VÉDELEM TUDOMÁNY
KATASZTRÓFAVÉDELMI ONLINE TUDOMÁNYOS FOLYÓIRAT

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ENVIRONMENT PROTECTION AND TECHNICAL ASPECTS OF DISASTER MANAGEMENT ACITIVITIES

Abstract

In recent decades, significant climatic and technological changes have been observed at both global and regional levels that have a direct impact on public safety thinking and the tasks of the relevant bodies. The aim of the article is to introduce the complexity, location and role of the connection by presenting the essential technical links between the disaster management task system and environmental protection. It also provides information on points that can influence the changing security challenges and the areas to be researched.

Key worlds: environment protection; disaster management, technical equipment system

A KATASZTRÓFAVÉDELMI TEVÉKENYSÉGEK KÖRNYEZETVÉDELMI ÉS MŰSZAKI ASPEKTUSAI

Absztrakt

Az elmúlt évtizedekben jelentős mértékű klimatikus és technológiai változások figyelhetők meg mind globális, mind regionális szinten, amelyek közvetlenül hatnak a létbiztonsággal kapcsolatos közgondolkodásra és az érintett szervek feladataira. A cikk célja a katasztrófavédelmi feladatrendszer és a környezetvédelem közti meghatározó műszaki kapcsolódási pontok bemutatásával rámutatni a kapcsolódás összetettségére, helyére, szerepére. Egyben információt szolgáltatni a változó biztonsági kihívások kezelését befolyásolni képes pontokra, a kutatandó részterületekre.

Kulcsszavak: környezetvédelem; katasztrófavédelem, műszaki eszközrendszer.

1. INTRODUCTION

Thanks to accelerated technological development, we have had to face the negative environmental and health effects of global warming and climate change on a global scale. In the present study, I manage to explore the essential connections on the basis of the available data, as well as the responsibilities and powers of the emerging disaster situations and the technical regulators and organizations that ensure their elimination and control, primarily the disaster management organizational system.

We prove the actuality of the topic in the knowledge of the essential regulations of the laws, presenting the transformation of the organizational system, emphasizing the importance of prevention, and defining new research areas.

2. LEGAL THEORY ASSESSMENT

Articles O) and P) of the Hungarian Basic Law set out the basic principles that include the individualized responsibility and obligation of the individual, in the social role, both locally and globally. Their commitment extends to economic, social and natural values, so that the protection function, interpreted at the individual and societal level, can be clearly defined as a common goal. [1] Due to the accelerated development trend, the achievement of the above goal and the formulation of preventive solution alternatives also greatly affect the task system of disaster management. It is everyone's duty to create safety of life, preserve natural and cultural values, and ensure development. By sustainable development we mean when we can meet the needs of the present without compromising the ability of future generations to meet their own needs.

Among the protected legal objects, the protection of human life needs to be mentioned primarily as a common denominator, which includes physical integrity, property and property rights, and the protection of one’s personality. The protection of human life and health is

governed by public law. If the above legal objects are directly endangered or violated by intent or human negligence, it is so dangerous to society that it is called a criminal offense by the law in various facts. The Penal Code regulates the assigned legal consequence, applying severe punishment as an "ultima ratio" as a general and special means of prevention. The right to human life, interprets health in an individual and complex way, also applies to the natural environment as a whole. Article XXI. recognizes the human right to a healthy environment.

This right is guaranteed by the state primarily through the tools of administrative authorities and the operation of rescue organizations. The fulfilment of civic obligations is also a determining element in ensuring the system of conditions. Environmental and disaster protection is an international issue of national importance because it determines the basic conditions necessary for the existence of a nation at the local level, but both negative and positive trends have cross-border and continental effects. The system is defined from the bottom up in terms of efficiency, because adequate human resources are the foundation of the protection system. This is true for those employed in defense state and municipal organizations as well as for civil society actors. Therefore, everyone has the right to have information about their own environment, the sources of danger to their environment, and, in the event of an emergency, to have the knowledge to ensure protection properly. In order to create healthy environmental conditions, it is essential to create a structured system of protection conditions, of which, in addition to human resources, the organizational system of disaster management is one of the cornerstones. According to the logical decision of the legislator, the risk of the occurrence of events and accidents arising from civil hazards that seriously, directly endanger human life is the duty of the body whose life-saving and damage elimination will have to be carried out. In doing so, it created a direct link between professional responsibility and the obligation to prevent and rescue. It follows, of course, from this relationship of interest that citizens also have a duty to play a role in disaster management, because everyone is responsible for themselves and is obliged to contribute to the performance of state and community tasks according to their abilities and possibilities.

