



CONTROL INNOVATIVE THE DEVELOPMENT OF THE BIOECONOMIC BRANCHES OF THE REPUBLIC OF UZBEKISTAN

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ABSTRACT

The purpose of the research work is to develop an organizational and economic mechanism for managing the innovative development of bioeconomy sectors based on an analysis of the resource potential of the regions. The objectives of the study are to clarify and systematize the conceptual apparatus of economic science in relation to the branches of bioeconomics based on the analysis of theoretical ideas about the essence, structure and principles of bioeconomics, identifying and summarizing its priority areas. The object of the research is the innovative development of bioeconomy branches. The subject of the study is the institutional environment and organizational and managerial interactions that arise in the process of managing the innovative development of bioeconomy industries.

KEYWORDS. *Innovation, development, regional agro-industrial complex, bioeconomy*

INTRODUCTION

The innovative development of bioeconomy sectors is an essential condition for the transition from a resource-based economy to an innovative economy. This transformation is driven by high pace scientific and technical development, promotion efficiency and reduction of terms of commercialization of new technologies.

The prerequisites for the formation of bioeconomy industries are the growth in the use of renewable energy sources, the emergence of new methods and technologies for the deep processing of various raw materials, as well as the introduction of biotechnologies into all spheres of human life.

The active development of biotechnologies is due not only to the achievements of biochemistry and molecular biology, but also to the crisis phenomena in traditional technologies, primarily in the field of ecology and energy against the backdrop of new trends, the need to ensure the food security of the state, preserve the resource potential, increase the life expectancy of the population and maintain a healthy gene pool of the nation.

On November 2, 5, 2020, within the framework of activities for the development of biotechnology, the Decree of the President of the Republic of Uzbekistan was approved "ON COMPREHENSIVE MEASURES TO DEVELOP BIOTECHNOLOGIES AND IMPROVE THE SYSTEM OF ENSURING THE BIOLOGICAL SAFETY OF THE COUNTRY". The strategic goal of the Program was the entry of the Republic of Uzbekistan into a leading position in the field of biotechnology. The development program is aimed at

creating a globally competitive bioeconomy sector, which, along with nanoindustry and information technology, should become the basis for modernization and building a post-industrial economy. Unfortunately, as a result of the implementation of the Program, the planned indicators were not achieved, and at present there is no active program directly aimed at the development of biotechnologies. Separate areas of biotechnology are indirectly traced in a number of other state development programs.

Despite the importance of the development of biotechnologies, the scientific community has not developed a unified understanding of the essence of the bioeconomy based on them, a lot of research is devoted to the green economy, environmental economics, circular economy, and although these categories have something in common, they are all based on different principles, which leads to the need to systematize theoretical ideas about the essence and principles of bioeconomics.

Against the backdrop of the active development of biotechnologies around the world, studies aimed at improving methods for determining the place and role of regions in a single economic and biotechnological space of the country by assessing their resource potential and opportunities for innovative development of the bioeconomy are of particular relevance.

The relevance of developing a methodology for assessing the level of development of the bioeconomy is also due to the need for an optimal spatial distribution of resources that determine the territorial distribution of the industry and the



direction of development of the socio-economic system.

Except Togo, exists objective need in systemic methodical approach effective management of innovative development of bioeconomy sectors based on effective mechanisms of interaction between the state, the business community and the scientific school. So the way need raise energy efficiency, efficient use of waste, development renewable energy based on biomass, greening agro-industrial sectors, sustainable development of agriculture economy, production new products nutrition, the development of medical technologies and the improvement of the health of the nation have determined the relevance and strategic significance theoretical, methodological and applied research in the field of innovation development management branches of the bioeconomy through the introduction of biotechnologies.

MATERIALS AND METHODS

Theoretical and methodological basis of the study were the works of domestic and foreign scientists, revealing the issues of innovative development of bioeconomy industries. The instrumental base for the study was the dialectical method, observation, the method of comparison and grouping, economic analysis and synthesis, economic and mathematical modeling, the method of graphical presentation of data.

Achieving this goal predetermines the formulation and consistent solution of the following set of tasks:

