

DOCTORAL (PhD) DISSERTATION BROCHURE

NATIONAL
UNIVERSITY OF PUBLIC SERVICE
Doctoral Council

CAPTAIN EDIT NIKODÉM

*Novel interpretation of the domestic defence of the population and material resources, requirements of
implementation and possible methods*

Author's summary of doctoral (PhD) dissertation and official deliberations

Budapest
2013.

NATIONAL UNIVERSITY OF PUBLIC SERVICE

CAPTAIN EDIT NIKODÉM

Novel interpretation of the domestic defence of the population and material resources, requirements of implementation and possible methods

Author's summary of doctoral (PhD) dissertation and official deliberations

Supervisor:

Maj. Júlia Hornyacsek, Dr. PhD

Budapest
2013.

1. FORMULATING THE SCIENTIFIC PROBLEM

The extraordinary events of the past decades in the world and in our country have focused the attention to the fact, that the forces of nature can cause immense devastation and this makes even the well-developed countries rather vulnerable. The technical and social development, globalization, urbanization, etc. have initiated a series of changes nearly untraceable for everyday people, which have facilitated many aspects of people's life, however, these civilizational processes also carry certain hazards. Situations caused by disasters and other challenges, risks or threats can ruin the life of a family within hours or even minutes and can destroy the achievements of communities created over centuries, they can kill hundreds of thousands or devastate their homes. As a result, safety and protection against threats became more important and a social cause in civilized countries and the support of this cause is the duty of scientists and professionals, the responsibility of politicians and the clear interest of citizens.

2. RESEARCH OBJECTIVES

In this dissertation I aim to:

Examine the development of the protection of the population and material resources, the main stages of its evolution and the relationship between the historical, social, political changes and efforts;

Analyse the context of security, factors acting on security and public security, *determine* the context of the research aspects for disasters, so that it can be implemented for all other challenges, risks, etc.

Conduct primary quantitative research on the factors threatening security and the relationship between their severity, as well as the concrete implementation of public security;

Analyse the key factors influencing the protection of the population and material resources, such as the character, intensity, time course, impact, damage area and the implemented protection system, etc. of disasters, *examine* their interaction and *prove* the future necessity of public security, as well as the important role of disaster management in the planning, organization and implementation of public security.

Present and analyse the classical interpretation of public defence, its forms and methods and propose modern interpretation, methods, tools and forms of modern implementation. I will complement this with the *results of the survey* conducted on the opinion and expectations of the population about relocation, along with *database* of the main data of domestic and international disasters and the applied public defence methods, thereby helping to rethink the defence of population and material resources and the work of practicing professionals.

3. HYPOTHESES

I assumed that today's forms and methods of the defence of population and material resources are the result of an evolution, which was driven by unexpected events, disasters, wars, etc. and these defence forms are closely related to the social, economic, political changes and efforts of the different eras.

I assumed that defence of the population and the material goods, the security and the factors acting on it along with the domestic defence policy efforts show a reaction (interaction) apart from the tight relationship. Furthermore, *I assumed*, that since the dimension of security has expanded in the past decades and it covers not only military security, but beyond this, the fundamental areas also include political, social, environmental and public security, therefore each of these fields have an interaction with the security of the population and material essentials; the organization and quality of this also has an effect on the mentioned fields of security.

I assumed that beside the different classical threatening factors, there are new types of challenges, risks and threats acting on the defence of public and material resource security and these determine the choice of methods, implementation and tools of public safety. I assumed that among these factors, disasters play a major role, along with their impact, characteristics of damage area, not to forget, that with the formation of disaster management, public safety has been fundamentally changed.

I assumed that the classical forms of public security can only be applied in the future, if they adapt to the new challenges and are modernized accordingly. The modernization has to cover the interpretation, aims, tools and methods and the particularities of the defence system, as well as the adaption of possibilities, for each of which I will provide a suggestion.

