

## ABOUT THE BOOK

The main strategic aim of most concepts of rural development is to improve the quality of life of rural residents through providing appropriate sources of income, which would permit the creation of satisfactory living conditions for local communities; therefore, the economic aspect is strongly emphasized. Out of the proposed concepts for improving quality of life, sustainable development (SD) – widely understood as harmonious cooperation of the economic, social, and environmental systems (more on this in Chapter 1) – is a particularly desirable idea.

Accepting the priority of socio-economic goals in local development, in our study we have interpreted “sustainable development” as socio-economic development closely tied with the environment, allowing the residents to realize their expectations and social aspirations in order to shape a desirable and responsible living environment with unlimited perspectives. SD is, by design, a complex process, implying a dynamic integration of systems functioning on the basis of natural capital (the natural environment), manmade capital – production (material) and financial, and human and social capital.

For this definition of sustainable development, in our study the erstwhile capitals have been assigned three mutually-integrating dimensions: economic, social, and environmental. The implementation of this concept of development should ensure lasting improvement in the quality of life not only via the emphasized system integration, but also through achieving optimal balance of their elements. In the course of forming research assumptions, we have decided to treat sustainable development as the resultant of three components, assuming that each one is made up of discrete subcomponents considered key for our study (more on this in Chapter 3).

The study was an attempt of translating “the language of theories” into “the language of the empirical”. One of its main driving forces was a desire to operationalize SD on a local level in a way that would enable us to present the spatial diversification of its level. The ambiguity and generality of the SD concept,

which are the main causes of its varying and frequently rather freeform interpretations, allowed us to use diverse methods and measurement techniques and was reflected in the character of the research (more on this in Chapter 2). The problem of spatial diversification of the level of SD – which requires the researchers to establish the level of development and degree of balance of its components, as well as to identify the main deciding factors in the general development level of its elements – is very complex and difficult to measure. The influence of the components of SD on local development is not a set value – it depends on the force and direction of influence of other factors. Recognizing those ties requires a detailed description of the reality in which they function, therefore it was decided that an analysis based on empirical research would be the best way to present its multifaceted image and the changes it undergoes.

Our research confirms the need to operationalize the level of sustainable development in order to enable continued monitoring of socio-economic changes, as well as the real and practical implementation of the idea of protecting biodiversity (natural environment). This in turn raises the rank of research performed for a region like the functional area of the Green Lungs of Poland (as commune aggregation by spatial dynamics). Holger Rogall (2010, 39) stresses the need to operationalize the concept of sustainable development among the key theses presented in his work, stating that (...) *formulating new rules (...) and new systems for measuring the degree of sustainability and quality of life should prevent the phenomenon of losing the sense of sustainability*. Therefore, a more firmly defined concept is a form of barrier against the threat presented by the existing multitude of definitions and interpretations of the term “sustainable development”. His supporters agree that this conceptual erosion should be held back via formulating clear rules, management and measurement guidelines, while recognizing the need to include qualitative and quantitative methods.

The conclusions and recommendations stemming from our research can be separated into two groups:

- 1) substantive – derived from the results of research into the level and spatial diversification of phenomena and processes occurring in “small areas” (communes) and of recognizing the deciding factors in their final shape; as well as
- 2) applied – our answers to the difficulties and uncertainties, which arose at various stages of the study, usually due to restricted availability of statistical material (absence of proper research categories) and ambiguity of the SD concept, particularly in adapting it to the assumptions and reality of local (rural) development. The problems have also stemmed in part from the

contextual character of a large number of environmental variables (and de facto of the phenomena they describe), which not only prevented us from forming a relatively straightforward and unambiguous interpretation, but above all had a varying/ambiguous influence on the relationship with other (described) processes and phenomena.

