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Potential of applying databases in the planning process of sustainable development

Key words: database, region, sustainable development, strategy

Summary: This work presents an original and previously unpublished analysis of database use in the process of sustainable development planning. Planning of sustainable development is conditioned by external and internal factors. The basis for such planning is the spatial research, which can distinguish groups of similar units and value their stage of development.

This work shows several suggestions for database employment in sustainable development planning. It has been suggested to employ the databases in the consecutive stages of the sustainable development planning in sample strategic documents of several authors. In the present conditions, the main problem for the correct usage of the resources and their protection is the lack of identification of the problems, especially the social and economic ones, and the natural valuation which could be made more efficient with the help of a database. Creation of information or conveying the information and later applying the gathered information will be a favourable factor in a wider employment of databases in different domains of life, especially in planning of sustainable development.

1. Introduction

Creating databases constitutes a significant element of introducing subsequent stages of eco-development into real life, particularly on a local level. Circumstances in which units and organisations gather information and knowledge have been researched to a small degree (1). What is significant in the process of acquiring knowledge and information is verification thereof, including possible, if existing, data. Cre-

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ating each database should be carried out on the basis of a defined procedure, which should also verify the information contained therein.

At the same time, such research requires applying a concrete model. At present, it is assumed that what constitutes such a model is an interactive model, which favours innovation in economy (2). In this model, basic processes may influence one another and different participants contribute to those interactions (1). A significant feature of this model is dynamism as well as inter-relations between elements of the system occurring in this model (3). From the point of view of eco-development, any research in this scope is to be based on the dynamic nature of development, reversible relations, and interdependencies (4).

The aim of this article is to present the potential of applying databases in the planning process of sustainable development.

2. The range and methods of the research

A descriptive and analytic method has been applied in the paper.

A descriptive method was applied as an initial tool. It was based on isolating a certain phenomenon out of the already known entirety, describing this phenomenon, comparing thereof to similar phenomena, distinguishing common and separate factors.

The reality has been presented, features and tasks pertaining to the subject of the research have been compared. The results of the research carried out have been presented in a tabular system.

3. Planning eco-development on the local level

A strategy, as a management tool, enables us to work efficiently and to select appropriate solutions and directions of actions. Working out a strategy of commune development requires an active participation by involving commune authorities, its administration, external experts, representatives of local communities as well as district (*powiat*) and voivodeship government and also the voivode (5).

Communes may, and even are obliged to, prepare and accomplish strategic plans on their own as well as search for the most efficient strategies of local development (6). A strategy of local development embraces certain purposes and a general way of acting of a subject within the scope of the most significant and crucial decisions concerning the future of a given area. The basis of strategy efficiency is accepting it by the society, which can be achieved through involving the local community in the process of strategy building, especially local authorities as well as opinion-forming circles. During the preparation of the strategy one has to take into consideration both specific internal conditions as well as realistic possibilities of encouraging local

initiatives and external conditions. The internal factors embrace: natural conditions, commune resources, the level of infrastructure as well as the labour market, while the external ones include: national strategy and development policy, social and ecological policy and the legal system. The strategy of local development embraces certain purposes and a general way a subject is to act within the scope of the most significant and crucial decisions concerning the future of a given area.

During the preparation of a commune strategy one should take into account not only opinions of the commune inhabitants and concrete assistance of the outside environment, most frequently consulting companies, but also scientific authorities. The strategy of commune development should be quite stable, independent of personal changes in commune authorities, but it should also be flexible in terms of changing social and economic conditions. (7).

The reference literature on planning development is very extensive. One of the basic rules is the periodicity and the repeatability of planning. The very fact of periodicity is not a problem in the traditional methods of regional and local planning (analysis-evaluation-synthesis), but it already exists in the ideal pattern method (synthesis-analysis-evaluation), which is very often used for the protected areas. This problem arises because of the quality changes; the traditional method is based on the diagnosis of the existing state, while the method of the ideal pattern is based on the construction of the desired picture of reality, which could exist in an ideal situation, that is without internal and external limitations. Tadeusz Kudłacz (8) proposes both methods to be used simultaneously in the regional and local development planning. The ideal pattern method should be used for the qualitatively new processes (e.g. sustained development), without a continuation resulting from the up-to-date state and conditions, while the traditional one for the continuation of the existing development of a unit with the annihilation of barriers and threats. A new qualitative phenomenon is also the participation of local environments.

