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Scenario methods in planning and determining sustainable development of municipalities with Natura 2000 protected areas¹

Wykorzystanie metod scenariuszowych w planowaniu kierunków rozwoju gmin na obszarach Natura 2000

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Abstract

The purpose of this paper is to analyse the usefulness of applying scenario methods in shaping the processes of development in municipalities, in which special determinants for development are related to the occurrence of especially significant natural values, i.e. municipalities with the Natura 2000 protected areas. The article presents the methodology and scenarios of economic activities development in municipalities located in Natura 2000 protected areas.

Streszczenie

Celem niniejszego artykułu jest analiza przydatności metod scenariuszowych w procesie kształtowania kierunków rozwoju gmin, w których czynnikami determinującymi są szczególne walory przyrodnicze, np. gmin położonych na obszarach Natura 2000. Opracowanie prezentuje metodologię budowania scenariuszy rozwoju oraz przykłady scenariuszy rozwojowych gmin z obszarami Natura 2000.

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1. INTRODUCTION

The scenario approach is one of the most widespread strategic management methods. This refers both to methods applied in business (Gausemeier et al 1998, Grzegorzewska, Runowski 2008) and in local government (Palang et al 2000, Etienne et al 2003). Simultaneously, their evolution can be seen as well as searching for new applications for them. Making use of the scenario approach is becoming more and more popular for shaping sustainable development of municipalities (Street 1997, Camagni 1992, Kok et al 2006, Brown 2002). Amongst the most important arguments for using the scenario methods at the local level, the following should be mentioned:

- orienting the performed analyses towards the future and conducting strategic reflection in a rational decision-making perspective,
- combining different dimensions of local development into a cohesive vision of the future,
- focusing on the mechanisms that connect different local processes that decide about the development of a municipality,
- identifying the actors of the local development,
- combining predictive perspective with anticipatory perspective (Klasik 1993).

2. METHODOLOGY

In the research project “Models of the economy development in municipalities in Natura 2000”, we carried out much methodological and analytical work that aimed at:

- drawing up a typology of municipalities with Natura 2000,
 - diagnosing local policies used for managing the development of Natura 2000 areas in relation to the type of municipality,
 - determining evolutionary development scenarios taking into account the identified types and basic economic activities carried out in relation to Natura 2000,
 - creating models of economic activities based on the results of the scenario analysis.
- The typology of municipalities with Natura 2000 has been developed primarily on the basis of statistical data. The basic data collection periods involve the years 2003, 2006 and 2009. The selection of the municipalities was determined by the following assumptions:
- coverage of the survey in all regions where there are municipalities with significant percentage of Natura 2000;
 - to take into account diversity when choosing these municipalities, but always with a significant percentage of area covered by Natura 2000;

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- to take account those municipalities that may establish partnerships within the framework of the sustainable development policy pursued.

An important goal was to identify the types of municipalities with Natura 2000 based on the concept of sustainable development. In our research practice, this meant that:

- for the determination of types of municipalities with Natura 2000 we used a pair of criteria, one of which was the high proportion of Natura 2000 and the second was economic criterion – socio-cultural, spatial and infrastructure;
- the main objective of the creation of a typology was to provide an indication of the types of Natura 2000 with regard to the concept of sustainable development on the basis of the observations of the situation occurring in the population; in other words, the aim of the study was to offer an indication of the types corresponding to the Polish municipalities, rather than creating a comprehensive typology of speculative nature – the survey indicated the municipalities that are the most vivid illustrations of the given type.

As a result of the application of this procedure, we have selected for further study 94 municipalities representing 15 regions and 15 counties. The collected data have enabled the assessment of the nature potential of municipalities, the demographic structure of municipalities, civil engagement of local communities, local economy, budget importance of natural resources, expenditure budgets of municipalities for the purposes related to the protection of the environment, expenditure budgets of municipalities and activities oriented towards the implementation of sustainable development, the availability of social infrastructure in the communities surveyed, infrastructure of municipalities, tourist infrastructure in the surveyed municipalities, the economy and the labour market, as well as spatial planning. Based on surveys, we have established five criteria for the determination of types of municipalities: the strength of the local economy, the level of use of environmental resources, demography, social capital, and environmental protection and spatial policy.

For each of the selected criteria, two municipalities were chosen (located on basis of the extreme positions according to the selected criteria). Then, for those municipalities we conducted in-depth research, in particular including a survey and examination of local planning documents. The survey conducted in the chosen municipalities focused on:

- evaluation of the natural potential of the municipality,
- circumstances of changes and processes in areas of great natural value,
- natural features of quality of life in the municipality,
- local activity for the benefit of sustainable development,
- competence of the local government in the field of action for sustainable development,
- cooperation of local stakeholders for sustainable development.

