

Theoretical and Methodological Foundations of Balanced Regional Innovation Development

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Abstract: At the current stage of the development of scientific thought, the concept of the regional sustainable development is considered as one of the strategic directions of scientific discussions. The economic content of the term is based on the principle of harmony, balance, and stability. In this context, the work provides the scientific substantiation of the sustainable development concept as a stable process independent of fluctuations in the external and internal environment with the constant development of the social, economic, technical, institutional environment, taking into account the resource potential. The paper considers the theoretical aspects of the regional system management, based on the methods of the unity of logical and historical approaches to research, formalization, and generalization: the terminological apparatus was clarified and supplemented, including the author's interpretation of the concept of "balanced innovative regional development", "sustainable development". The paper proves that in order to achieve a balanced regional system development, it is necessary to maintain sustainable growth trends in terms of the main social, economic and environmental indicators. The study reveals the nature of the emergence of the theory of sustainable innovative development origin on the basis of G. F. Hegel categorical system, systematizes the list of the main conditions and factors influencing the process of balanced development of the region, within which it is determined that the specificity of the regional development is determined by the external and intra-environment conditions formed by a set of key parameters. The stages of the origin of theories of balance and the determinants of development are revealed. The results formulated in the study make it possible, on a scientific basis, to improve the understanding of the regional sustainable development and to develop instruments of influence to increase the efficiency of agricultural production and accelerate the innovation process within the study area.

1 INTRODUCTION

At the current stage of the development of scientific thought, the concept of sustainable development is considered as one of the strategic directions of scientific discussions. The economic content of the term is based on the principle of harmony, balance, and stability. In our opinion, the above-mentioned scientific substantiation of the sustainable development concept identifies a stable process that does not depend on fluctuations in the external and internal environment with the constant development of the social, economic, technical, institutional environment, taking into account the resource potential. In the plane of scientific discussions of the theory and practice of sustainable development, the

emphasis is placed on identifying the factors for achieving this process. And in relation to the formation of ideas about balanced development, the term "sustainability" is not advisable to be regarded as a synonym. The term "sustainable development" by itself consists of two concepts. Sustainability is understood as the property of a system to maintain its state regardless of external conditions (Azrilian et al., 2008); in the technical translator's reference book - the stable state of the system and its ability to return to its original state (Takhumova, 2020); according to A.N. Folomev sustainability is a type of state of a certain economic system in a market environment (Folomev, 2009); K.S. Tikhonkov applies the ability to maintain the same behavior of a system (structure) when exposed to environmental factors to the concept

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of stability (Gladilin, 2013). Following the development of the theory of sustainability, it can be assumed that this is an unchanging, equilibrium state of a certain system, which has the properties to return to its original state under various fluctuations of the external environment. "Development" is a movement, a transition from one state to a new, higher quality level. Modern trends in the development of modern society are taking place in the context of an intensification of the globalization process, and for further scientific substantiation of the subject of study, it seems most interesting to study the innovation balance as a condition to achieve harmony, consistency, and proportionality of the development of structural elements of the economic system. Nowadays, the technological order calls for compliance requirements along with social and economic stability and increased economic growth in the innovation sphere, which can serve as a faster way out of the current crisis situation in the regions of the country. In the current trend of global production development, more and more attention is paid to the concept of compatible and continuous development of the economy of territories, the environment, and society, which cannot be achieved without the implementation of innovations.

The era of globalization generates not only the dependence of one country on another, but also necessitates the intensive use of elements of scientific and technological progress. In this regard, it is obvious that there is a need for research to promote innovative products in various industries, towards building a "green economy", observing the principle of maximizing economic growth, without affecting the quantity and quality of natural assets and using the resources of the basic and accumulated potential. The problem of increasing the innovation activity of the region resulted from the need to transfer the production processes of the regions to a new stage, which would increase profitability and provide society with quality goods and services in the required quantity.

Innovation balanced development is understood as the ratio of interdependent elements of the system on the basis of coordinated actions that ensure its normal, stable functioning with the continuity of innovation and financial processes. Innovation is a promising area of scientific discussion and an integral part of fundamental research.