The key results and conclusions of our research are as follows:

The results of our analysis indicate the coexistence of high levels of social and economic development in rural areas of the GLP. However, though this development is correlated on a regional level, it can be largely explained on the basis of concepts of unsustainable development – the polarization theory. The spatial spread of the level of component development, clearly showing the differences between central and peripheral areas, indicates a state of unsustainability. Thus, our research has confirmed the existence of nationwide tendencies in regional development. Regional development depends on the amount of spatial concentration of capital (material and human), therefore the highest levels of economic and social development are observed in the surroundings of larger cities. Regional poles of socio-economic development absorb positively influential factors from their surroundings, which in turn weakens the development of peripheral areas. The reverse – diffusion effect – also occurs, but is usually weaker than the drain of resources (from peripheries to the center); this issue is discussed in more detail in Chapter 4.

The level of environmental development, which in a conceptual sense was based on the assumption that human activity exerts pressure on the natural environment and causes its degradation (therefore it was studied in a pressure–state–reaction system), did not exhibit statistically significant correlation with the level of the other two components. If the direction of influence is ambivalent, natural environment can therefore act both as a barrier and a stimulus in shaping local living and farming conditions for the residents of rural areas of the GLP.

The communes possessing a highly-developed environmental component are characterized by a high degree of sustainability of development (quasi-ideal proportions of components/minimum distance from the optimum, with local factors included). Higher attractiveness and stricter protection of the natural environment go hand in hand with more balanced development components, but also with decreased quality of life (defined here as low levels of household infrastructure and large percentage of individuals receiving welfare assistance and supporting themselves with non-employment income – see the results of empirical research presented in Chapter 5).

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The highest level of development of the environmental component was observed in areas covered in large part by the European Ecological Network Natura 2000. Nearly 20% of least-sustainable units are made up in 90% of communes with no EEN N2000 coverage, but characterized by intensive agricultural use.

Significant and strong statistical correlation between the components of the level of economic and social development and the level of sustainability has not been proven. This indicates that communes possessing high-quality natural and environmental capital (with low pressure on the environment, its high attractiveness, and conscious and intensive protection) were more frequently able to attain a high level of sustainability. However, the influence of economic or social capital of a commune on its level of development sustainability is multidirectional. Therefore growth scenarios for individual types of units, taking their outcomes into account, exhibit significant differences. There is no single universal direction of development for all communes within the GLP. Each of them should strive to define its own specific balance of components, seek compromise between environmental, economic, and social goals which influence the well-being of present and future generations of their residents.

We have to stress the fact that the constructed synthetic indicators used in assessing the components of sustainable development refer to the identified state (they were employed in a static study). Based on those indicators we may draw hypothetical conclusions about the direction of changes in the three dimensions of SD, or – in a broader view – about the potential for improvement or decrease in the degree of its permanence. More in-depth conclusions would require an assessment of the real changes which occur in the ways of managing environmental, economic, and social resources, or studies on the general volume of the three systems (SD dimensions). The analysis would therefore become dynamic; at this stage the authors of the project did not attempt this task.

The structure of factors which have the largest influence on shaping SD of rural areas of the GLP was dominated by determinants of socio-economic development. The role of phenomena and processes occurring in the natural environment was very restricted in this respect, narrowed down only to the issues of protected areas and the existence of larger natural plant areas. This was caused directly (in a statistical sense, or for the undertaken research procedures) by the distinct differences in view of the complexity of the structures of factors describing the subsequent components of SD. Relatively straightforward and cohesive structures, expressed in the observed strong correlations between variables, as well as in the significant percentage of variance explained by

factors, appeared in the economic and social components; different characteristics have been recorded with regard to the environmental component (Chapter 6).

Looking into the probable causes of the complexity of the last component and the ambiguity of certain variables used to describe it, we should begin with the relatively restricted (in comparison with the remaining components) access to mass statistical data, which would present a maximally complex view of the natural environment in the context of the assumptions of SD. In Poland, the possibilities for studying, explaining, and prognosticating the socio-economic reality on a local (commune) level based on quantitative data are significantly larger than the possibilities for the same activities with regard to the natural environment, mainly because of the more numerous and diverse categories employed in general statistics to describe such phenomena and processes (mainly related to populations).

