Chapter 4
Regional Risks Assessment

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ABSTRACT

The index method, which enables a complex assessment of regional risks, is described. The method is based on the comparison of critical indicators with the acquired data on basic levels of every assessed sphere and their subsequent transformation into non-dimensional integrated indexes. The integrated risk index value of (i+1)-area of given sphere may be calculated as a weighted average of individual risk indexes of i-area. The Saaty´s method has been chosen for determining the weights of risk indexes. The proposed method enables the comparison of otherwise non-comparable risk spheres. The applicability of the method in practice has been verified by the assessment of environmental and technological risks in a selected region. The aim of the method is to provide state administration and self-administration bodies with a tool which may help them in their effort to prevent the probability of activation of threats, reduce the consequences of undesirable events, increase the effectiveness of reconstruction and set priorities in the risk assessment process.

DOI: 10.4018/978-1-60960-156-0.ch004

INTRODUCTION

At present the acceleration of civilization changes is unprecedented. The civilization heads for complexity, virtualization, medialization, and planetarization in its pursuit of higher standard of living, preferring economic aspects, mainly the maximization of profit, while underestimating the environmental and social elements.

Globalization becomes evident not only in the economic sphere, but also in other areas. Besides indisputable advantages (such as accumulation of potential for solving current problems, economic growth, improved flow of information and communication, crossed borders, etc.) it causes numerous threats, often of an entirely new nature. The current threats to society result from possible terrorist actions, the environmental burden caused by the emissions of substances and energies, climate change, depletion of natural resources, disposal of dangerous substances and wastes, accumulation and anonymity of power, elimination of competitors, media manipulation, loss of democracy, identity and cultural traditions, increase of uniformity including uncontrollability of most processes.

The activation of critical threats or their combination causes considerable death toll, health decline, especially in the densely populated regions, loss of stability or disturbance of loaded ecosystems, damage to private and public property. It often leads to local conflicts, which may change into national conflicts and escalate even in a worldwide disaster.

The prerequisite of sustainable development of modern society is the guarantee of acceptable level of risk, on a regional level as a matter of priority. It determines the possibility to guarantee sustainable development on national and global levels. In order to fulfill such a requirement it is necessary to apply the principles of subsidiarity, complementarity, confidentiality, proportionality, the polluter pays, etc.

The process of building the democratic structures supports community´s decision making procedures leading to appropriate quality and sustainable development of all areas of life.

Effective focus and management of activities in the region assume the existence of information platform supported by the latest scientific findings. It is clear that the knowledge of current regional security levels of individual spheres is an important element, which significantly contributes to the right work orientation of state administration employees and elected members of self-administration as well as to the effective allocation of regional resources. Each region has its special characteristics and is unique and different from other regions. It is clear that different risks predominate in every region and have to be managed as a matter of priority. The perfect overall solution will never obtain enough financial, material and human resources.

The economic, environmental and social development of a region can be effectively managed only on the assumption that the individual components of risk, the probability of activation of identified threats and the potential range of damage caused by an undesirable event are known. The implementation of effective preventive measures minimizing the occurrence of emergencies and crisis situations in the key areas of region is conditioned by integrated analysis of potential threats and regional vulnerabilities and risk prioritization. It is also an important tool for the activities of authorized entities of administrative and territorial units.

It results from the above mentioned that the sustainable development of a region needs complex and detailed assessment aimed at the security level of individual spheres of the assessed territorial entity. Therefore it seems to be highly efficient for the authorized administrative bodies to have an adequate method enabling them to predict critical risks in key spheres identified in advance.