Fundamental foundations and basic concepts are reflected in scientific works of: G.A. Bezdudnyi, O.D. Smirnova, O.D. Nechaeva (1998), JI.H. Borisoglebskaya (2010), P.V. Akinin (2015)

conditions (Azrilian et al., 2008), (Smirnova, 1985) and (Takhumova, 2020).

In modern scientific literature, considerable attention is paid to the assessment of innovative activity, N. E. Egorov et al. (2015) propose to use an econometric method to quantify the innovation activity of economic entities of the region at different levels on the basis of an innovative spatial-spatial model, making it possible to assess the role of each participant in the regional innovation development as a whole, as well as broken down by specific municipalities, sectors of the real economy, territorial innovation clusters, etc. Aspects of forecasting the dynamics of innovative activity in industries based on data on changes in the structure and intensity of competition were considered in the article by R. Akhmetzianov, V. I. Kosachev (2016), in trade A. N. Mayorova, et al. (2018). The issues of innovation activity at the enterprise level are considered in the work, the authors analyze the impact of cross-border mergers and acquisitions (M & A) on the innovation of European firms.

A large number of works are devoted to the study of various aspects of the development of cluster initiatives of territorial economic systems and the state. The study (Falck, O. Heblich, S. Kipar 2010) assesses the cluster-oriented policy introduced in Bavaria, Germany, in 1999.

It is believed that the founder of the formation of this theory is Schumpeter, who at the beginning of the twentieth century introduced a system of knowledge about new combinations that are manifested in the process of transformation and development. The formation of scientific thought about the innovation activity development can be traced at all stages of the evolution of the economy. Back in the 17-18th century, the famous historian, culturologist A. Toynbee put forward the idea that the single logic of development is progress. The origin of the fundamental foundations of justifying basic innovations marked the beginning of the first stage, the outstanding representatives of which were J. Schumpeter (1930), N. D. Kondratyev (1920), J. Van Gelderen (1913), S. De Wolf (1924) et al. (Smirnova, 1985) (Mirokhina et al., 2019) (Figure 1).

The second period is devoted to the development of the functional foundations of innovation management, an important role in the formation of scientific thought was played by the ideas of K. Friedman (1955), R. Nelson (1945), G. N. Sorvin and Yu. V. Yakovets (1968).

The third stage is associated with the formation of concepts of innovation systems (G. Mensh, V. Jevons, A. Gelfand, E. Hansen) (Gladilin, 2013).

The fourth period in the development of innovation theories begins in 1980. Thus, K. Freeman (1982) introduced the concept of a system of institutions aimed at creating, changing, and integrating new technologies (Nelson, 2002). B. O.

Lundvall believes that the innovation system is within the state, based on the principle of interactivity with the use of new economically reasonable knowledge (Smirnova, 1985).

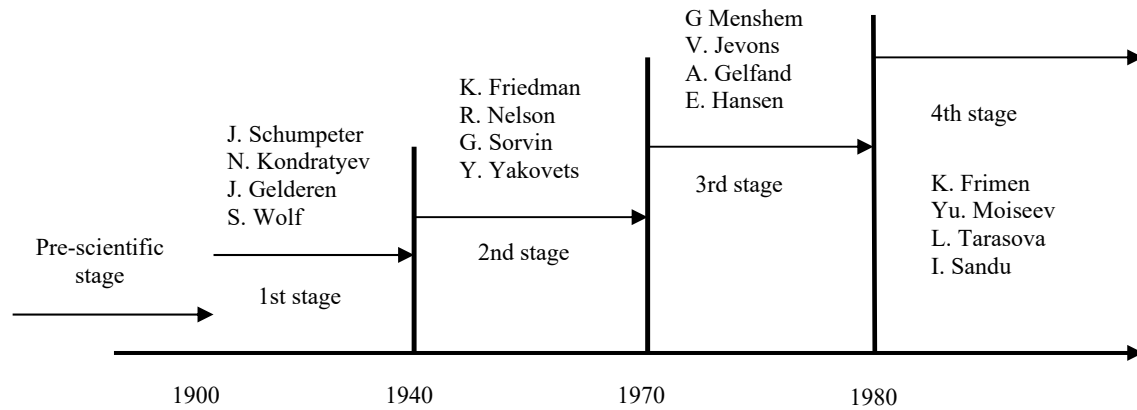


Figure 1: Stages of the formation of the innovation sustainable development theory.

