

TECHNICAL AND SOCIO-ECONOMIC ASPECTS OF SOLVING CURRENT ENVIRONMENTAL AND SECURITY PROBLEMS

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INTEGRATED SAFETY OF THE ENVIRONS

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PREFACE

Technical equipment and technical works are the result of the skill of generations. Particular attention is currently paid to the issue of large technical works that provide quality basic services to the population. They have a socio-cyber-technical form. Because of their importance for the population, the basic functions of the state depend on them and therefore the word critical is associated with them.

A critical infrastructure is a system that is divided into sectors and elements. The critical infrastructure sector is that part of the critical infrastructure into which the elements are assigned; the sector may contain one or more critical infrastructure sub-sectors. The element of critical infrastructure is particularly the civil engineering, public service and information system in the critical infrastructure sector, the disruption or destruction of which would, according to sectoral criteria and cross-cutting criteria, have serious adverse consequences for the economic and social function of the state and thus the quality of life of the population in terms of protecting their lives, health, safety, property and the environment.

It is shown that despite a great deal of knowledge about technical works, their equipment, structures, interconnections, risks and safety, accidents and failures of technical works still occur. There are several reasons for this: the dynamic variability of the world; lack of human knowledge and skills; slow use of knowledge and experience gained in practice; and unsatisfactory awareness of the risks and their consequences for technical works and the public interest. Accident and failure studies show that an important factor is the correct implementation of responsibilities at different management levels. The safety of technical works is also the responsibility of politicians and public administrations that create the conditions for people and the operation of technical works and supervise the technical works. The quality of risk management aimed at the security of any entity requires knowledge, resources, finance and responsible implementation. The issue of analysis, management and coping with the risks associated with technical works is currently at the forefront of scientific, professional and lay public interest.

Large technical works represent a system of systems, a series of open and interconnected systems, and therefore their behaviour is dynamic and depends on a number of factors. Managing their safety is not easy and requires the application of specific engineering tools to manage potential risks. Safety is understood as a feature of the whole technical work that is determined by the quality of the set of anthropogenic measures and activities aimed at safe technical work, even under its critical conditions.

The safety of technical works is now understood in an integral sense. Great attention is paid to the links and existing flows between sectors. In the case of a failure of one system, the mutual links can have serious consequences in the form of chain reactions and domino effects accompanied by failure, respectively, and the gradual failure of other important systems and services or technical works that belong to different socio-economic sectors and include physical, cyber, organizational and social

systems, i.e. individual devices, machines, components, systems, resp. whole production or service units.

Sustainable development combines care for the carrying capacity of natural systems, along with the social, political and economic challenges that mankind is facing.

Since the degradation of natural and social capital has such significant consequences, the question arises as to why adequate and systematic actions have not been taken into practice and, in particular, enforced, to mitigate it at both local and global levels.

The sustainable development of human society requires to synchronize the socio-economic activities, not only with the environment in which it directly carries out its activities, but it is necessary to take into account the relations in a broader territorial context, often up to a global perspective. People for life and socio-economic activities need a suitable environment in the broad sense, which includes not only the environment of an individual and society, but also the working and urban environment, landscape, ecosystems, cultural and social context and relationships.

Soil is one of the basic economic resources. The size of the available non-urbanized area is in each country limited, so it is very important the continuous use of the in the past urbanized territories. In the context of sustainable urban development there is often mentioned the need for preference the restoration of Brownfields to urbanisation of previously unused territory (green meadows-Greenfields), in order to prevent the uncontrolled growth of cities. From the point of view of sustainable development, it is necessary to ensure that there is no abandonment of old economically unprofitable industrial areas, which are often burdened also with contamination. There is a need to establish a legal and financial framework for their continuous renovation. It is important to promote research and development of new environmentally suitable technologies and management practices to reduce the costs of the recovery process. For this reason it is very important the cooperation of public and private sector.

An attendant phenomenon of dynamic economic development of the regions in recent decades is spontaneous extensive growing of metropolitan agglomerations, and uncontrolled expansion of settlements. New commercial activities are often built on green meadows and thus there is another expropriating of a free landscape. On the contrary, the lands on which there were before placed industrial activities and which represent a potential source of contamination of the environment, they are often abandoned or only partially used. These are known as Brownfields – they are usually some territories left to their own fate, or they are only partially exploited due to fears of possible contamination of the territory. As Black-fields there are referred the lands that are extremely contaminated and the contamination rate represents an unacceptable risk to human health and to the entire ecosystem, or the lands, which clean-up is economically and very time consuming and, therefore, in the renovation of the territory there are present several limitations for future utilization of this territory.

The issue of environmental loads is addressed as a priority to improve the status of deteriorated and endangered components of environment due to long-time human activity and at the same time for the creation of the conditions for the gradual elimination of the sources of contamination of groundwater, soil and rock environs and remediation of contaminated components of environment. The main objective is to achieve a high level of human health and the quality of the individual components of the environment and associated higher level of quality of life.

At the development of the country and the raising of new industrial sites, it happens that some of the old industrial enterprises cease to exist. The buildings and areas are no longer used and deteriorate. Thus there arise for the country different environmental burdens that may cause contamination of the environment. In industrial areas there are the most common causes some uncontrollable losses during the handling with chemical substances, preparations, leakage from the tanks and the crashes. Some abandoned buildings in urbanized or a rural environment are proof that times have changed and the society does not have the capacity or the interest to clean up the unwanted, outlived remains. Revitalization and regeneration of the economic value of agricultural buildings, yards and constructions is the long term and for a village often too demanding process. System

approach and positive examples may suggest how to proceed for the burden of the village to be turned to its competitive advantage.

There are lots of disasters, where risks are not negligible. Some of the disasters have a high potential to destroy the territory, and not only its citizens, but also the landscape, ecosystems and human settlements. Therefore, the institutions organising the life of human society must properly manage and direct the safety of the socio-economic activities in the territory, in particular from the point of view of environmental protection of the society. It is self-evident that also individuals need to adapt their behaviour to these objectives. For the implementation of environmental and security policy in practice, there are used multiple instruments, economic, legal, educational, informative, administrative, institutional, and in recent years there are promoted also some voluntary tools.

The main obstacle to the improvement of the quality of the environment it is unsustainable production and consumption, combined with the tremendous pressure on natural resources. Whereas the sustainable production and consumption will decisively contribute to fulfilling the objectives of sustainable development, it is necessary to achieve changes in production patterns and consumer models, while maintaining the growth of economic performance. Integration of these conditions is subject of the environmental policy of the new generation, in which the tools of direct regulation (legal instruments) are complementary to instruments of self-regulation, the so called voluntary tools.

The aim of the Conference "Integrated safety of environs 2019" is to provide a suitable platform for the information of professional and scientific public, representatives of self-government and state administration, the exchange of experience and the presentation of new results in the issue of security of the environment.

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