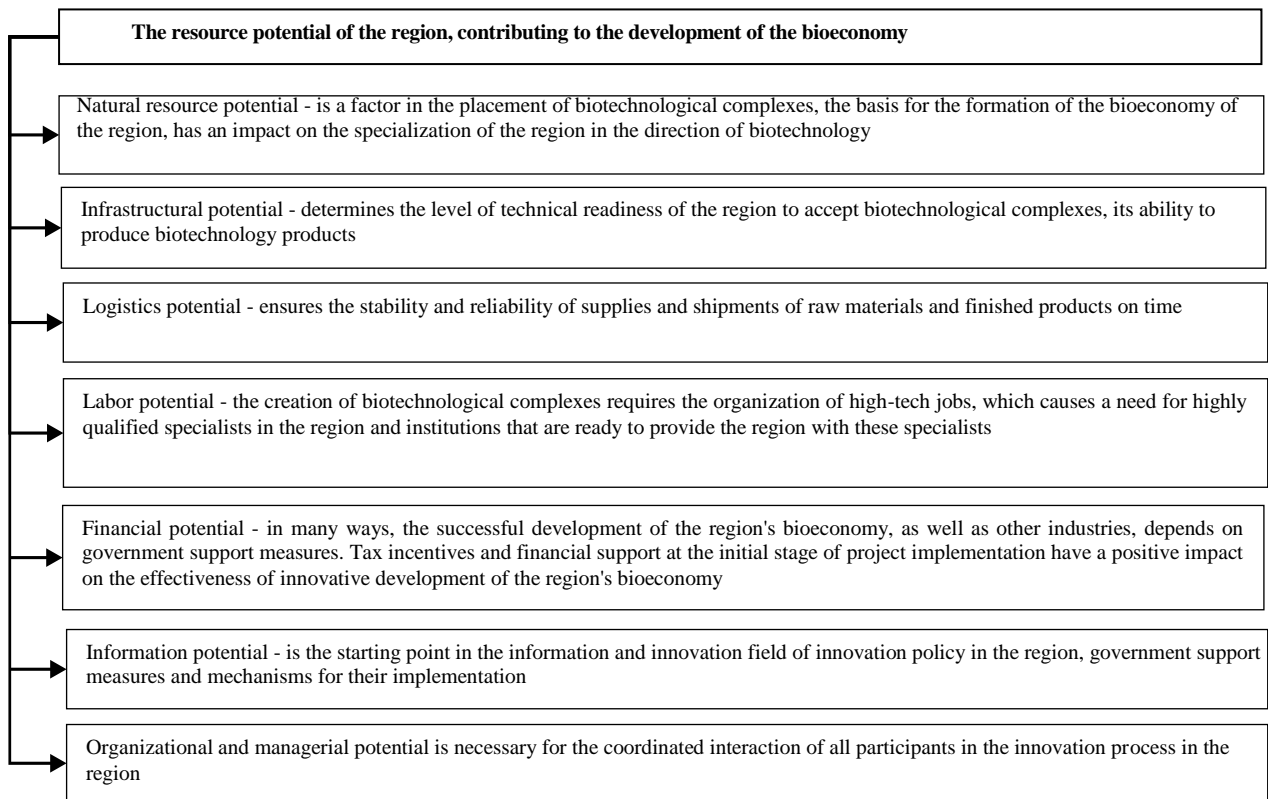
1. Develop and test methodological tools for assessing the innovative development of bioeconomy sectors based on an analysis of the elements of the resource potential, which allows us to propose tools to stimulate the innovative activity of biotechnologies.
2. To develop a methodology for analyzing the effectiveness of the management system for the innovative development of the bioeconomy, which makes it possible to determine the effective mechanisms of state regulation in the field of biotechnology.
3. Develop a methodological approach to assessing the level of innovative development of bioeconomy sectors based on the analysis of investment projects in the field of biotechnology.
4. To develop an organizational and economic mechanism for managing the innovative development of the bioeconomy based on the proposed conceptual model.

RESULTS AND DISCUSSION

The need for effective management of the bioeconomy through the use of biotechnologies and a change in the paradigm of economic development sets the task of neo -industrial transformation of the national biotechnological order, involves the creation of a competitive, sustainable and structurally balanced economy capable of effective self-development. Bioeconomy makes it possible to radically change approaches to the development and production of agricultural, food, pharmaceutical and other products, ensures that industries reach the VI technological level, in line with global trends.

At the same time, despite the active use of the term "bioeconomics", a number of domestic publications note the complexity and semantic ambiguity of this concept, and an analysis of the available literature and official documents of various countries shows that at present there is no single approach to understanding the bioeconomy. On the basis generalizations opinions researchers relatively concepts "bioeconomics" the author's definition of this category is formulated: *bioeconomics is an economy based on the use of resource potential based on biotechnology, contributing to the reduction dependence on non-renewable natural resources, reducing the negative impact on ecosystems, ensuring food security for effective and sustainable socio-economic development.* An analysis of domestic and foreign studies has shown that at the moment in the scientific literature there are many methods for assessing the resource potential, both at the regional and sectoral levels. These methods make it possible to study the state of individual components of the economy, but today there is no approach to assessing the resource potential of the region in the framework of the creation and development of the bioeconomy.

Based on the works of N.N. Kolosovsky, the author identified four basic elements of the region's resource potential: natural resources, infrastructure, logistics and labor. Based on the problems of development of complex and combined forms of production, which consist in organizing management processes, accelerating the process of technical structures in the current economic conditions and the information field in accordance with political interests, indirect elements of the resource potential were identified: financial, informational, organizational and managerial (Fig. 1).