An increase in the population, the role of urban agglomerations, and culture are raising the issue of providing high-quality and in the required amount of food products. The ongoing processes have become an imperative to intensify production through improved technology. The evolution of economic development shows that this has made it possible to increase the population density and improve its well-being. The origins of the development of agriculture took place in Egypt and in a number of Asian countries. In the 6th millennium BC, farmers began to grow legumes and wheat in India, later in northern Africa and Europe. The innovation processes of this period were accompanied by the selection of plant varieties, the search for ways to increase the productivity of livestock, and soil reclamation. Significant progress in agriculture was manifested during the agrarian revolutions. About 10 thousand years ago, at the first stage of the Neolithic transformations, there was an improvement in tools, soil irrigation, and the appearance of primeval barns for storing crops. During the Golden Age of Islam from the 7th - 13th centuries AD, there has been significant progress in the earth sciences, ending cycles of food shortages. This period is characterized by the improvement of agricultural cultivation technologies, the acquired skills began to actively spread beyond the borders of the Arab Caliphate. A massive increase in productivity and the development of new varieties that bring greater yields occurred during the British Agrarian Revolution of the 15th and late 19th centuries. Most scientists call this period

evolutionary in the agriculture development, associating it not only with the emergence of new technology, fertilizers, but also with the emergence of new market segments for the sale of food products. During the period of Scottish agrarian transformations, there is a departure from the rune control system, 1739 is associated with the appearance of the potato. Among the innovations - the appearance of the first working header, the development of a new method of plowing the root-inhabited layer of soil without top layer deformation. During the Green Revolution, there was a massive increase in agricultural products, which has improved global food security and living standards. The emergence of aquaculture, according to scientists of that period, made it possible to bring the growth rate of agricultural production closer to the growth rate of the population. However, such a breakthrough in technology, in methods of soil cultivation, the emergence of new types of fertilizers, pesticides have become a threat to the environment. In this regard, fundamental research began to be based on the search for ways to increase the well-being of the population while reducing the load on the ecosystem using the achievements of the digital economy. It can be achieved by balancing the economic system elements.

2 RESEARCH METHODOLOGY

Summarizing judgments about the content side of the concept of "balance", we can highlight the nature of its formation (Figure 2).

Balance is the property of a system to maintain a set of certain invariants with respect to changes caused by the determinants of transformations. Balance has several contexts and areas of study.

Modern trends in the development of modern society are taking place in the context of an intensification of the globalization process, and for further scientific substantiation of the subject of study, it seems most interesting to study the innovation balance as a condition to achieve harmony, consistency, and proportionality of the development of structural elements of the economic system.

Innovative balanced development is understood as the ratio of interdependent elements of the system on the basis of coordinated actions that ensure its normal, stable functioning with the continuity of innovation and financial processes.

It is possible to explicate the concept and nature of the origin of innovations from the point of the scientific views of G.F. Hegel. Despite the denial of the evolutionary approach to development, his judgment that the development process is determined by the sequence and connection with the previous cycles seems to be interesting. The interrelation of opposites provides the basis for functioning, and the world is organized in an orderly, natural, and rational way (Hegel, 2002). The epistemology of Hegel's teachings is revealed through the constituent parts of the philosophical system, which includes logic, philosophy of nature, and philosophy of spirit (Figure 3).

