

THESIS BOOKLET

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Title of dissertation: **Examination of the cooperation of organizations participating in incident site interventions**

1. FORMULATION OF THE SCIENTIFIC PROBLEM

- a. The new system of disaster management in Hungary is built on the fact that the state professional disaster management organization does not perform all the disaster elimination tasks on its own. It must constantly coordinate the work of many different stakeholders, being its responsibility. It is a prerequisite and a tool of the development of a well-functioning system of cooperation, in which we need to revise the existing bilateral and multilateral cooperation agreements, the agreements must be concluded with the new partners. Such agreements should be registered in the system in order that the information necessary for reaching preparedness and performing interventions be accessible at any time.
- b. Since 2012, several legal actions have been prepared and are underway for the implementation of disaster management tasks defined in the Fundamental Law of Hungary and the Disaster Management Act. Only a few analyses of the adequacy of the application of the new rules in practice have been made. There is a need to continuously process the experience as soon as possible and to evaluate them for the sake of progress and development.
- c. The managers of prevention and disaster elimination activities in Hungary do not always have a satisfactory knowledge of the direction, deployability, special abilities, compatibility of equipment and the coordination of the work of cooperating units. There is a need for the managers to be able to practice, at disaster management exercises, the work of the entities involved and the control tasks of cooperation.
- d. It has been encountered during the liquidation of incidents that the units involved in intervention, on the one hand, do not have an up to date knowledge of their disaster

management tasks, of the organization responsible for direction and other executive entities, on the other hand, the intervention tasks have not been raised to skill levels. Because of this, the participating organizations are not always aware of the tasks, under whose direct control, with whom, exactly where and how to implement them. This problem can be solved in a way that organizations involved in protection drill the intervention and cooperation tasks at disaster management exercises.

- e. In the current disaster management preparation system, it is not uniformly regulated, on what levels (central, regional, district or their combination), for what scope of participants (managers, responders, controllers, etc.), for what tasks, with what methods and tools they train and prepare for the cooperation of participants at exercises for the sake of efficient protection against disasters. Thus, the rules of such an exercise, based on uniform principles, should be definitely elaborated, which is recommended to be inserted in the Training Manual, along with the current firefighting and civil protection exercises.
- f. A common failure is that although verification takes place in the course and at the end of exercises, the analyses and evaluations do not reveal the errors and the likely causes to the extent necessary, and they do not clearly highlight the strengths either. In addition, if there is no proper system of criteria elaborated to assess exercises, a given exercise cannot be precisely compared to their previous exercise, or an exercise with a similar purpose organized by another professional organization. During the planning of exercises, therefore, special emphasis should be placed on the conception of a uniform system of criteria of drafting assessment reports.

In my dissertation, I research the causes of the problems listed above, related to each other in fact, analyzing the current system and exploring gaps, I look for the solution options to fix the problems, I make recommendations for modifications and improvements.

2. RESEARCH OBJECTIVES

My aim was, as a result of my research, to receive an answer to the question of how to improve the cooperation of participants in disaster management during incident site

interventions, determined in the Disaster Management Act, thus to optimize the rescue of victims.

To this end, I summarize the dangers in Hungary capable of triggering a likely emergency, I examine which natural, man-made and other risks and incidents are specified as extremely important in terms of protection by Section 44 of the effective Disaster Management Act and Disaster Risk Assessment.

To define the areas of cooperation, I regard it as necessary, and therefore, examine whether certain technical terms of the legislation regulating disaster management in Hungary name a given task relating to the protection against disasters in the same way.

I systemize the tasks of organizations involved in disaster management, consistent with the protection against disasters, based on existing legislation, in terms of which areas the professional disaster management organization can cooperate with a given organization. The organizations involved in interventions, with the exception of the professional disaster management authority, carry out their disaster management activities beyond their basic tasks, so in my thesis, it is not my aim to examine the full range of tasks of these organizations, I only take account of their disaster management obligations.

I set up a comprehensive picture of the conditions of the involvability of voluntary rescue organizations, social and charitable organizations and individuals in disaster management.

I analyze how young people performing community service can be involved in disaster management tasks.

I aggregate and summarize the structure, the internal rules of command and control of professional disaster management organizations and the directional system relating to the preparation of organizations obliged to participate, which is decisive in shaping and maintaining cooperation.

I analyze the current establishment, operations and registration system of cooperation.

Based on the information disclosed as a result of my research, I elaborate a matrix system, based on which the range of cooperating partners and a list of equipment that may be involved in emergencies, as well as the assistance methods offered by them can be determined.

I examine the system of firefighting and civil protection exercises preparing for cooperation tasks in terms of whether the managers and the executive entities are properly prepared for carrying out complex disaster management tasks, whether they are capable of acquiring skills of cooperation of participating organizations.