The next phase of the research was to develop scenarios for the development of Natura 2000 areas; the focus was on evolutionary scenarios, but we have adopted a series of guidelines for profiling the scenarios. Among these may be mentioned:

- the development of industry-specific scenarios, taking into account the relationship between the development of industries and Natura 2000;
- the development of scenarios according to the types of designated municipalities based on an analysis of socio-demographic, economic and environmental factors; five types of designated municipalities were adopted on the basis of: (1) strength of the local economy, (2) use of environmental resources, (3) demographic potential, (4) social capital and (5) environmental protection and spatial policy;

- for each type, extreme scenarios have been developed for 'leading' municipalities and 'problematic' municipalities in the framework of a specific criterion; determination of types of municipalities has been supported by tests on the population of Polish municipalities with the highest percentage of Natura 2000 areas;
- development of two types of scenarios: the synergy scenario, which is a shared development of industries and conscious use of Natura 2000 values, and scenario of parallel or conflicting development, which is the development of the industries without a conscious reference to the values of Natura 2000.

Scenarios have been supplemented by the identification of the transaction costs. These costs are defined as the total costs of the functioning of the socio-economic system covering the expenditure of resources in the course of concluding and executing of all types of transactions (Stankiewicz 2007).

3. SCENARIOS OF DEVELOPMENT IN MUNICIPALITIES WITH NATURA 2000 AREAS

As a result of the study, we have prepared scenarios and models of development for municipalities with Natura 2000 areas. The work has been carried out in accordance with the previously described methodological assumptions. Because of the wide range of scenarios and models, Table 1 below shows only one scenario – related to development of agriculture, forestry and fishing in the municipalities located in Natura 2000 protected areas.

The included scenario is very synthetic and focuses on a few main aspects and processes. Elaborating scenarios that could be a basis for formulating development strategies for particular municipalities with Natura 2000 areas would require a more detailed scenario and also, more than anything, wide public consultations. The included example, however, can be an illustration of a model process of generating a system of sustainable development scenarios for the municipalities located in Natura 2000 protected areas.

Elaboration of a model based on the development scenarios of Natura 2000 areas was preceded by the determination of the development process structure with the selected economic activities (Fig. 1). A demanded scheme for transformation of industries with relation to natural values is based on the analysis of the gathered data.

4. SUMMARY

The essence of the use of scenario methods in territorial units is versatile and dynamic analysis of development processes. The development of scenarios involves investigating the relationships between different local actors, the relationships between phenomena and identifying the conditions that are critical for strategic development. Multivariate evolutionary scenarios show how the different effects of the development can be based on local policy. In the case of the municipalities of the Natura 2000, key factors with decisive influence on the development are local natural values and the ability to use them in accordance with the principles of sustainable development.

The latter is related mainly to the experience, skills and creativity of local players. Scenarios always depend on the attitudes that are characteristic of the local communities. Negative attitudes leading to the implementation of conflict scenarios instead of synergistic are, for example:

- ignoring natural values and attempts to implement socio-economic development without respect for these values,

Table 1. Scenarios related to the development of agriculture, forestry, hunting and fishing – scenarios for municipalities with extreme pace of economic development (sector A)

Phenomena and effects	Scenario of synergy		Scenario of parallel or conflictive	
	leading municipalities	problem municipalities	leading municipalities	problem municipalities
Phenomena that create a scenario	<ul style="list-style-type: none"> - investing in functions considered commercially prospective - connecting development of sector A with science and research - better adjustment of products to market needs - ecological priority in development of functions - developing activities related to sector A, including tourism and agrotourism, which make use of the values of Natura 2000 areas - development of companies of agricultural and food processing that supports development of sector A - high fiscal potential of municipalities that allows to implement local policy of supporting development of sector A 	<ul style="list-style-type: none"> - limited possibilities of investing in development of sectors - sustaining activity in sector A by public entities, especially in forestry - undertaking by a part of farms pro-ecological actions oriented to transform profile of production - attempts to develop associated activities, including tourism, which make use of values of Natura 2000 areas - weak fiscal potential that makes implementation of local economic policy difficult 	<ul style="list-style-type: none"> - preferences for quantitative development and commodity economy - investing in functions that are considered commercially profitable and that do not necessarily respect natural values - mechanisation of production in sector A - development of companies of agricultural and food processing, which supports development of sector A - high fiscal potential of municipalities that makes implementation of local policy of supporting development of sector A possible 	<ul style="list-style-type: none"> - decline of little farms - limited possibilities of investing in development of entities in sector A - sustaining activity in sector A by public entities, especially in forestry - attempts to develop activities that are complementary to activity of sector A - weak fiscal potential that makes implementation of local economic policy difficult
Local effects of implementing a scenario	<ul style="list-style-type: none"> - fixation of economic structure of municipality - strengthening of strong specialisations and produce of the municipality - fixation of workplaces and stabilisation of job market in sector A - emergence of new companies and workplaces in associated sectors 	<ul style="list-style-type: none"> - limited implementation of policy of supporting sector development related to low level of budget revenue - stagnation in development of sector A resulting from fewer opportunities to implement innovative solutions - low added value of products resulting from poorly developed processing industry 	<ul style="list-style-type: none"> - fixation of economic structure of municipality without important qualitative changes - increased efficiency of entities in sector A - possible reduction of workplaces because of priority of efficiency - transfer of negative effects of using technology in sector A on natural environment - emergence of new companies and new workplaces in associated sectors 	<ul style="list-style-type: none"> - reduced number of active farms - stagnation in development of sector A resulting from fewer opportunities to implement innovative solutions - economic regress of municipality - limited implementation of policy of supporting sector development related to low level of budget revenue - low added value of products resulting from poorly developed processing industry