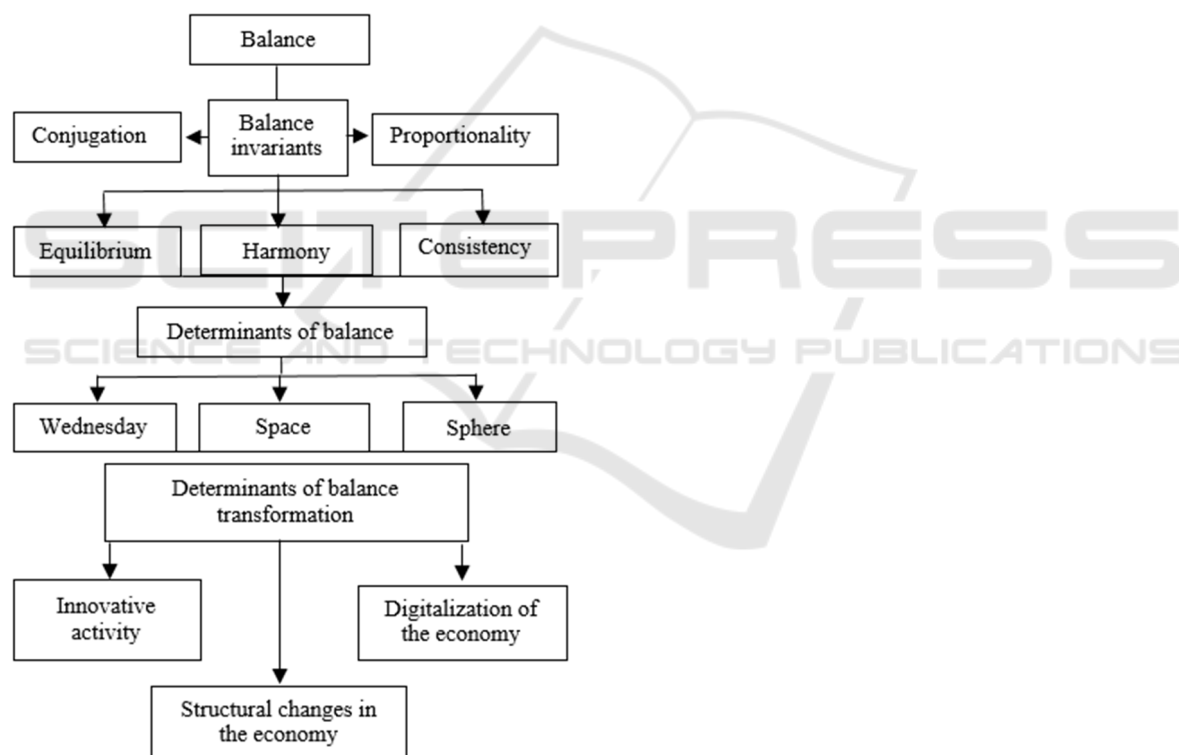


Figure 2: The nature of the origins of theories of balance.

