



Assessment of the Potential in Terms of Regional Sustainable Development

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ABSTRACT

This paper focuses on the potential assessment for the needs of regional development. The territorial potential is the determining prerequisite for the development. Natural potential represents for humans a certain offer for development of their activities. Socio-economic potential is a supporting and sometimes determining factor of such development because the way how this potential is exploited depends on the level of human sophistication. Use of the potential in turn determines the character of landscape imprinting its typical physiognomy: farming landscape, recreation, industrial, etc. Humans do not always use the landscape potential in an efficient and optimal way. It leads to the environmental but also socio-economic problems. This paper presents the theoretical and methodological guidance for the assessment of the potential in terms of regional sustainable development.

KEYWORDS : landscape potential, human potential, environmental problems, landscape-ecological optimal utilisation of the territory, sustainable development

Introduction

Assessment of the potential in regional development plays an important role for it serves as the base for optimal use of natural and socio-economic resources in the territory. Inappropriate use of the territorial potential causes a number of not only landscape-ecological but also socio-economic problems. Inappropriate use of the natural potential threatens and degrades natural resources, ecological stability and biodiversity of the given territory and deteriorates the environmental quality. Among the principal socio-economic problems ensuing from the inappropriate use of potential is underdeveloped economic base or increased unemployment, which also deteriorates the quality of life. Insufficient use of the potential also shows in marginalization of some areas and regions. Providing for observation of principles and criteria of sustainable regional development requires providing for the optimal use of the territorial potential in harmony with the approaches and definitions of sustainable development. Approaches (and then definitions) to the concept of "sustainable development" on a worldwide scale are numerous and heterogeneous at present. They are based on a variety of aspects, for instance:

"...such a way of the management of natural resources (air, water, soil, mineral resources) and living systems including man, which will ensure the achievement of the highest sustainable quality of life" (IUCN, 1973);

"...development that accepts the limits of the consumption and utilization of natural resources" (Rifkin, 1980)

"...life style that is approximating the ideals of humanism and harmonious relationship between man and nature in a time-unlimited horizon" (Vavroušek, 1990)

"...improving the quality of life of man within the carrying capacity of supporting ecosystems" (Caring for the Earth, IUCN, 1991)

"...as life within the bounds of the carrying capacity of biosphere" (Chiras, 1993)

As is evident from the above given definitions, sustainable development is used to denote such a societal development that regards and respects the natural and cultural-historical resources and potentials of the territory. Thus the fundamental goal of sustainability is to harmonize the economic development with the potentials of the territory.

Theoretical and methodological approaches

The potential means the capacity of landscape to fulfil the functions or to provide certain assets for the different use in required by humans a long term. The aim of the assessment of landscape potential is to express the capacity or suitability of landscape for the realisation of individual socio-economic activities in harmony with the smooth functioning of the links existing in landscape system. Neef (1996)

introduced the notion of potential in landscape ecology meaning a sum of all landscape properties that constitute the prerequisites for the economic re-valuation of landscape space with its structural substances and energies. There are two aspects in the assessment of the regional development potential: natural and socio-economic. Natural potential is the objectively occurring wealth in nature, which drives the natural circulation changing and displacing substances and energies (Klinda, 2000). Applying the anthropocentric aspect, natural potential is interpreted in the sense of the real and future use of different natural resources. Socio-economic potential is given by humans and their activities. It is characterised by the attributes of human potential, economic base, services, legislation, and the like and it has a distinct feature of dynamism.

Value of the potential varies. It depends on the changes in society and intensity of landscape use but also on overall social development of the given territory. Human use of potential is often associated with hazard and degradation. For instance, inappropriate use of the soil potential may result in threat to not only land (erosion, contamination, compaction, etc.) but also water resources (water contamination because of application of chemicals, etc.). Hence, the assessment of the present status and value of the potential must also take into account changes first of all of the natural potential because its value may have changed over historical development.

There are numerous studies involved with the assessment of the potential such as Haase (1978), Mannsfeld (1983), Bierhals (1980), Mazúr, Drdoš, Urbánek, (1983), Drdoš (1992), Hrnčiarová, Ďurajková, Tremboš, Moyzeová (1992) and other.

The assessment of the potential requires a certain information base which contains (Izakovičová, Miklós, Drdoš, 1977):

- Data about the elements of the natural environment of the assessed areas with stress on the relevance for the particular potential, dynamics of processes and mutual linkages.
- Data about the parameters of individual activities corresponding to the potentials.
- Data about the susceptibility of natural environment to the particular activity.
- Data about the effects of activity on natural environment and other activities (possible conflicts).