The strategic importance of the disaster management body is underlined by the fact that its remit has been constantly expanded in the recent period, with only those powers designed to protect human life, health and the basic conditions that ensure them. The relocation of environmental responsibilities for water and water protection is a clear signal of the growing importance of this issue, its focus on the state, the practical emergence of sustainable development in both preventive measures for protection and the management of disasters.

The connection points are also clearly outlined in the legal regulations. The rights and obligations set out in the Basic Law have been established in accordance with the areas of expertise. The complexity of the topic is to be supported by the exploration of a broad system of legal contexts. Damage events in the natural environment play a significant role in the continuous rethinking of the function of organizational levels that provide protection.

The emergencies defined in Article 53 of the Basic Law can be related to natural - geological, hydrological - effects, weather, biological, as well as geographical conditions - factors. Industrial - energy, nuclear, chemical, environmental - deforestation, air pollution, soil and water pollution, social - migration, terrorist acts - and transport emergencies - air, water, road accidents - can lead to the emergence of man-made disasters.

The goal to be achieved globally is to minimize the range of risk factors related to climate, human health, and biodiversity. Environmental regulations and legal regulations are among the strictest in the world. However, regulations cannot fully protect us from global environmental impacts. Preventive measures are needed down to the lowest levels. We need to reflect on the challenges of today, taking into account the interconnectedness of several elements. Joint strategic decisions of three dimensions are needed to prevent, to ensure sustainable development and to deal immediately with the damage that occurs, to ensure full protection. The three dimensions are the economy, the environment and society, which cannot be stabilized without each other. At the international level, the biodiversity of our time, the growing number of deforestations, the global challenges posed by water pollution and, last but not least, climate change require commitment and effective cooperation.

In order to protect the population of Hungary, the efficiency of disaster management is served by Act CXXVIII of 2011. on Disaster Management and amending certain related laws [2]. In

order to ensure harmony between human activities and nature, the National Assembly created the Act LIII of 1995 on general rules for the protection of the environment [3]. Section 3 paragraph (1) - (2) of the above law stipulates the areas that are closely related to environmental protection, but they are provided for in a separate law. On the occasion of the given disaster prevention and treatment, the laws corresponding to the given problem area must be taken into account, examining the regulations specifically or due to the complexity of the disaster in their context.

The system of fire protection tasks operated in accordance with the prevention, rescue and organizational rules described in accordance with the Act XXXI of 1996 on fire protection, technical rescue and fire brigade [4].

3. INDTRODUCTION OF THE RELATED DISASTER MANAGEMENT ACTIVITIES

3.1. Prevention and preparedness activities

The Disaster Management Act, which came into force in 2012, introduced many changes. It has been in line with EU requirements and has resulted in an overall transformation in the roles and responsibilities of the organizational system. Coordinated legal regulations have been adopted for the treatment of damage events and environmental disasters. The regulators of the fields are legally coherent, including the areas regulated by the Environmental Protection Act, the elements requiring protection and the impacts promoting preventive activities. The regulation, which is the framework, has eliminated many internal regulatory gaps, thus ensuring the coherence of the regulation of disaster management and other bodies involved in the protection process - civil, water and other sectoral bodies - based on a uniform use of terms. The primary goal of disaster protection is to eliminate environmental damage events. [5] Preventive measures are determined by planning, the system relies on well-founded forecasts.