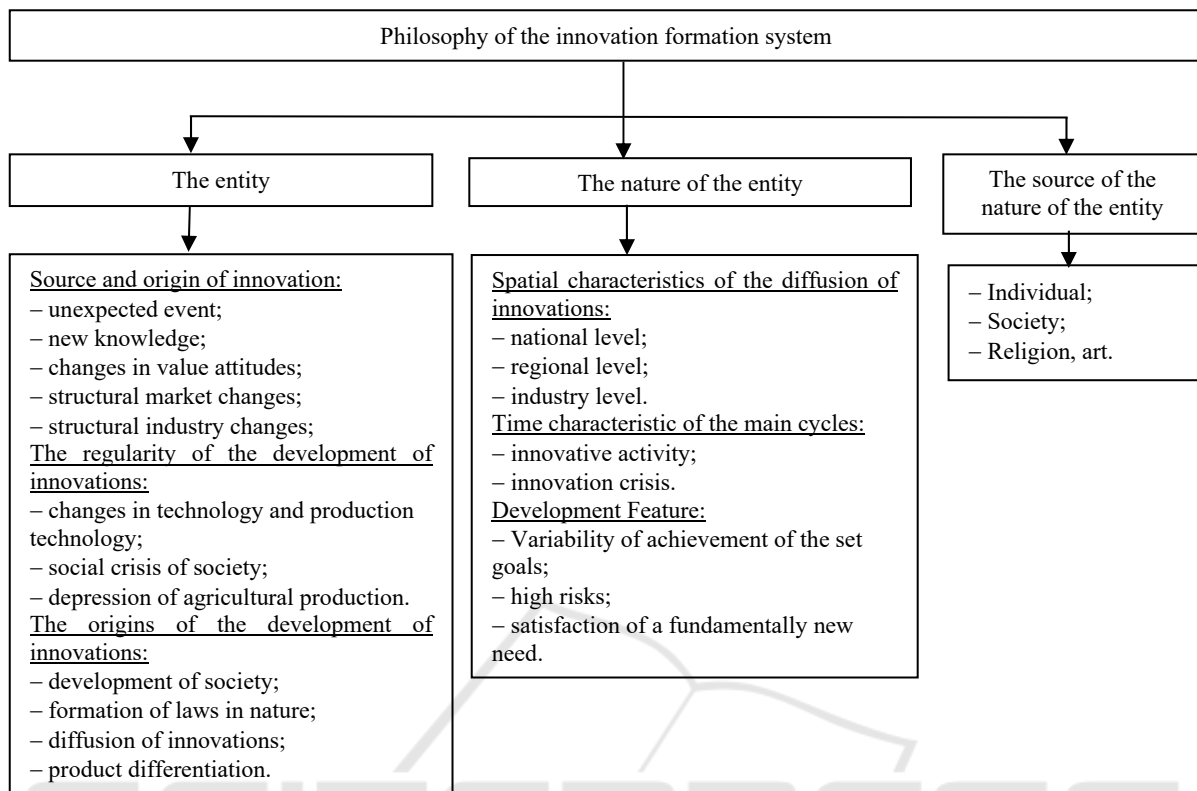


Figure 3: The origin of the theory of sustainable innovation development based on the system of F. Hegel.

The development of social and economic, technological, international processes is based on the acceleration of scientific and technological progress. In agricultural production, this is achieved through constant renewal based on the achievements of modern science and technology.

In the world scientific practice, there are enough approaches to the study of the level of sustainable development of regions. However, from the point of a balanced approach, scientific judgments go through a stage of gradual formation with an emphasis in research on harmony and proportionality of development.

Thus, the developed classification of innovations implementation indicators by the Commission of the European Community, on the basis of which a system of indicators was proposed, seems interesting. The assessment methodology in comparison with the indicators of competitiveness deserves attention. This can be achieved on the basis of an innovation policy in terms of increasing the competitiveness of a market entity. On the basis of a balanced system of indicators, including indicators of development, promotion, the efficiency of innovation, it became

possible to develop an innovative activity index of regions.

3 RESULTS OF RESEARCH

Based on the generalization of theoretical, practical scientific ideas on the issues of balanced innovative regional development, it seems possible to identify the key factors and conditions, affecting the harmonious development process in the external and internal environment key of the forms of agrarians formation in the region (Figure 4).

To summarize, one can make a judgment about the multifaceted nature, complexity, inexhaustibility of scientific judgments, and ideas about the balanced development of economic systems.

It is believed that a significant contribution to the formation of the theory of sustainable development of the modern scientific school was made by WCED representatives, who, as the main conclusion in “Our Common Future”, a report put forward a hypothesis about the need to achieve sustainable social and economic development with the obligatory consideration of the environmental factor. In their

opinion, sustainable development implies meeting the basic needs of individuals and only in a prosperous society, there will be no poverty and economic crises. All consumed goods should be spent in such quantities that they will be enough for the future generation.

The formation of theories of balance has been actively developing in the last few decades. Representatives of the modern scientific school such as: Abdeev R. F. Gladilin A. V., Selkov A. V. etc. identify the concepts of “Balanced Development” and “Sustainable Development”. However, in our opinion, each interpretation has its own lexical meaning and sustainable development is possible only if a number of conditions are met, including the obvious fact of the need to achieve a balanced development of the studied conditions, phenomena in economic systems (Gladilin, 2013) (Schumpeter, 2007) (Lundvall, 1992).