Source: own elaboration

- excessive focus on the natural values and neglecting thinking about meeting the daily needs of local communities,
- treatment, a priori, of the Natura 2000 as a barrier preventing the implementation of innovative local development trends.

Therefore, involvement of a broad spectrum of local actors in a scenario development partnership should be recommended. This solution will provide not only an exchange of views between the parties, but will also contribute to changing and enriching the perception of Natura 2000 sites and their role in the development of communities. Scenario approach, although relatively new in

the matter of resolving conflicts in communities of Natura 2000 sites, can be considered as promising and useful. Applying this approach fits in the lively discussion in the country on the relationship between local development and the protection of Natura 2000 sites. Development scenarios based on a strategic and holistic approach to the description and prediction of reality can fill the gap of tools required for decision-making by local governments. In particular, the results of applying the scenario approach enable the identification of risks in decision-making process, and allow paying attention to potential areas of conflict.

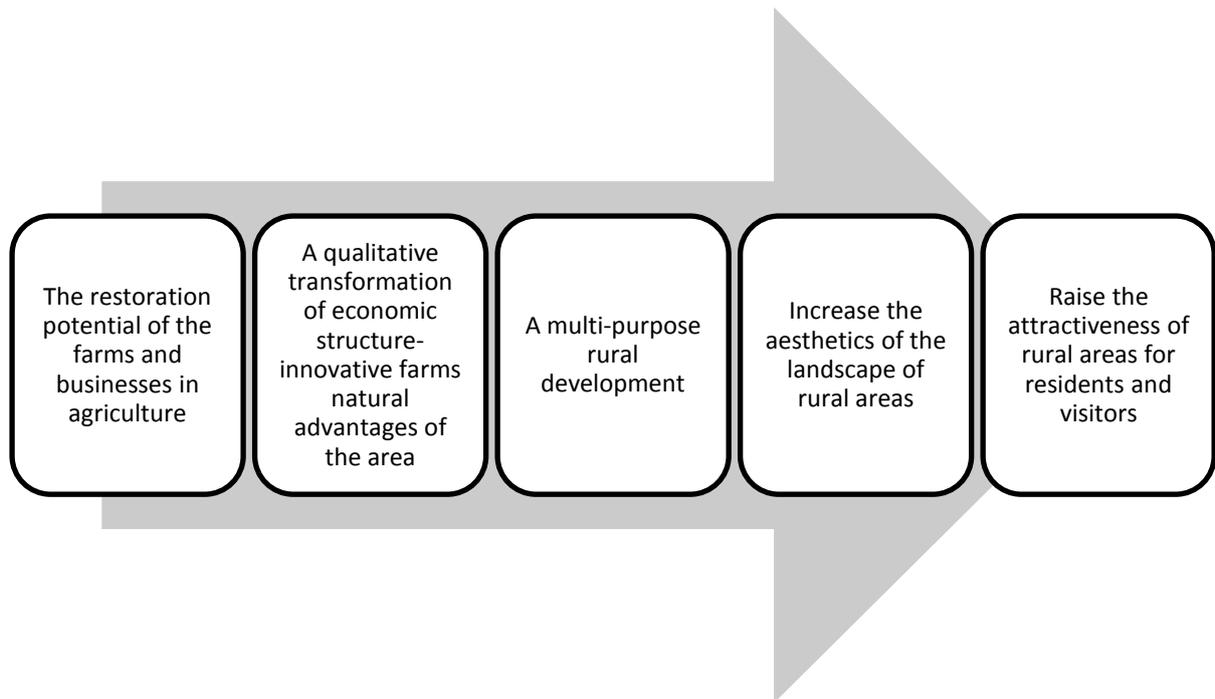


Fig. 1. The structure of the economic activities development process in the municipalities with Natura 2000 areas – agriculture, forestry, hunting and fisheries

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