The system based on forecasts and proficiency tests ensures the strengthening of the efficiency of the performance of official and specialist tasks and the positive influence on the processes (establishment, use, operation, continuity of operation, operational safety). In order to be effective, the organization uses the tasks of prevention of official work in a system built on each other. The first level is informing and preparing the population, clients and civil professional actors through on-line and written press appearances, professional conferences and exercises. Second level is prior consultation during official / professional licensing procedures. The third level is the verification of regularity through official controls, which esults in calls or fines by the authority. The fourth level is the official, professional analyst, evaluation work following the damage events, the areas of which are the fire inspection procedure, damage on-site inspection, malfunction investigation, on-site inspection, experience processing, and then publication.

Among the social and economic phenomena that pose a special danger to human life and the environment, the cases entrusted to the supervision of the disaster management organization can only be handled effectively with strong authority and official tools, and to prevent serious accidents.

The official and special authority procedures of the fire brigade, industrial safety, water management and water protection specialties are carried out by the county and branch authority departments in accordance with the complex, integrated official activity. It follows from the rule of logic, the lawfulness of the causal chain, that fires resulting from the violation of fire protection rules can have serious consequences in a dangerous plant. In the same way, violating the rules on hazardous substances can lead to an explosion, an extensive fire. Both of these cases can result in environmental pollution and pollution in water, air and land. An integrated and complex approach ensures a high level of professionalism through synergistic cooperation between disciplines, thereby raising the overall level of protection and public safety.

3.2. Disaster management operations

The ongoing global environmental impacts have required states, both internationally, to adapt to the challenges and to reshape and renew their defense systems. In disaster management, the

triple structure of the defense task system appears uniformly due to the rapid, renewable, development method of the disaster management organization system. The three legs are prevention - the prevention of disasters and their effects -, the elimination of existing disasters and the restoration of conditions resulting from a damage event.

Event management is based on planning. The planning of security tasks is legally regulated. In order to establish an adequate level of protection, it is necessary to perform a risk assessment by analyzing the given geographical conditions, geographical location, hydrological factors and infrastructure. Based on the risk assessment, taking into account all of the above factors, a response plan document is prepared, in which the essential resources - material, personnel and technical - are assigned to the disaster management measures and task system. [6]

As a primary intervention body, planning begins with the secondment of a fire brigade to prevent an incident from occurring. It is important to mention here, referring back to the organizational system, that the integration of the professional municipal fire brigade into disaster management was the biggest organizational transformation. [7]

The set of procedures used to prepare, manage and implement the rescue activities of a disaster management organization is the disaster management operation activity. Emergency planning is based on detailed operational planning by fire departments.

During the planning and construction process, it is extremely important that the well-established theoretical expertise works in accordance with the coordinated implementation and elimination of damage. Time is also of great importance in the mechanism as a factor. Therefore, based on chronological cyclicality, the logical order of disaster management tasks is as follows: prevention, rescue, repair and recovery. [8]

The time factor is a decisive connection point, at the same time it is typical in the disaster management and environmental protection task system. Time is a factor that needs to be examined to determine the intensity of the spread of a hazard. For any threat that has occurred and is spreading rapidly, only an organization that is able to respond quickly can respond effectively. Rapid spread depends on the characteristics of the hazardous substance or energy and the physical, chemical characteristics and interactions of the carrier medium

(environmental element) that mediates the hazard. Both fire and dangerous substances released into the open air (air, water) can spread quickly. The standby staff of professional firefighters operating the disaster response equipment system, with its continuous deployment, ensures the responsiveness needed to quickly assess the incident, rescue people, prevent the spread of danger and reduce the harmful consequences. Disaster management operations must always be adapted to the circumstances, the severity of the damage and the extent of the damage. A normative regulatory system determines the order of performance of tasks, ensuring the optimum efficiency and effectiveness is essential. In the interests of both prevention and an effective control procedure, continuous analytical activity is warranted, comprehensively for disaster management operations, meteorological forecasts, and environmental forecasts. The experience gained needs to be incorporated into the formal disaster management education system and, in addition to its theoretical foundation, into its practical protection activities.