Balance is the property of a system to maintain a set of certain invariants with respect to changes caused by the determinants of transformations.

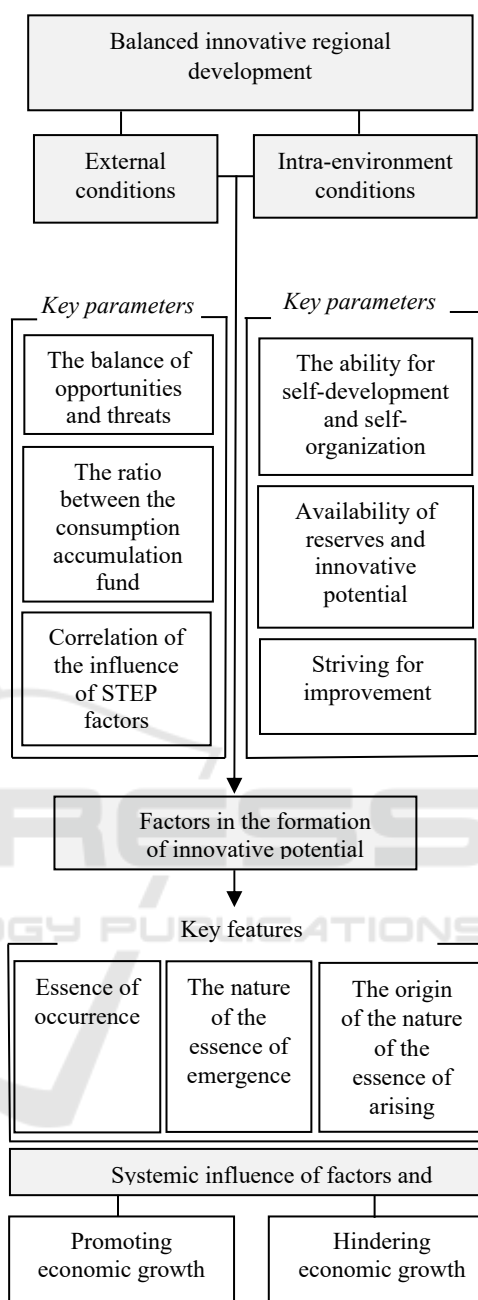


Figure 4: Systematization of conditions and factors affecting the balanced innovation development of regions (compiled by the author).

Based on the analysis of the factors of the balanced development of the region, the classification of the main areas of the balanced innovative development of the agricultural production of the territories was determined (Figure 5).