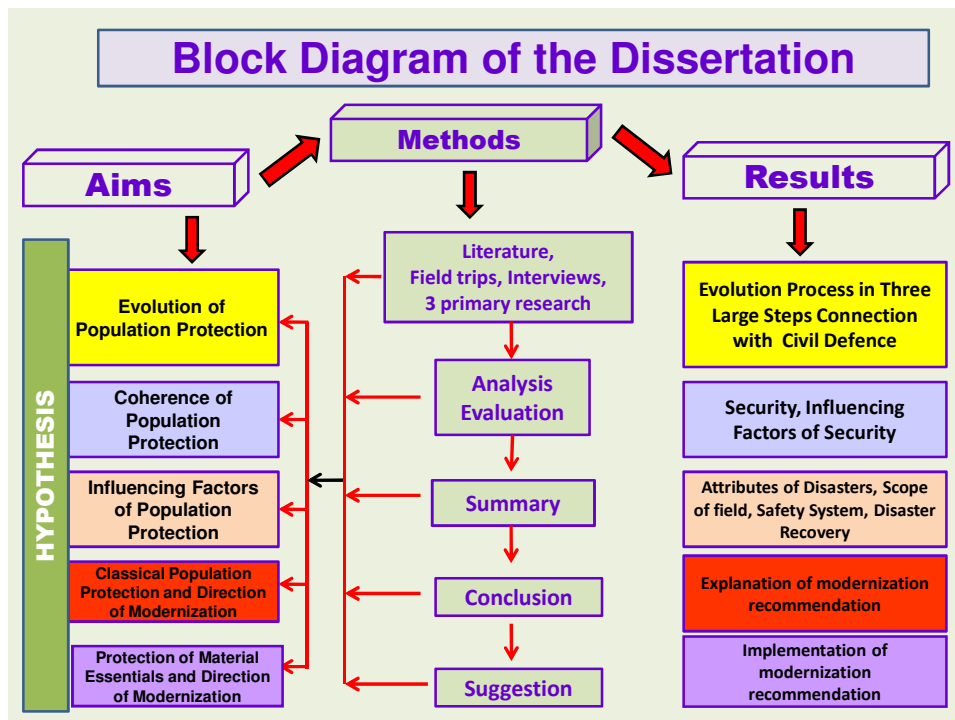
4. RESEARCH METHODS

Throughout the research, I aimed to apply a systematic and scientific approach. To this end, I have prepared a *research plan*, in which, after defining the scientific problem, I formulated hypotheses, laid down the goals, methods, the applied tools, methods of data collection and evaluation, the expected structure of the summary of the thesis of the research and the timetable of execution. For the soundness of the conclusions, they have exclusively been built on the professional and scientific literature and other available sources, as well as my own primary and secondary research results and have been duly verified. To achieve the goal, I have mostly utilized *analysis* and *synthesis*, along with *analogy*, which I complemented with the logical methods of *induction* and *prediction*, where necessary.

For the *data collection*, I followed the principle of “on source is no source”, hence, the data and results have been verified against multiple sources. During the data evaluation, I have complemented the qualitative methods with quantitative methods in three cases. I have studied and analysed the available sources with adequate source criticism. The sources were the following:

- Professional and scientific literature, descriptions and summaries of scientific researches in this field.
- Relevant current legal regulations, applicable law (ex lege).
- Materials of conferences in the relevant field.
- Opinions and interviews of professionals.
- Personal professional experience and data of primary research.

The above mentioned methods and compliance with the rules and requirements of scientific publication has permitted the thesis to be consistent and coherent in point of objectives, methods, research, and the results, which is summarized on the below diagram:



Prepared by: Edit Nikodém

5. BRIEF DESCRIPTION OF THE STUDY BY CHAPTER

In the **first chapter** I have presented the development and implementation of the defence of the population and material goods from the beginning to the present, I examined the main stages of its evolution, the relationship between the social and political efforts of the time and the events influencing the development.

In the **second chapter** I examined the relationships and interactions between security and the factors threatening it, the fields of security and the defence of the population and material resources. I presented my primary quantitative research and its results with respect to disasters and other new challenges, titled "Analysis of impact areas and severity of security threat factors" in this chapter.