The methodical standards of the preparation of strategy are commonly known in the traditional method, and the example can be the proposition from Figure 1, where the employment of databases in this process proposed by the authors has been included. The problem of preparing a strategy based on the method of the ideal pattern is still in the research phase, but the framework already exists. The problem in this method, often proposed within the range of sustained development, is the issue of *ideal pattern*, or else, the lack of practical interpretation based on concrete models and indicator frames, as well as the tools for their realisation, with a far-fetched postulation and varied interpretation of this concept (9).

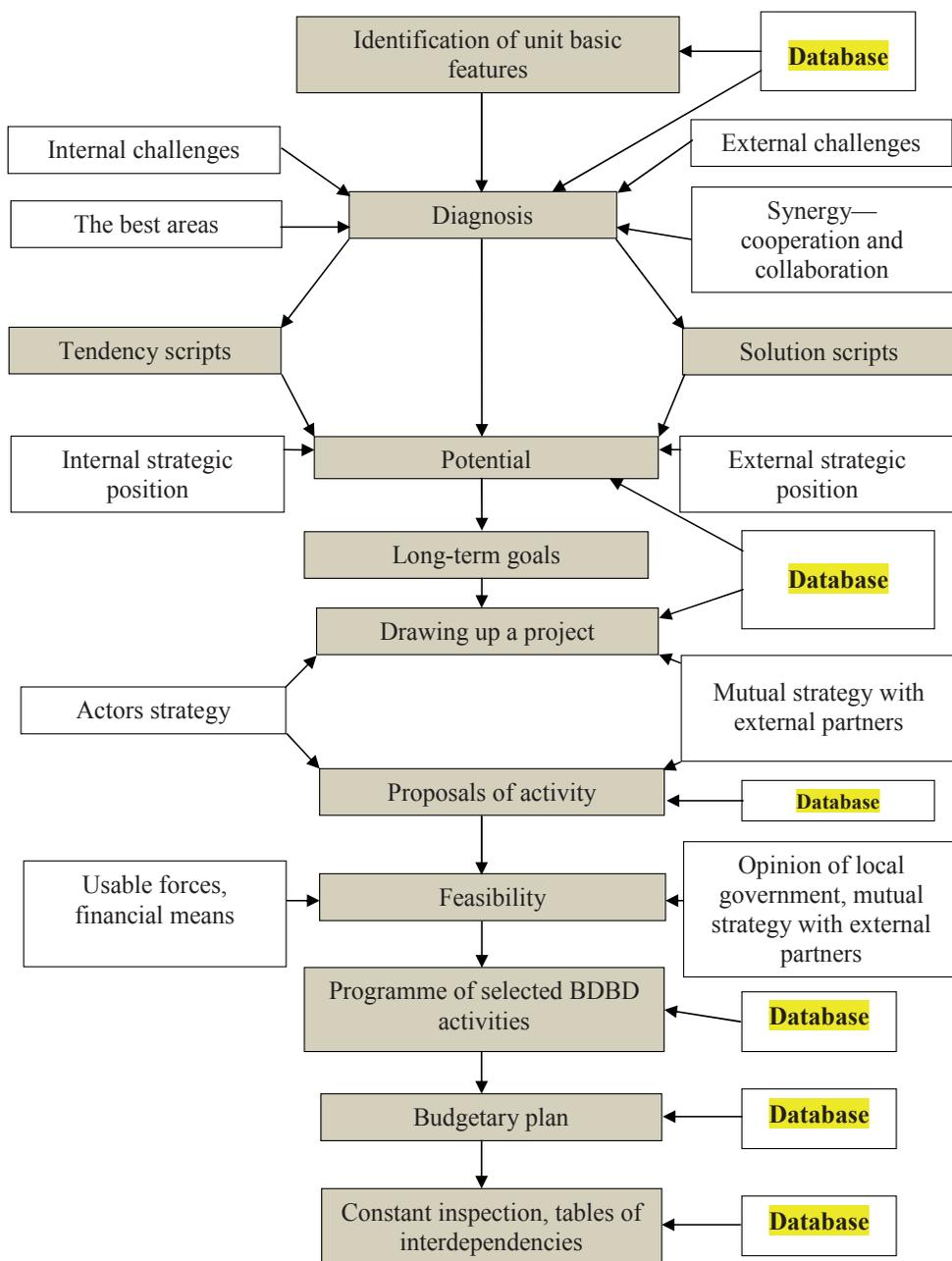


Figure 1. Planning strategy with the use of database

Source: authors' own study with suggestions of (12).