3. FORMULATION OF MY RESEARCH HYPOTHESES

- a. I assume that by aggregating situations and events highlighted in the effective Disaster Management Act, specified in the Disaster Risk Assessment, most frequently occurring in Hungary, therefore appearing as potential dangers, based on the two basic regulations, for the elimination of what hazards one must primarily be prepared in Hungary.
- b. I assume that the differences found in the denominations, relating to the preparation for protection against disasters can be resolved, that both lawmakers and law enforcers consistently use the technical terms in all cases, referring to the same area.
- c. I assume that, by overviewing the disaster management tasks of organizations obliged to carry out disaster management tasks by law, it can be ascertained, in which areas there is a need for the involvement of specially trained and/or equipped organizations, and state, civil protection, voluntary rescue and other social and non-governmental organizations, suitable for performing general protection tasks.
- d. I assume that based on the definition of both disaster management tasks and the areas of cooperation, and the scope of cooperating partners, a matrix-type database can be created, which would assign emergency management tasks of organizations capable of protection against them to each other. This matrix can directly be used by the leaders of professional disaster management organizations or onsite operations controllers for planning disaster management tasks, conducting, quickly and accurately, incident site interventions.

- e. I assume that a single, complex disaster management exercise developed by me is suitable for practicing and drilling the tasks of managers and executive organizations participating in incident site interventions, and the cooperation with the organizations involved.
- f. I assume that incident site interventions will be measurably more effective if the exercises are evaluated by the organizers and the participants based on a single system of criteria, appropriately developed and responsible leaders and experts incorporate the experience gained into emergency management plans, and use them in the course of preparation and protection tasks.

4. METHODS USED DURING MY RESEARCH

During my researches, I first studied the legislation, laws, decrees and regulations, Director General of the National Director General for Disaster Management (NDGDM) Instructions and Measures in force, defining the disaster management responsibilities of the state and individual organizations. I gathered information in national and international printed and electronic literature on the subject, I researched professional analyses, studies and presentations performed at professional forums, articles published and studies, to which I have referred in my thesis.

I used the experience of my scientific activities gained during the 20 years of professional firefighting officer and senior officer career, as a teacher of the Disaster Management Training Center, as a member of NDGDM Technical Advisory Board, as well as the knowledge gathered during my educational activities for firefighters and experience gained during rescue exercises organized by me, involving partner organizations. I elaborated the relevant technical analyses, studies, study aids and textbooks written by me over the years.

I led consultations with experts familiar with the subject, both in Hungary and abroad, when, as an invited expert or teacher, I participated in various firefighting and partner exercises, demonstrations and conferences.

To test my hypotheses, I collected data from the sources mentioned above, then using the deductive method, I proved my assumptions, or perhaps rejected them. From the general

research methods, I used the methods of systems-based approach, including qualitative observation, particularly practical observation and analysis, starting from the fact that the existence of laws and the legal knowledge of those obliged to carry out these tasks are not yet equal to successful performance. To do this, we need to analyze the content, the quality of real events (in our case, emergency cooperation and preparedness exercises). Of course, measurability also requires quantitative data analysis, therefore, I regarded it as necessary to systemize the development, the planned upgrade trends and the evaluation of cooperation and the criteria for the conduct of exercises.

5. PRESENTATION OF MY EXAMINATION CHAPTER BY CHAPTER

In Chapter 1, I aggregate, based on a clustering system under Section 44 of the Disaster Management Act, the probable hazard sources that may trigger emergencies in Hungary, and outline their main characteristics. I insert the risks defined by the Hungarian Disaster Risk Assessment (DRA) into this summary, and I supplement it by presenting other hazard factors not negligible in terms of preparing the authorities responsible for the population and protection.

In Chapter 2, I examine the various interpretations of disaster management tasks and periods, named in the new Disaster Management Act, Government Decree or Minister of the Interior Decree, to clarify these basic definitions.

In Chapter 3, focusing on the preparedness tasks, I outline the system of directing disaster management tasks, the protection/defense administration system, entering into force as part of the restructuring of public administration, in terms of what the procedure of establishing and maintaining cooperation, as part of the preparation for organizing exercises. I focus on the work of new county and district protection/defense committees.

In Chapter 4, I examine the disaster management cooperation tasks and duties defined in the Disaster Management Act, described in detail in a Minister of the Interior Decree, and of organizations involved in prevention, preparedness and protection. I emphasize the presentation of the professional disaster management authority and organizations actually involvable in the protection efforts.

In Chapter 5, I examine the procedure of the cooperation of those participating in disaster management. I review the directional system, the regulations of preparedness, the establishment and maintenance of cooperation of these organizations. I aggregate the types of organizations involved in national and regional cooperation, their protection functions, the capabilities offered and implementable.

In Chapter 6, I summarize the types and characteristics of firefighting and civil protection exercises named in the Training Manual in force. This is the manual, based on which preparatory training and the cooperation exercises of participating organizations are organized. Since the third type of exercises, i.e. disaster management exercises, is not named in the Training Manual, I analyze a civil protection exercise, practicing cooperation, also in terms of what components can be transferred to an exercise type involving complex civil protection and firefighting tasks, preparing for protection against disasters. Building on the assessment, I define the principles and rules of this new type of experience, so that it can be made part of the Training Manual.