In the **third chapter** I examined the factors and characteristics defining the implementation and development of the defence of the population and material goods, during which I narrowed the examined factors down to disasters, so that the logic of the analysis can be followed and employed for other fields as well. I considered the disaster management system as a key factor of the field of implementation, therefore I examined the possible ways how this organizational, task and measure system can contribute to the modernized defence of population and material resource. I presented my primary quantitative research and its results titled "Relations between the characteristics of disasters, tasks to be performed and the chosen public defence methods" in this chapter.

In the **fourth chapter** I analysed the implementation of domestic public safety and *examined and classified* the reasons behind the necessity of the interpretation of modernized public safety and I made *suggestions* to the possible directions of improvements of the basic methods, forms and instruments, based on my investigations and international examples. Here, I have presented the **results of the survey based on my third primary research**, which was conducted among the population about the disturbing factors of relocation and evacuation, their opinion about the various important areas of evacuation, thereby aiding the work of practising professionals.

In the **fifth chapter** I examined the field of implementation of the protection of essential material goods, through which I *analysed the classical forms to search* for the possibilities how it can match the new challenges and expectations. In light of the above, I proposed a novel interpretation of the protection of material resources and the implementation of modern forms, methods and instruments.

6. SUMMARY OF CONCLUSIONS

Examining the development of the defence of the population and material goods, I found, that the need for the protection against threats is as old as mankind, however, its development is a result of a long evolutionary process. *I proved* that in our country, the protection against fires is one of the main fields of public defence, whereas the other area is the protection of the population and material essentials against disasters or in times of war. The forms applied in modern sense have emerged after the First World War and took place in the task system of initially the passive air defence, later civil defence and then disaster management and its development has always been related to the social and political objectives of the time.

I proved that, the millennium was a major stage in the fight against factors threatening the population, when the disaster management system was formed, providing a new framework to protect the population and material resources. The development of an adaptive, modern public safety system, fit to provide answers to the new defence policy challenges was only possible with the formation of the unified disaster management.

Based on my analyses, I proved that, all areas of safety are related and are in interaction with the defence of population and material essentials. *I found that*, the defence policy goals of Hungary are formulated in the security strategy, which records our core values, interests, our relation to the other countries of the world and to peace, as well as the instruments guaranteeing our security; among them, a major factor is the defence of population and the material goods.

I proved, that in favour of the effectivity, the defence of the population and material essentials needs to adapt to the new safety environment in terms of methods, instruments and implementation, to the historical defence system, the capacity of the country, the needs of the population and should be modern.

By examining the defence of the population and material goods through disasters, I have found, that its form and method greatly depends on the origin, characteristics, extent, and nature, spatial and temporal aspects of the disaster. *I proved*, that factors affecting the defence are the available time, topography of the land, populousness of the concerned area, population, coverage of the area, quantity and quality of the available instruments, conditions of the damage area and last, but not least, the legal status, in which the task has to be accomplished.

I have *examined* the impact area of disasters and other challenges, the relations with population safety and the expectations of the population in case of evacuation with 3 primary quantitative researches and made *suggestions* on their realization.

Examining the unified disaster management system of Hungary from the perspective of population security, *I have found*, that both in terms of organization, task system and management system, it is capable of providing modern defence for the population and material resources. Its design, organization of operation is on an appropriate level, the tasks and its strategy is well defined and covers the range of tasks aiming the defence of the population and material essentials.

By examining the classical methods of public security, I found, that there will be two main fields in the future as well, the individual and collective defence. I *presented* the classical forms of individual and collective defence of our time, the local and long distance defence and the methods and instruments of their implementation. Using disaster and other hazards analysis, I *found* that evacuation and isolation methods came to the front in these days, and that shelters may still be required and I *recommended* modern methods based on adoptable foreign examples.

I ***proved***, that it is necessary to rethink the interpretation and the classical forms of modern public safety, as such social, economic and political changes happened, which brought about the transformation of the whole defence system and the defence administration reform, the change of implementation framework, etc., furthermore new threatening factors appeared, which call for a different public security compared to the former one.