In the process of planning development, what is taken into account at present is a significant participation of local environments, with the involvement of the most significant representatives of this community. Within partnership planning (with the participation of inhabitants) in the form of workshops the following items have been accepted (Figure 2) successively as a result of consensus (10):

- a report on the eco-development state;
- a mission and vision of the eco-development;
- a structure of goals with the main goal of the eco-development (strategic plan);
- a plan of tasks/ activities (operational plan);
- a management system of strategy realisation.

According to the guideline of Agenda 21, the eco-development strategy is based on a socialised communication plan, which has been recognised as a key tool in the development of local democracy. A standard in the strategy on the local level is building the capacity of self-governments for partnership, as well as creating solid bases for social communication in the process of creation, verification, and realisation of a vision of development, which is to be achieved by two social pillars:

- building a strategy in a process of partnership planning;
- building institutional foundations for social monitoring in the eco-development strategy realisation (10).

The basis for socialising the process of strategy building and strategy realisation is creating partner understanding, not infrequently with the help of: conducting questionnaires among inhabitants, social consultations, as well as collecting opinions on a given subject. The aim of socialising the process of strategy building and of monitoring its realisation is to take inhabitants' opinions and ideas for the development into consideration. The involvement of inhabitants into the process of planning and acting for the benefit of local development is significant in terms of its effects, since only then the inhabitants identify themselves with those activities. Conducting partnership planning requires creating databases, which are employed for monitoring a process of achieving goals (4).

According to a procedure proposed by Krystyna Dubel (11) and commonly accepted in the process of environment management in a commune, the following proceedings in eco-development planning on the local level (Figure 3) are adopted:

1. Analysing environment, economic and social conditions of commune development.
2. Conducting inventory of wildlife habitat in a commune.
3. Creating wildlife habitat monograph of a commune and its facilities.
4. Conducting demographic, social and economic valuation.
5. Defining a vision and working out a strategy of commune development.
6. Creating a programme of eco-development of a commune, which is influenced by investment and modernisation projects, as well as conservation projects of nature and landscape protection.



Figure 2. Range of strategy in local planning of sustainable development using of database

Source: authors' own study with suggestions of (10).

7. Creating a study of conditions and directions of space planning of a commune.

8. Introducing a system of space and environment management in a commune.

In at least six of the mentioned stages, there is a necessity of creating databases for the realisation of commune development in accordance with the eco-development conception.

At present this problem has and is going to have more significant meaning, namely participation of local communities in creating their own development. Creating databases constitutes a significant element of introducing subsequent stages of eco-development into real life, particularly on a local level. The most significant in the process of acquiring knowledge and information is verification thereof, including possible, if existing, data. Creating each database should be carried out on the basis of a defined procedure, which should also verify information contained therein.

The authors indicated the basis of eco-development in accordance with the recommendation of Agenda 21, i.e. being based on the social communication process, regarded as a key tool of the development of local democracy.

This will be an especially important element in implementing eco-development in situations involving conflicts, where different groups will represent different approach to the same issue.

