

**ECONOMICS AND MANAGEMENT
OF NATIONAL ECONOMY, SOCIALIZATION
OF NATIONAL MODELS OF ECONOMIC SYSTEMS**

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**SPATIAL DIFFERENTIATION
OF ECOLOGY AND ENVIRONMENT
IN THE CONTEXT OF TRANSFORMATION
TO A GREEN ECONOMY OF COMMUNES
OF THE ŚWIĘTOKRZYSKIE PROVINCE (2010–2020)**

Human activity affects the environment, its resources and the stability of ecosystems. The problem of management of environmental resources, acquires particular importance in the connection of their limitedness and their impact on the perception of the individual in the region's environment.

Natural resources are an individual (endogenous) economic category building the wealth of the region. They are conditions, or enabling circumstances, but also an important determinant of socio-economic development. Overuse of resources and degradation of the environment negatively shape the wealth of the region and can be an environmental barrier to its development [1].

The aim of the article was to assess the spatial differentiation of ecology and environment of municipalities of the Świętokrzyskie

voivodeship in 2010-2020 using a synthetic measure. The indicated objective was realized by analyzing statistical data to identify the processes of change taking place in the analyzed area, construction of a synthetic measure allowing linear ordering of the studied units [2–8].

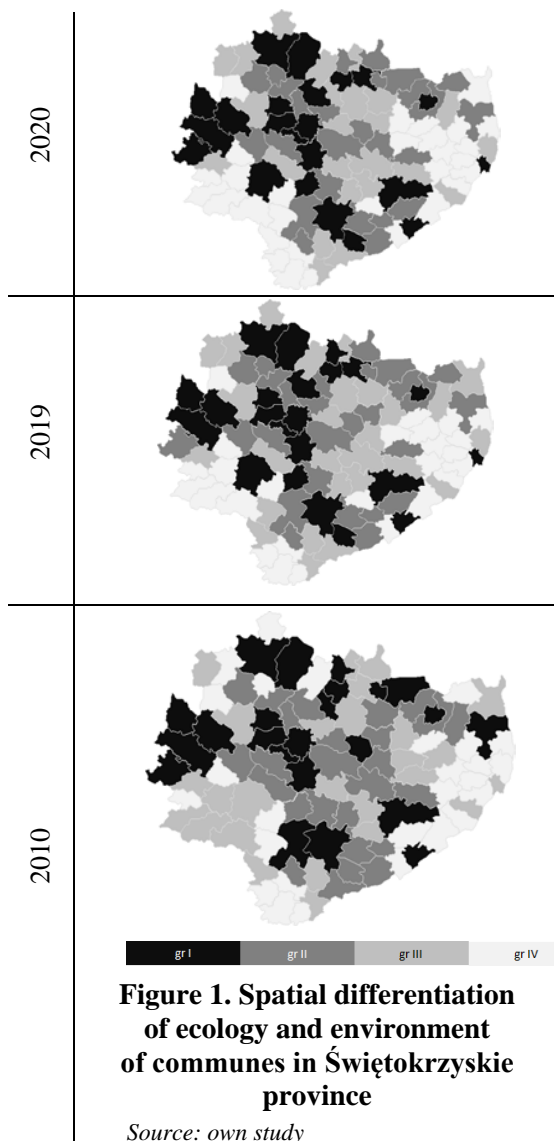
The environment is a natural determinant of economic development. Quantitative, (or qualitative) expansion of natural capital has certain limits. The environment is a source of raw materials and energy, provides geographic space, a field of economic activity, a place of residence or recreation [9; 10; 11].

Today's economic system is faced with the challenge of how to respond to growing needs while confronting quality of life and climate change, as well as the depletion of raw materials, the deterioration of our global environment [12]. The green economy allows for the harmonious management of local resources, contributing to human well-being and enhancing social justice, while significantly reducing environmental risks and resource scarcity. It is low-carbon, uses natural resources sparingly and is socially supportive.

Green economy refers to the restructuring of economic activities and infrastructure to ensure greater returns on natural, human and economic capital. As a result of the research procedure, the spatial differentiation of municipalities in the Świętokrzyskie region from 2010 to 2020 was presented in terms of the level of the measure of ecology and environment. In 2010, the synthetic measure ranged from 0.21 to 0.56, in 2020 – 0.19 to 0.57. Statistical characteristics of the synthetic measure in 2020 compared to 2010 indicate a slight increase in the diversity of the effect of the phenomenon (lower and upper (quartile.), the gap, variance, kurtosis).

Figure 1 shows the spatial variation of the synthetic measure in 2010, 2019 and 2020 (black color the best units, the lighter color the weaker units).

The commune's position in the ranking was determined, among other things, by the level of wastewater discharged and treated, the population using the wastewater treatment plant, the level of mixed waste, the share of industry in water consumption, legally protected areas, ecological lands, the share of green areas in the total area or the area of forest land.



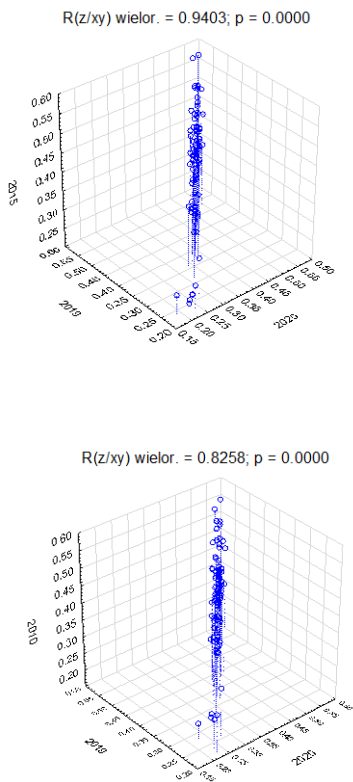
The effect of differentiated development in territorial systems is the processes of polarization and divergence, which can lead to depopulation and degradation of some areas.

The transition to a green economy is possible only with sustainable development [13].

The green economy is a way of obtaining and using resources, the emergence of new industries for waste recycling, emission-free energy production, absorption of greenhouse gas emissions, and increased quality of life. A new aspect of defining the green economy is the inclusion of social references and environmental aspects in every decision and production process. The concept of the green economy is becoming multidimensional pointing to economic, social and environmental dimensions [14].

The benefits of a green, closed-loop economy include: improved resource and environmental performance, a smaller carbon footprint, less dependence on fossil resources, and the valorization of by-product and waste materials from multiple sources. The concept focuses on the idea of

recycling, reusing resources. Environmental, social and economic problems are determined by multidimensional processes and are interrelated. The multifaceted nature of the problems is becoming a serious challenge for governments, politicians and policy makers [15].



The green economy addresses a number of environmental, economic and social development challenges. It requires agreement and cooperation among local economy actors (e.g., people, social groups, business entities, government bodies). As Figure 2 indicates, it shows little variation among the surveyed municipalities of the Świętokrzyskie region in terms of ecology and the environment. Space and its differentiation in terms of the analyzed area becomes an important dimension.

Figure 2. Spatial differentiation of the measure of ecology and environment of communes of the Świętokrzyskie voivodeship.

Source: own opracowane

The study of ecology and the environment is a very important part of conducting a systemic development policy for the municipality (at the

stage of design, as well as operation). Conducting adequate monitoring of ecology and the environment in the municipality will give the opportunity to introduce appropriate ways to reduce emerging problems. A systematic study should provide the information necessary for the authorities to evaluate and correct their policies. The increase or decrease in synthetic measures must be considered as a way of evaluating the effects of the region's management to date. The results obtained can be an important source of information for local authorities on the disparities that exist between units.

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