THE INTRODUCTORY PART

Rural areas of Kazakhstan are characterized by pronounced spatial and economic heterogeneity. At the beginning of 2024, there were about 6.2 thousand rural settlements (SNPs), of which only 1.2 thousand are classified as core settlements, and 2.3 thousand adjacent SNPs form rural clusters. This provision highlights the scale of the urgent problem of territorial differentiation of rural settlements and the need to develop specialized approaches to the management and sustainable development of rural areas.

This project is aimed at developing effective regulatory mechanisms focused on sustainable rural development through a clear differentiation of SNPs. Sustainable rural development presupposes an integrated approach to solving the economic, social and environmental problems of rural areas, and differentiation will deepen the classification of rural areas according to the Concept of Rural Development of the Republic of Kazakhstan for 2023-2027 and will take into account the individual characteristics of rural areas. During the project, it is planned to develop and test a GIS model of spatial rural development for planning and monitoring development.

The interdisciplinarity of the project is expressed in the integration of economic, social and geoinformation approaches for a comprehensive study of the spatial development of rural areas.

THE PURPOSE OF THE PROJECT

The aim of the project is to identify the socio-economic potential and parameters of rural growth poles, taking into account new challenges and the specifics of their differentiation, as well as to develop practical recommendations for government agencies and local communities aimed at improving the quality of the economic space and the quality of life of the population.

Special attention will be paid to the development of differentiated development strategies that take into account the unique characteristics and needs of different types of rural settlements. It is expected that as a result of the introduction and use of GIS models, it will be possible to visualize and forecast the spatial development of rural areas, which contributes to informed and prompt decision-making in the field of public planning and management.

PROJECT OBJECTIVES

To achieve the goal, the following tasks should be consistently solved:

Task names Brief justification of the role of each task in achieving the project objective Measurable indicators Level of technological readiness of developments

1. Theoretical and methodological foundations of the study of spatial development of rural areas 1.1 Theoretical approaches and patterns of spatial development of the territory Generalization and synthesis of modern concepts of spatial development of the economy

Substantiation of indicators and indicators of rural differentiation

Development

Substantiation of the parameters of the GIS model for spatial analysis of rural areas (number of layers, development of algorithms, number of cartographic models, etc.) Publication of articles in peer-reviewed scientific journals

Obtaining an author's certificate for a computer program based on a GIS model of rural development

Experimental approbation of the research results

1.2 Methodology for assessing the spatial development of rural areas in Kazakhstan

1.3 Fundamentals of the digital system of spatial development of rural areas

2. Analysis and assessment of the sustainability of rural development in the Republic of Kazakhstan

2.1 Assessment of the level of spatial heterogeneity in rural areas of Kazakhstan Identification of identified groups of rural areas with different levels of socio-economic development

Conducting a sociological study of the compliance of rural needs and related support programs

Definition of goals and objectives, creation of a database on certain parameters of the GIS model for the analysis of spatial development of rural areas

2.2 Analysis, identification and diagnosis of socio-economic differentiation of rural areas of Kazakhstan

2.3 Evaluation of the effectiveness of regional development programs

2.4 Building a GIS model of territorial planning and management

3. Improving the mechanisms of spatial development of rural areas of Kazakhstan

3.1 Poles of growth and spatial structure of rural areas Determining the level of economic activity of potential centers of economic activity

Adaptation of human development and quality of life indices by differentiated types of rural areas

Development of a system of differentiated tools and support measures for different types of rural areas

Development of specific scenarios for the spatial development of rural areas

3.2 Priorities and mechanisms for improving the quality of life of the rural population

3.3 Differentiated system of state regulation of sustainable rural development

3.4 Development of models for forecasting rural development, taking into account demographic, socio-economic trends

EXPECTED RESULTS:

The main expected results can be indicated:

- Development of a GIS model that allows the integration of spatial data to improve planning, management and forecasting of changes in rural areas;
- Development of models for forecasting rural development, taking into account demographic, socio-economic trends.

- Development of practical recommendations for government agencies and local communities to improve the efficiency of the use of geographical, cultural and human capital, and, as a result, the quality of economic space and the life of the population.

Following the results of the project, the works corresponding to the requirements of the tender documentation will be published.:

1) - at least 3 (three) articles and/or reviews in peer-reviewed scientific publications indexed in the Science Citation Index Expanded of the Web of Science database and/or having a CiteScore percentile in the Scopus database of at least 50 (fifty) or at least 2 (two) articles or reviews in a peer-reviewed scientific publication indexed in the Science Citation Index Expanded and included in the 1st (first) or 2nd (second) quartile of impact factor in the Web of Science database and (or) having a CiteScore percentile in the Scopus database of at least 70 (seventy);

2) at least 2 (two) articles or reviews in a peer-reviewed foreign or domestic publication recommended by the COKNVO, One of the articles should be classified as multidisciplinary (multidisciplinary or interdisciplinary practical application);

3) a collective monograph of at least 12 pp.

4) at least 1 author's certificate.

5) Based on the results of the project, it is planned to prepare at least 1 (one) Doctor of Philosophy (PhD) with protection no later than two years after the completion of the project.

The target consumers of the expected results are the central and local government authorities, public funds for rural development, and the community of farmers.

The project makes a scientific contribution to the development of theories and methodologies of spatial development, social differentiation and territorial planning. The results obtained can be used as a basis for further research in the field of sustainable rural development, regional economics and digital management of spatial systems.

The development of a GIS model that will integrate spatial data to improve planning, management and forecasting of changes in rural areas is of practical importance and potential value for commercialization.

The economic effect will be expressed in optimizing the use of resources. The development of forecasting models taking into account demographic and socio-economic trends will make it possible to allocate investment resources more efficiently. The identification of growth poles and priority areas for rural development contribute to the creation of new jobs and an increase in household incomes. The social effect will be reflected in an increase in the quality of life of the rural population. The development of priorities and mechanisms for improving the quality of life will lead to improved access to medical, educational and social services. The use of differentiated models of government regulation will make it possible to more accurately direct resources to support rural areas.