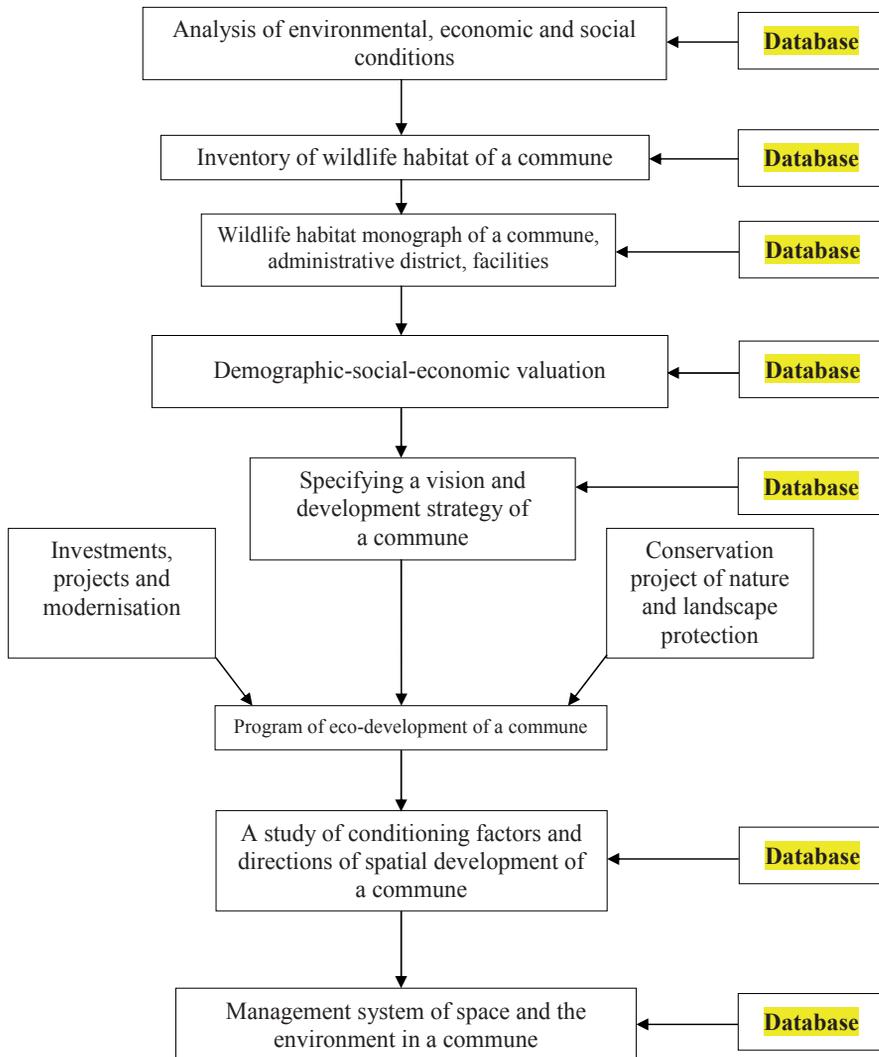


Figure 3. Selected process of environmental management instruction using of database

Source: authors' own study with suggestions of (11).

4. Conclusion

The proposed employment of databases consecutive stages of sustainable development planning, with participation of the inhabitants and based on their opinions, is an element of a broader research problem. In the present conditions, the lack of

problem identification, especially social and economic ones, as well as the natural valuation is the main problem of the correct usage of the resources and their protection. The total lack of the communities' participation in the realisation of sustainable development will require a thorough change of the orientation of all the parties involved. This problem already has and will continue to have a growing importance, because it will no longer be possible to prevent the participation of local communities from creation of their own development. Undoubtedly, one of the instruments used for the realisation of the sustainable development idea will be the employment of databases on a broader scale.

On the basis of the conducted analysis of the databases employment potential, the following suggestions can be presented:

- in the majority of the recommended procedures, there is a potential for database employment;
- at many stages of these procedures, the database employment seems more a necessity than a suggestion;
- the kinds of those databases should be based on the interactive model;
- in the interactive model, the basic processes may influence one another, and the various participants may contribute to those interactions. It is characterised by the dynamism together with its interdependences occurring between the elements of the system (3).

From the point of view of the sustainable development, the basis of all research in this field is accepting as the base the dynamic character of development, the reversible relations and interdependencies, as well as monitoring the processes. The creation of knowledge, or conveying thereof and then the employment of knowledge will favour the wider use of databases in various branches of life, especially in the sustainable development planning.

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Możliwości wykorzystania baz danych w procesie planowania zrównoważonego rozwoju

Streszczenie: W pracy przedstawiono oryginalną i wcześniej niepublikowaną analizę wykorzystania baz danych w procesie planowania zrównoważonego rozwoju. Planowanie zrównoważonego rozwoju uwarunkowane jest czynnikami zewnętrznymi i wewnętrznymi. Podstawą takiego planowania są badania przestrzenne, które mogą wyodrębnić grupy jednostek podobnych oraz zwaloryzować stan ich rozwoju.

Opracowanie prezentuje propozycje wykorzystania baz danych w planowaniu zrównoważonego rozwoju. Zaproponowano wykorzystanie baz danych w kolejnych etapach planowania zrównoważonego rozwoju w przykładowych dokumentach strategicznych kilku autorów. W obecnych warunkach brak identyfikacji problemów, zwłaszcza społecznych i gospodarczych, oraz waloryzacji przyrodniczej, które można byłoby usprawnić za pomocą baz danych, jest głównym problemem właściwego wykorzystania zasobów i ich ochrony. Tworzenie wiedzy – czy przekazywanie wiedzy, a później jej zastosowanie – będzie sprzyjało w szerszym zastosowaniu baz danych w różnych dziedzinach życia, a zwłaszcza w planowaniu zrównoważonego rozwoju.

Słowa kluczowe: baza danych, region, zrównoważony rozwój, strategia
