JOURNAL OF MULTIDISCIPLINARY SCIENCES AND INNOVATIONS
VOLUME 04, ISSUE 09
MOPNTHLY JOURNALS
ISSN NUMBER: 2751-4390
IMPACT FACTOR: 9,08

ECONOMIC MECHANISMS FOR GREENING THE GREEN ECONOMY IN THE REGION

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Annotation: Accelerating regional development, creating favorable living conditions for the population, conducting a comprehensive study of the real situation in the regions, and using modern technologies in line with the requirements of the time lead to an improvement in the quality of life. This article discusses the factors influencing the greening (ecologization) of regional economies.

Keywords: education sector, economists, ecological conditions and environmental safety, integral indicators, diversification, advanced functional capabilities, market relations.

Since the early years of independence, the development of the education sector in Uzbekistan has been considered a priority of state policy, and a continuous education system known globally as the "Uzbek Model" has been created. Significant results have been achieved in the development of all types of education, including the establishment of a fundamentally renewed higher education system. A number of laws, decrees, and programs aimed at organizing the economy on an entirely new basis, liberalizing it further, improving its legal framework, and modernizing and diversifying production have been adopted and are being consistently implemented.

In Uzbekistan's economic development, the training of highly qualified economists who meet global standards plays a vital role. Among the disciplines contributing to this goal, the subject **"Economic Geography and Ecology"** holds special importance. It provides future economists with knowledge about natural resources and their distribution across the world and Uzbekistan, global and national population patterns, global industry, agriculture, transport systems, international economic relations, geo-ecological problems and their solutions, as well as ecological conditions and environmental safety in Uzbekistan.

In today's rapidly developing market environment, the need to study this discipline is growing day by day. A modern specialist must thoroughly master the principles of economic geography and ecology, which is a key requirement of the era.

Geographic Information Systems (GIS) represent socio-technical complexes based on modern digital technologies that provide data about the spatial and temporal characteristics of socio-economic systems. The interaction between geoinformatics and cartography has led to the emergence of **geoinformation mapping**, which involves the automated information and cartographic modeling of natural and socio-economic geosystems using GIS technologies. Primarily, this refers to the systematic creation and use of maps designed to support management decision-making.

The main advantages of **interactive geoinformation mapping** include the ability to display any part of a territory with a desired level of detail, obtain information about the condition of a regional system, collect and correct data, solve numerous computational problems, and apply analytical tools for data processing and the integration of new information. Furthermore, users have various forms of access to analysis results, such as tables, maps, and graphics.

Interactive geographic information maps are digital maps visualized using software tools and based on traditional symbol systems. They are intended for territorial analysis, solving

information and computational problems, linking statistical data, conducting mathematical analysis, and displaying results both in tabular and cartographic form.

In modeling environmental and economic systems, **raster GIS methods** are widely used, enabling the thematic visualization of data through color differentiation. Developed ecological and economic maps serve as valuable databases for administrative bodies and regional authorities responsible for land use, socio-economic planning, and environmental protection. Using GIS technologies allows statistical data to be processed and visualized efficiently and in real time.

One of the key features of geoinformation mapping is its **multi-scale nature**, which allows the analysis of existing ecological and economic situations at different levels, identification of cause-and-effect relationships, and the development of strategies and schemes for the advancement of productive forces.

Developing diagnostic indicators for regional socio-economic development using GIS technologies and creating related software ensures the systematization of territorial development databases and provides opportunities to:

– clarify the competencies of central, regional (provincial), and local authorities in organizing the rational placement of production capacities and improving economic management tools at the regional level;

– optimize the sectoral structure of regional economies and identify strategies for the development of priority industries;

– enhance investment attractiveness, determine the impact of production forces on local environmental conditions, and assess the effects of production processes on the natural environment.

At present, the global use of GIS technologies and database creation plays a decisive role in the full automation of information across all sectors, including economic activities. For example, the U.S.-based **ESRI** company has developed software designed for working with maps and geographic data, which is widely used in practice. Providing up-to-date statistical and cartographic materials that reflect the current and future socio-economic situation, as well as analytical and predictive mapping documents, remains a complex challenge.

In particular, the effective analysis of socio-economic and environmental data requires the use of fast and interactive digital technologies. Utilizing such technologies is crucial in addressing these challenges. GIS technologies significantly enhance capabilities for analyzing socio-economic and environmental indicators and making informed management decisions.

The use of GIS in **geodesy and cartography** offers numerous advantages, including a sharp reduction in the time and cost required for data processing and publication. Additionally, it shortens the time needed to obtain information while increasing the volume and quality of accessible data.

To create **ecological maps**, the following primary data sources are necessary:

– remote sensing data of the Earth;

– thematic maps or similar subject maps of the studied area;

– field observation data;

– environmental monitoring and stationary observation data;

– statistical data on public health, pollution levels, and natural resource use.

In conclusion, achieving the strategic objectives of national and societal development requires the full integration of **Geographic Information Systems (GIS)** into land management, environmental protection, regional planning, and land-use management practices. This integration is essential for informed and effective decision-making in sustainable regional development.

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