Source: compiled by the author

Picture 1. Elements resource capacity region

Due to the objective need to improve methodological approaches to the territorial distribution of assets of biotechnological subjects of the regional economy that can influence the investment attractiveness and competitiveness of the

regional economy, as well as contribute to the innovative development of the bioeconomy, a methodology for assessing the resource potential of the region was developed and tested.

Index	Calculation
Sic - Level investment in biotechnology region in general volume investment region. IC n - The volume of investments in biotechnological projects, million soums. ICr - Volume investment in region, million sum.	$Sic = \sum ICn$ (11) <i>ICr</i>
Sv - Level production products biotechnology in general volume production in region. Vn - Production of biotechnology products, million soums. VR - General volume production products in region, million sum.	$Sv = \sum Vn$ (12) <i>Vr</i>
Sit - Tax level income from tax at a profit from biotech industries in budget region in general volume income on tax at a profit. ITn - Tax on profits from biotechnology projects, million soums. ITr - Income on tax on the profit in region, million sum.	$Sit = \sum ITn$ (13) <i>ITr</i>
Spt - Level tax income on tax on the property from biotech industries to budget region in general volume income from tax on the property of organizations. PTn - Tax on the property from biotechnological projects, million sum. PTR - Income on tax on property organizations in region, million sum.	$Spt = \sum PTn$ <i>PTr</i> (14)
SW - Level new workers places in biotechnological industries from again created jobs in the region. wn - Quantity new workers places in biotechnological industries, units wr - Quantity again created workers places in region, units	$Sw = \sum Wn$ (15) <i>Wr</i>

Source: compiled by the author

Table 1. System of indicators for determining the level of innovative development of the bioeconomy of the region



The author made an attempt to combine the methods used in corporate finance: economic and mathematical modeling, cash flow discounting to evaluate the effectiveness of investment projects in the field of biotechnology with an assessment of the positive effect on the bioeconomy as a result of the implementation of such projects.

Justification of the investment project involves an assessment technical solutions and documents, calculation of technical and economic indicators and indicators of economic efficiency. All of the above indicators are aimed at assessing the effectiveness of investments, but within the framework of a separate project, they are unable to assess the contribution of the project to the bioeconomy, therefore, in the course of the study, a number of indicators were formed to assess the level of development of the bioeconomy of the region (Table 1).

The formed system of indicators allows not only to assess the impact of investment projects in the field of biotechnology on individual indicators of the regional economy, but also to determine the level of innovative development of the bioeconomy:

where, bioe - level innovative development bioeconomy, n is the number of indicators.

$$Bioe = \frac{\sum Sic;Sv;Sit;Spt;Sw}{n}$$

A universal economic and mathematical model designed to evaluate the effectiveness of investment projects in the field of biotechnology allows:

- Create rating system projects in areas biotechnology;
- Evaluate all projects according to a single methodology, taking into account the specifics of cash flows;
- When evaluating, take into account the specifics of biotechnological production in terms of increasing the pace of production.

Having assessed the economic efficiency of projects in the field of biotechnology, we propose to analyze the sensitivity of NPV and IRR to changes in the parameter "growth rate of production capacity" within the framework of the hypothesis put forward in this study, which assumes that a long time to achieve design productivity is specific to the cash flows of biotechnology projects.

With the help of the proposed organizational and economic mechanism for managing the innovative development of the bioeconomy, an opportunity is formed to determine and implement the main directions of biotechnologies, which contributes to the even distribution of financial resources, as well as the innovative development of the bioeconomy as a whole.

CONCLUSION

As a result of the study of theoretical and applied aspects of the innovative development of bioeconomy sectors based on effective management, the author made the following conclusions: Having considered the concept, principles and priority areas of the bioeconomy, we can conclude that its fundamental foundations are increasing energy efficiency, efficient use of waste, the development of renewable energy based on biomass, the greening of the industrial sector, increasing the sustainability of agriculture, the production of new food products, the development of medical technologies based on biotechnology. In addition, it allows you to radically change approaches to the development and production of agricultural, food, pharmaceutical and other products, opens alternative way solutions problems associated with security health and using natural resources ensures the output of industries to the VI technological level, corresponding to world trends. Trends in the development of biotechnology are aimed at extremely a wide area of human activity: from food production to biodegradable plastics; from new plant varieties and animal breeds to biofuel additives; from water and soil purification to the elimination of industrial pollution. The result of the introduction of biotechnology in human life is to improve the health of the nation, improve the level of healthcare, provide people with high-quality and safe food, solution environmental problems usage renewable bioresources in industry and energy to reduce dependence on fossil raw materials. The implementation of the proposed organizational and economic mechanism for managing the innovative development of bioeconomy sectors creates comfortable conditions for the implementation of biotechnological complexes, contributes to the growth of tax revenues of the regional budget, an increase in employment and infrastructure development, which in turn has a positive effect to the level socio-economic development region, and the presence of serious scientific backlog and experienced developments in our country makes it possible in the coming years to significantly expand the use of biotechnologies for the mass production of products with new properties and becomes a driver of innovative development of the bioeconomy Uzbekistan .

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