I ***proposed*** three fields for consideration for the modernization of public security, which are the following: interpretation, instruments and methods, as well as areas of implementation. I consider the modernization to take into account the factors analysed in the previous chapters, as well as the state of the historically developed defence, its defence potential and the strategies and aims related to public defence.

I ***found***, that in modern public safety, the classical methods are complemented by the preparation, alarming and information of the population, since these fundamentally influence the efficiency of the defence. The implementation of public safety is a complex system of tasks, which includes the earlier classical “rescue” public safety areas, as well as tasks without which the “rescue” public safety could not be achieved and this gives the complexity of public defence.

I ***proved***, that the modern public safety will not only take professionalism to account, but also the physical and psychical state of the evacuated population and the expectations, which – of course within reason – formulate in them in the given situation. It will also take into account those – generally easily resolvable – problems, which might worsen the comfort of the evacuated population, which is already worn by the difficulties of the situation and aims to eliminate them. To assist this, I summed up the results of the primary research survey conducted among the population in this field and made recommendations.

During my research, I found that the material goods essential to sustain life are always integral parts of the defence of the population. Without these, defence is not efficient and the normalization of the situation is impossible. The protection of material goods serves the purpose to maintain the essential material resources necessary to sustain life in an event of future disasters, wars or other threatening factors. I proved, that a unified legal act summarizing the above does not exist, but this should cover the protection of materials, instruments, systems and resources required to provide the basic care and living conditions of the population, especially drinking water, food, forage, medical supplies and the protection of livestock.

I ***proved*** that the protection of material goods in our time is to guarantee the safety of establishments, public utilities, resources and valuables required to maintain the means of sustenance and operability of the state. Furthermore, it is not possible to accomplish the related tasks (preventive defence, rescue defence and follow-up defence) without determining them, as well as developing unified principles and framework.

I ***found***, that the modernity of the protection of material goods lies in the ability to be flexible enough, to provide the necessary and adequate defence level, to provide enough resource, which can ensure the operability of the state in the event of a severe situation and the basic services for the citizens to ensure living conditions. I believe that another important criterion is economy and the adaptation to the capacity of the country. I proposed modern tools for this problem as well.

7. NEW SCIENTIFIC RESULTS

1. Based on my research, I was first to **prove**, that there is a strong correlation (interaction) between the fields of security, impact area of the factors threatening security, the types of effects, their severity and the protection of the population and material essentials. I **proved** that the efficiency of the protection of the population and the material goods greatly depends on the choice of the defence methods, therefore it is necessary and reasonable to determine the modern public defence based on today's challenges and the definition of the principles and methods of modern defence.
2. I **proposed** a possible novel interpretation of the areas and methods of the country's public defence and the directions of development and solutions, furthermore, I **pointed out** the critical points of the viability of execution and the possible priorities of the tasks *based on the primary quantitative survey conducted among the population*.
3. By **analysing** the activities, methods and forms aiming the protection of today's essential material goods, I **proved** the necessity of rethinking this area. I **proposed** a novel interpretation, directions for development and requirements of viability.
4. **I have prepared a long-needed disaster database** of the characteristic data and the applied public defence methods of 100 domestic and 100 international disasters, furthermore I was the **first to expansively summarize** the history of public defence and I **proved**, that their aims have always correlated with the economic, social and political efforts of the time.

8. PRACTICAL APPLICATION OF RESULTS

The dissertation in my opinion is well suited to determine the security and defence policy tasks and their priorities among the decision-makers of the defence domain, to modernize the principles and the framework of the protection of the population and material goods. The prepared disaster database may help in conducting further researches in this field, as well as the data collection of professionals, who wish to indulge in the protection of the population. Due to the system-based approach, the dissertation might be suitable to assist the preparation of students learning in the fields of defence or civil service, in addition, to help the professional preparation of civil defence and defence administration leaders.

