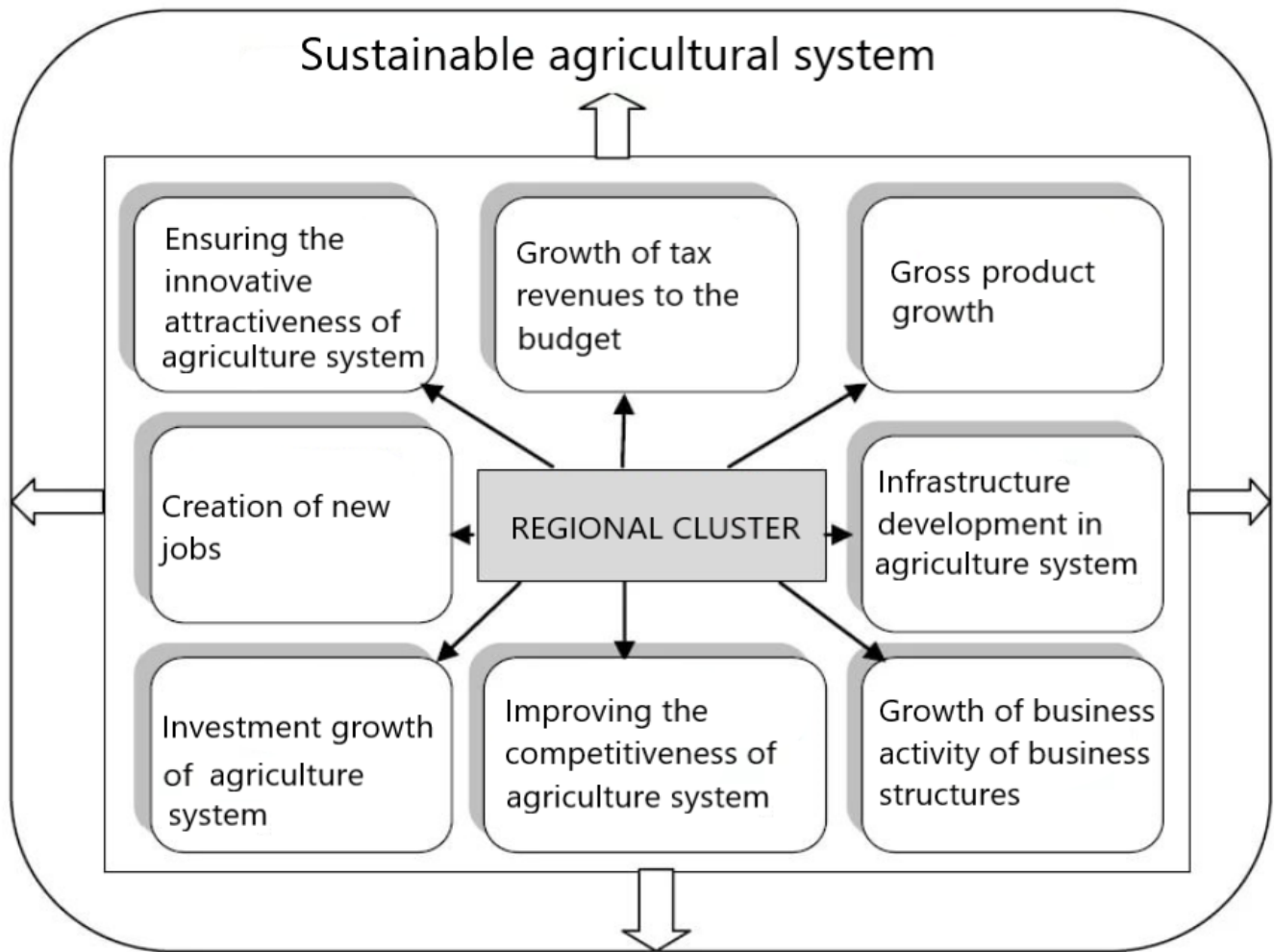


Fig. 3. Sustainable regional system

### III. RESEARCH METHODS

We note the most important aspects of the importance of digitalization in agriculture from the perspective of globalization of the economy on the basis of the author's approach.

First, the presence of imports in the domestic market has greatly changed the norms and standards of investment and consumer demand, which is similar to the level of developed countries. Of course, to improve and maintain the position of domestic agribusiness companies in the domestic market, it is necessary to activate the factors of non-price competition.

Second, Russia's participation in the globalization processes and the system of measures to join the World trade network (WTO) do not preserve the prospects for Russian agricultural producers of significant preferential and protective support measures that allow them to operate outside international competition. For this reason, agricultural entrepreneurship is developing the search and

development of promising technologies and innovative approaches to create the necessary competitive advantages in the perimeter of global competition[1].