6. FINAL SUMMARY CONCLUSIONS

It can be manifested from the systematization of events, incidents and risks triggering emergencies, listed in the Disaster Management Act and DRA, for which emergencies the current regulations primarily plan to prepare Hungary today. I conclude that the two regulators do not exactly name the same incidents or risks as factors primarily threatening Hungary. There are similarities, but based on various researches, they highlight different hazards.

I find it useful to define the scope of hazards threatening Hungary not in an Act but rather in a decree on its implementation, which can be updated and supplemented with a higher flexibility to adapt to the protection against real vulnerabilities and needs. The lower level of legislation would be useful to show the changes of risk levels, identified by DRA.

I ascertain that legislation does not clearly define the disaster management tasks, thus the periods of tasks to be performed. They sometimes mention protection as aversion, rehabilitation as elimination of damages, and in some cases, they do not specify the preparation period, so, the four periods of disaster management cannot always be clearly

distinguished. I suggest the following uniform denominations for disaster management tasks and periods: Prevention, Preparation, Protection, Recovery/Rehabilitation.

By reviewing the protection/defense administration system, it can be ascertained that the coordination of cooperation between agencies involvable is part of the tasks of public administration authorities, directing the protection against disasters. This allowed for the accurate definition of the scope of cooperating state organizations, the regulation of the order of their involvement.

In terms of cooperation, another important element of the system is that it provides a basis for the development of cooperation with NGOs and entities owned privately and the determination of the conditions of their use. Based on the regulation of the protection/defense administration, it is a possibility and obligation to support the work of organizations, agencies, committees controlling preparation through disaster management, professional decision-making, organizational, administration and consultancy contributions.

The aim of concluding cooperation agreements between the professional disaster management authority and organizations involved in disaster management is that the amount and quality of the stock of equipment and human resources necessary be ensured by deploying stakeholders. Currently, a Director General level regulation ensuring the consistency of establishing and shaping cooperation is missing, and the criteria of the establishment of the scope of cooperating bodies and the tasks assumed are not systemized.

To this end, two professional tasks must be performed:

The procedure of concluding cooperation agreements, of their elaboration and maintenance must be identified and regulated in a Director General Instruction or Measure. Based on the disaster management responsibilities of cooperating agencies, a database must be compiled, in which the names of organizations involvable in disaster response and the areas of cooperation should be recorded.

Complying with the principle of consistency, but bearing in mind the specific needs, and leaving the possibility of flexible plannability, a system of planning and implementing exercises must be determined. I conclude that the complex firefighting and civil protection exercises named in the Training Manual are not identical to the exercises drilling disaster

management cooperation to be implemented in real life. The principles of the criteria of a complex disaster management cooperation exercise are not included in the Training Manual. I have developed the rules of this complex type of exercise and the principles of organizing and assessing it.

7. NEW SCIENTIFIC ACHIEVEMENTS

During the study and analysis of the tasks of the bodies involved in the response to the factors threatening Hungary, suitable for triggering disaster risk emergencies, and based on the observations of cooperation agreements concluded, I have developed a matrix system, transparently aggregating the cooperation partners and the areas of cooperation. The database can be managed in a practical way and used in the activation of cooperation.

By the fact that the disaster management system was put under state control, it became visible what the skills, equipment and personnel of the organizations involved in disaster management are, and in which directional system they can be aggregated. I summarized and systemized the aspects in my dissertation, based on which the system of establishing and maintaining cooperation, the conclusion of agreements can be regulated. Since NDGDM is responsible for and primarily interested in the cooperation of professional disaster management agencies and organizations involved, I suggest that the above criteria for cooperation and the system of direction and operation be regulated by a Director General Instruction or Measure.

In the course of preparation for the protection against disasters, based on the examination and analysis of exercises in the effective Training Manual, as well as of a specific civil protection exercise, in order to intentionally develop cooperation, I elaborated the planning, organizational, conduct and assessment rules, stages and principles, consistently applicable nationwide during the organization of this new type of exercise, the complex disaster management cooperation exercise. Thus, this exercise can be placed in the system of exercises manifested in the Training Manual.

8. RECOMMENDATIONS FOR THE PRACTICAL USE OF THE RESEARCH ACHIEVEMENTS

My proposals for the use of the conclusions and scientific results, expressed in my PhD dissertation, relating to cooperation and the organization of exercises:

- Use them during the preparation of additional regulations of disaster management preparations, internal guidelines determining requirements, tailored to the specific features.
- Apply them during the conclusion of new cooperation agreements and the maintenance of the existing ones.
- Integrate them into the process of the disaster management training system.
- Incorporate them into the curriculum of teachers and students involved in public education.
- Use them during the elaboration of emergency plans.
- Use them as a basis when organizing and planning the conduct of cooperation exercises.
- Apply them during real disaster management tasks.
- Carry out further researches and analyses of the subject, based on which new scientific achievements can be attained.