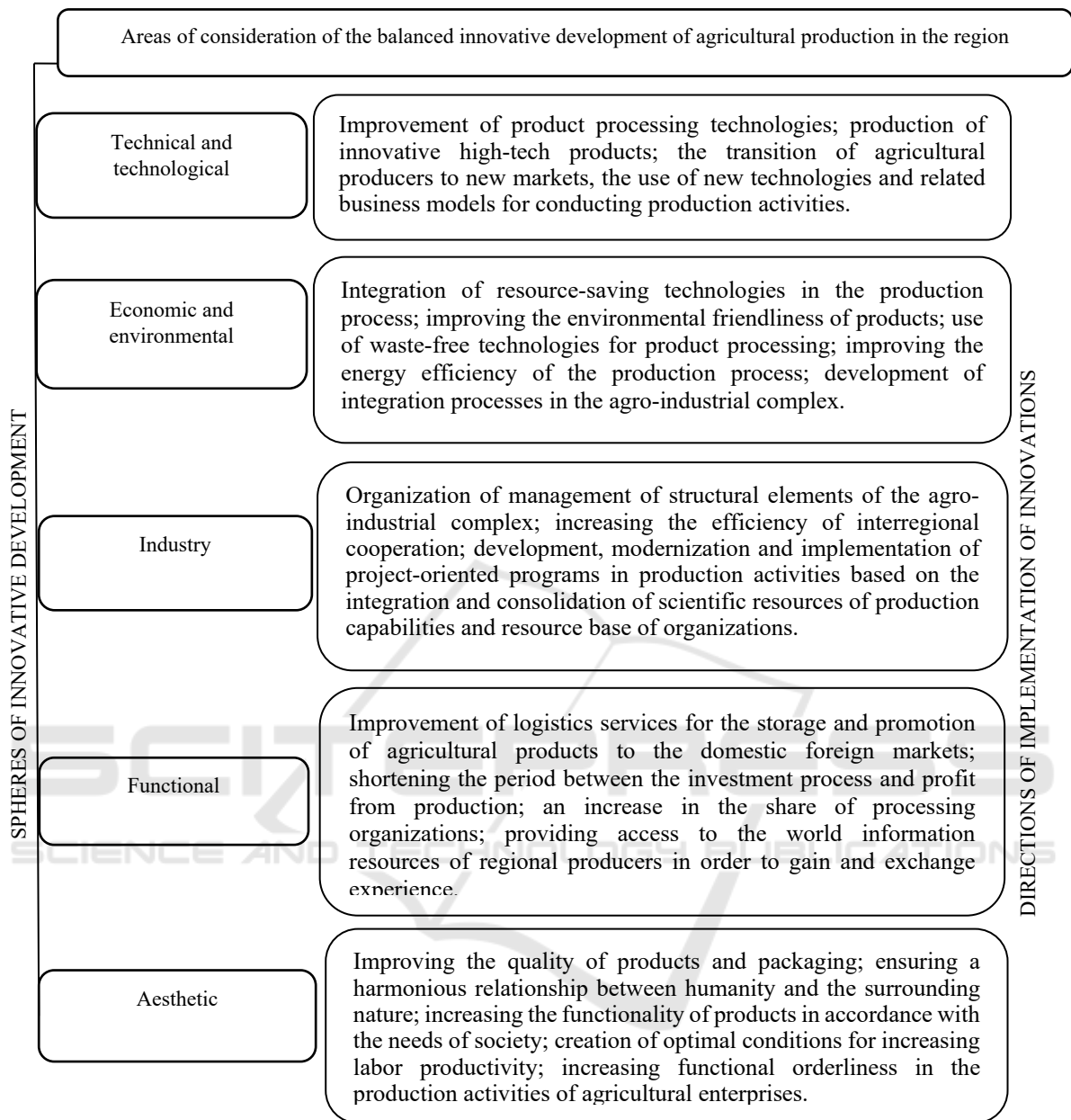


Figure 5: Areas of consideration of balanced innovative development and directions of implementation in the agrarian region (compiled by the author).

4 RESULTS AND DISCUSSION

Thus, the results will help to substantively determine the need for innovations, depending on the goals of implementing an innovation policy that contributes to the effective functioning of agricultural production and the creation of conditions for sustainable development of the region. To summarize, one can make a judgment about the multifaceted nature,

complexity, inexhaustibility of scientific judgments, and ideas about the balanced development of economic systems. Balance is understood as the spatial and coordinated relationship of many elements of the system that ensure the effective functioning of the whole in order to create conditions for advanced growth. Balanced innovative regional development is the ratio of interdependent elements of the system based on coordinated actions that ensure its normal,

stable functioning with the continuity of innovation and financial processes.

5 CONCLUSION

The paper developed the theoretical aspects of the formation of sustainable development of the regional system based on the methods of the unity of the logical and historical approaches to research, formalization, and generalization: the terminological apparatus was refined and supplemented, including the author's interpretation of the concept "balanced innovative regional development", which means the ratio of interdependent elements of the system on the basis of coordinated actions that ensure its harmonious, stable functioning with the continuity of innovation and financial processes. The results can be used in the development of the main directions of the national cluster policy and the choice of tools for their implementation. The results formulated in the study make it possible, on a scientific basis, to improve the understanding of the regional sustainable development and to develop instruments of influence to increase the efficiency of agricultural production and accelerate the innovation process within the study area.

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