Thirdly, the strengthening of the modern business community, which does not have access to raw materials, ambiguous business forecasts of improving the raw materials sectors of the domestic economy in the context of global economic improvement in the world, activates the increased interest and the flow of new organizational, managerial and financial resources in the development of high-tech agricultural production in Russia.

The noted aspects show that due to the effectively constructed strategy of innovative development of the agricultural sector, the rational use of competitive advantages related to educational, scientific and technical potential, ensuring the competitiveness of non-commodity sectors of the domestic economy, is feasible.

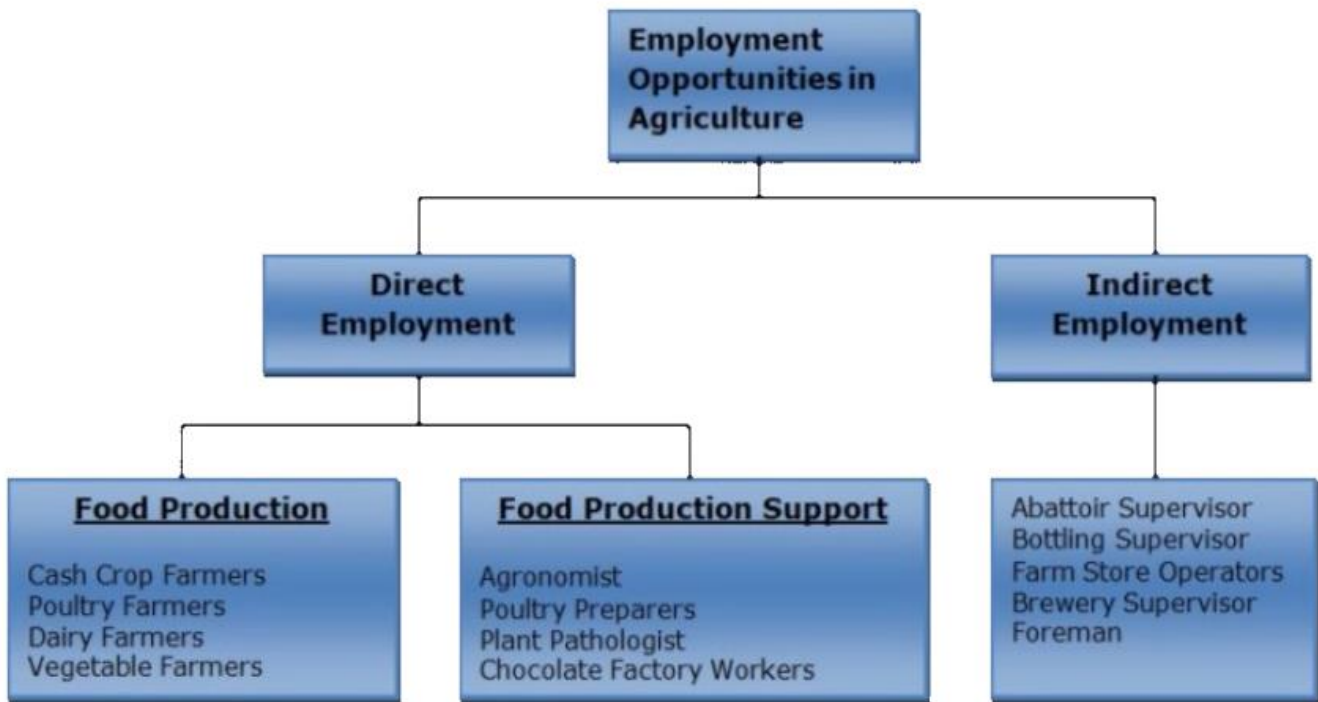


Fig. 4. Employment opportunities in Agriculture

In these circumstances, the issue of rational management of innovative development of agriculture, the solution of which allows to ensure stable and effective functioning, and improve the position of socio-economic development of the agricultural sector is important.

The issues of ensuring competitiveness (KSP) in the context of digitalization in agribusiness sectors are directly related to the choice of development prospects.

#### IV. PRACTICAL IMPORTANCE

The functioning of the innovative mechanism of competitiveness management in the sub-sectors of agriculture will solve a whole block of problems:

- To ensure the interest of agriculture in the greatest importance of the population for agricultural products in the regions of Russia to fully meet the needs of the market and demand.
- To fully meet the needs of local markets in terms of supply and demand.
- Increase of economic responsibility for the validity of management decisions of competitiveness

Components of the innovative management mechanism include methods of public administration, economic instruments of influence, regulatory, information and legal support.

#### V. SUMMARY

The proposed tools of digitalization of agriculture on the basis of innovative development acts as a system. Fundamental components of the system:

- economic management subsystem,
- legal and regulatory support,
- functional support

At the final stage, it makes sense to justify independent blocks that create an integrated system based on the unity of subsystems, interconnected and interdependent between its individual parts. Ultimately, each of them represents an individual contribution to a unified whole.

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