More objective causes, stemming from the characteristics of this system and, as a consequence, the variables used to describe it, are another source of the high complexity and - above all - the ambiguity of environmental variables. The contextual character of natural environment, reflected in the restricted capability to label the phenomena and processes used to describe it as either positive or negative, attests to this fact. Our research allowed us to select two types of indicators which may introduce ambiguity. The first one may be presented on the example of municipal solid waste in tons per 100 residents. We cannot firmly state that a high value of this indicator reflects unambiguously negatively or positively on natural environment - in reality this depends on the factor considered crucial by the individual making the assessment. The fact that the waste had been collected may be considered positive; the fact that it had not been separated may be considered negative. Livestock per 100 ha of agricultural land serves as an example of the second type of indicators with potential for ambiguous interpretation. In this case assessment depends on the point of view of the person making it - a high value of this indicator will doubtless be a positive factor for farmers, but tourists or ecologists may frown on the significant pressure it exerts on natural environment. In addition, the variables in the environmental component, unlike the variables in other components, were typified by a significant dispersion and asymmetry of values, stemming in part from the fact that certain phenomena did not occur and had a value of 0, which occurred often for several variables. A large number of environmental variables is also typified by a significant dispersion of values; this concerns primarily significantly spatially diversified phenomena (more on this in Chapter 3).

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In light of the conclusions presented therein, we consider the postulate to constantly and thoroughly monitor the natural environment in order to obtain and collect statistical material for local systems (communes) to be justified and necessary. Part of the currently available information on this subject comes from the databases of the Central Statistical Office, but – as mentioned several times prior – this material is insufficient for conducting multilayered, interdisciplinary analyses concerning small areas (communes). It is necessary to create an effective system of collecting environmental data on a local level, and subsequently to build appropriate channels in order for the information flow between institutions on the local (possessing broader capabilities for near-environment data collection) and central (archiving and processing data) levels to occur at a more intensive rate than before. Closer cooperation between central institutions is also necessary, as this will enable the creation of new research/statistical categories to meet various needs – on one side the needs of scientists focusing on the (general) issue of the ties of economy and society with natural environment, and on the other the needs of local communities striving to transform their surroundings in accordance with the principles of SD.

It is also crucial to develop a method for studying SD and natural environment which would take into account their specific contextual character. Numerous nuances and ambiguities, which are much more common in environmental matters than in social and economic ones, not only lead to interpretational dead ends, but above all may influence research outcomes by modifying interactions with other phenomena and processes undergoing analysis. A desired method of studying SD would focus primarily on the issues of interdependency (relation) between elements of reality described by variables, because this is the only way to establish boundary values, below or above which development begins to exhibit indicators of unsustainability.

We also need to revise and modify local policies and strategies in order to include precisely formulated SD guidelines on as many levels as possible (via a holistic approach). Scientists claim that sustainable development and rural development should be seen as mutually pervasive processes; it is emphasized that their relationship is determined by the “contents” of both development concepts and the identification of their common points (Povilaitis, Steikuniene 2011). The broader (more multifaceted) these relationships become, the bigger the likelihood of complex transformations of local communities and the environment in which they function, which may ensure, for example, the use of

institutional and financial aid of many intersecting and diverse EU programs. Therefore, we call for not only including issues of protecting environmental resources and striving for social equality (inter- and intragenerational) in the contents of strategic documents, but also for treating them as equally important to economic growth, which tends to dominate most such documents. This process will result in closer integration of the goals, tasks, and resources necessary to transform the rural society into one more aware of its needs, activities, and desired results, manifesting in numerous spheres of human life and activity.

In closing, the authors would like to stress that the correlations presented in this text should not be perceived as universal – especially with regard to their strength of influence; they should be seen as accurate for the assumed set of data. The results that have been reached could have been different given a different research area for the analysis, or characteristics other than the ones assumed at the outset. We should also add that the list of indicators used in our research is not perfect and final; however, further optimization or modifications will depend both on conceptual work on sustainable development and on the possibility for its quantification and availability of appropriate data.



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