4. SHORT ANALYSES OF TECHNICAL CONDITIONS FOR DISASTER MANAGEMENT ACTIVITIES

Technical theoretical knowledge and practical knowledge can ensure the regular planning, maintenance, control, change, protection, correct operation and shutdown of a process.

The use of engineering methods in disaster management can be traced back to ancient times, but nowadays special emphasis has also been placed on the application of official law. Fire protection and technical guidelines help the work of designers, law enforcers and operators.

In terms of needs, I move from the most time-critical event types to the less time-critical tasks.

The damage events that occurred are the most time-critical events. In order to respond properly, the set of technical conditions must be available at a given point in time, both from a human and a technical point of view.

Such damage events include fires, technical rescues (traffic accidents, damage caused by local heavy rainfall, storm damage, lightning floods, damage to critical infrastructure, pylon bursts, power line outages, etc.), the release of dangerous goods in the transport sector or in a dangerous establishments. A special type of time-critical event is a major accident involving dangerous substances that endangers the environment and a human life through the release of toxic substances in the air, the physical effects of overpressure, and the harmful effects of heat radiation. [9] [10]

In these cases, without the existence of a system of technical conditions, it is inconceivable to correctly assess and understand the situation, to apply the answers given to it quickly and routinely, and to operate knowledge and legal and technical tools efficiently and in a targeted manner.

Consistency and correct operation of the system of technical conditions for on-site damage event management and background support (signal reception, evaluation, deployment management, operations management, event analysis, decision support simulation, propagation model running, logistics, telecommunications, communication) for the protection of human life and property decisive for the most time-critical events.

The second most time-critical type of workflow is when an event occurs or information comes to the attention of the authority in which human life and property are not in immediate danger but are in indirect danger. In such cases, during an official inspection or inspection, the processes must be correctly and well evaluated from a technical point of view in order to prevent and eliminate the immediate danger.

In terms of time criticality, the next type of workflow is the system of official and specialist licensing procedures (establishment, operation, commissioning, etc.), procedures initiated upon request.

The next type of time-critical workflow is the planning workflow, which focuses on the planning of day-to-day tasks as well as planning to improve the operating conditions of the disaster management system. In this case, the relative longest time is available. Adapted to each budget cycle and / or targeting a single application source, the decisions necessary to

maintain and develop the level of human and technical development are made by the authorized decision-makers, and the necessary internal and external specialists are involved.

In the course of co-operation with the partner bodies, special emphasis is placed on the system of personal and material technical conditions that the bodies involved in the co-operation have. It greatly affects the effectiveness of cooperation.

In order to determine the human (personal) side of the system of conditions, it is necessary to indicate the categories of technical and technical equipment that can be found in the task system of disaster management.

5. SUMMARY AND CONCLUSIONS

Due to the complexity of the topic, we tried to present the significance of the close relationship between the environment and disaster protection, without claiming to be exhaustive. Priority was given to describing the innovative transformation of the professional disaster management system in line with global changes and international expectations, as well as to briefly interpret the legal framework and emphasize the importance of preventive measures.

Increasing people's safety and sense of security can be ensured and maintained by further strengthening the disaster management organization system, increasing the efficiency of task performance, developing and renewing the legal environment and task planning.

Each element set out in the Environmental Protection Act can be defined as an area to be researched, both separately and in its context. The changes of our time require complex solution proposals, so all areas - land, water, air, waste management, hazardous materials, etc. - examining it alone can be a significant step forward in defining development directions for disaster management. An area to be researched is whether the development of cooperation between the disaster management organization and other environmental authorities exercising the powers of the environmental protection authority or the relevant public administration

bodies can be justified to increase the efficiency of pollution prevention and damage event management and to mutually reinforce positive effects. The scientific elaboration of the connection between water management and disaster management is also becoming more and more topical. Both the formulation of appropriate responses to the challenges of water scarcity and the scientific elaboration of modern methods of combating local damage from extreme precipitation phenomena due to climate change are timely.

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