As far as the environmental aspect is concerned, attention has to be given to the spatial aspect of the assessment of the overall potential as a single locality may have several partial potentials (raw material, agriculture, recreation, forest resources, etc.). Use of different potentials often produces a clash between the contradictory interests leading to conflicts. For instance, an intensive use of the agricultural potential may negatively affect the use of groundwater as the drinking water resource. Gravel mining may mean the diminution of farm-

land while on the other side such mining may result in artificial lakes, which attract and promote the recreation potential. An efficient use of landscape potential requires a comprehensive approach to its assessment taking into account all linkages and circumstances given by the use of partial potentials.

Assessment of the potential for the needs of the regional development can be classified into the following basic blocks:

A) Assessment of the present status of potentials, i.e. actual capacity (suitability) of the territory for individual socio-economic activities. Assessment of the present status of the potential consists of the following steps:

- Assessment of the suitability of natural conditions for the realisation of socio-economic activities (natural potential) is based on the assessment (analyses) of properties of the abiotic and biotic complex in the territory and (suitable) exploitability of individual natural resources for individual socio-economic activities.
- Assessment of the socio-economic conditions for the realisation of socio-economic activities as based on the assessment (analyses) of human resources, economic and cultural/historical conditions. It is the case of the assessment of the economic base, labour, investments, cultural heritage that may play the role of determining factors for the development of the given socio-economic activities.

Synthesis of the above-quoted two points (natural and socio-economic potentials) results in an overall potential of the territory, it means certain offer of the options available in the given region for realisation of the socio-economic activities.

The use of the potential at present is often limited by different socio-economic factors first of all by the threat and damage to natural resources by stress factors and by legal limitations set in order to protect nature and natural resources.

Hence, it is also necessary to evaluate the options for the landscape potential use based on the action of the limiting factors, which curb its use and devalue the potential. It means that the following steps of the assessment of optimal use of potential are:

- Assessment of the possible threat to natural potential (devaluation of potential's quality) due to action of stressors is based on the assessment of the synthesised natural potential and stressors. The aim of this step is to establish the rate of limits to the use of the potential because of possible devaluation of natural resources. It is first of all a limit to the use of the potential because of hygienic reasons. For instance: a territory may avail itself of very fertile soil which predetermines a high agricultural potential. But this soil may be contaminated by increased concentration of contaminants/foreign substances which reduce the farming option and especially that for the cultivation of crops for direct consumption. It must be noted though that in such case it is a time-limited use of the potential because possible regeneration and revitalisation of individual components of natural environment may renew the favourable properties of the natural environment.
- Assessment of the socio-economic limits to use of the potential: The base is the assessment of the synthesised legal nature protection, natural and cultural/historical conditions, protection of technological elements and the natural potential of the territory. Legally delimited zones with the aim to protect nature and natural resources often against implementation of individual socio-economic activities act as limiting factors and they curb or even ban realisation of such activities that may put at hazard qualitative and quantitative properties of the individual natural

resources. For instance, many forest ecosystems, apart from producing, fulfil many other functions, which limit the use of the forest-management potential for logging.

B) Comparison of the potential with the present situation in its use is aimed at the establishment (defining) of the problematic points of inappropriate use of the potential and disclosure of possible reserves between the landscape assets and their actual use. It means establishment of:

- A potential, which can be more intensively used.
- A potential and areas under excessive (over admissible capacity) use.
- Problems ensuing from inappropriate use of the potential.
- Way (proposed management) of using the given potential in harmony with the principles and criteria of sustainable territory.

The assessment of the territorial potential ends up in the proposal of aims and measures of its optimal use in harmony with the principles and criteria of sustainable development. In terms of the regional assessment of the potential, the basic result is the establishment of:

- Factors, which support the development of the region.
- Factor limiting the development of the region.

Assessment of the potential must be carried out individually for each socio-economic activity and then to compare the use of the potential regarding the other potential of the territory as the use of one potential may affect the use of the other. For instance, intensive use of quality farming soil may affect the water-management potential and on the contrary, zones of hygienic protection of water resources limit the increased use of farming potential.

**Assessment exemplified by recreation potential (Tab. 1).
Tab. č. 1: Example of recreation potential assessment**

Factors	Indicators
Natural factors	Relief, climate, water resources, geological conditions, natural assets, landscape structure.
Socio-economic factors	Cultural and historical resources, services, human resources, traditions and the like.
Stress factors – limits of deterioration	Anthropogenic stressors, air pollution, water and soil contamination, damage to vegetation, etc.
Legal protection – ecozoological limits	Legally delimited area and natural resources to be protected.
Technological zones – technical limits	Legally delimited areas to protect the technological elements or to protect the surrounding areas against their harmful effects
Administrative and economic boundaries – administrative limits	Ownership and property situation and relationships, administrative boundaries, etc.

Conclusion

The assessment of the potential gains ever more significance in the light of now promoted implementation of sustainable development as it provides for sustainable use of individual resources. Assessment of potentials with the aim to propose their optimal use is the basic tool for elimination of not only the environmental but also the socio-economic problems and the vital condition for the efficient use of natural resources, which leads to sustainable development of a region.

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