9. RECOMMENDATIONS

The scope of the dissertation and the research objectives did not allow the exploration of some areas, therefore I will propose further topics for investigation:

- mass supply of the population with protective devices, its necessity and the obstructing factors;
- choice of modern, state of the art devices, applicable in domestic circumstances, the principles and priorities of establishing a basic supply;
- adaptation of well-tried methods of public protection used abroad;
- methods of evacuation and isolation in the different regions;
- the preparation of the population for this knowledge in view of the new laws and regulations;
- possibilities of centralized control of the protection of material resources and the methodology of its realization.

10. CATALOGUE OF PUBLICATIONS BY THE DOCTORAND IN THE FIELD

Articles published in peer-reviewed journals

1. Nikodém Edit: Felhasználható egy adott ország atomerőműve nukleáris terrortámadás eszközeként, célpontjaként? Hadmérnök Vol. VIII. Issue1., 2013. March, 129-139. p. ISSN 1788-1919
2. Nikodém Edit: A Nemzeti Biztonsági Stratégia szükségessége Magyarország védelempolitikájában. Budapest, 2013., Hadtudományi Szemle Vol. 6. Issue1., 32-40. p. ISSN 2060-0437
3. Nikodém Edit: A lakosságvédelem megvalósulása és eszközrendszere hazánkban. Hadmérnök Vol. VIII. Issue2., 2013. June, 269-282. p. ISSN 1788-1919
4. Nikodém Edit: A veszélyes anyagok által okozott katasztrófák mentesítési lehetőségei. Budapest, 2013., Hadtudományi Szemle Vol. 6. Issue2., 168-179. p. ISSN 2060-0437
5. Nikodém Edit: Óvóhelyek szerepe, funkciója és jelentősége napjainkban. Műszaki Katonai Közlöny, 2013. July, 2. Special edition, 238-252. p. ISSN 2063-4986
6. Nikodém Edit: Korszerű egyéni védőeszközök a lakosságvédelem szolgálatában. Védelem Online, 2013. August 02.
7. Nikodém Edit: A radioaktív hulladékok kezelése, tárolása és környezetbiztonsági aspektusai. Védelem Online, 2013. September 04.
8. Nikodém Edit: Az anyagi javak megóvásának szerepe és hangsúlyossága a lakosságvédelemben. Hadmérnök Vol. VIII. Issue3., 2013. October, 141-150. p. ISSN 1788-1919

Articles in foreign language publications

1. Nikodém Edit: The importance and necessity of the National Security Strategy in Hungary. Budapest, 2013. Befogadó nyilatkozat kiadva. Felderítő Szemle Vol. XI., HU ISSN 1588-242X
2. Nikodém Edit: The methods of public defence warning and information and its technical and personal execution. Budapest, 2013. Hadtudományi Szemle Vol. 6. Issue 3. 154-166. p. ISSN 2060-0437

Internet publications - not peer-reviewed

1. Nikodém Edit: A korszerű légzés- és bőrvédő eszközök fejlődése napjainkig. <http://online-publikaciok.webnode.hu/publikaciok2/Date: 10. 09. 2013>.
2. Nikodém Edit: Veszélyes anyagok szállításának Európai szabályozása. <http://internetes-publikaciok.webnode.hu/Date: 10. 09. 2013>.
3. Nikodém Edit: A püspökszilágyi RHFT működésének bemutatása. <http://online-publikaciok.webnode.hu/publikaciok2/Date: 10. 09. 2013>.
4. Nikodém Edit: A tömegpusztító fegyverek nemzetközi elterjedésének megakadályozása. www.publikaciok.fw.hu Date: 10. 09. 2013.

11. SCIENTIFIC BIOGRAPHY OF THE DOCTORAND

Studies

Zrinyi Miklós National Defence University
Graduate School of Military Engineering - Environmental safety and disaster management
Zrinyi Miklós National Defence University
Local government protection administration
Szent István University - Faculty of Mechanical Engineering
Engineering postgraduate course
Szent István University - Faculty of Mechanical Engineering
Communications engineer

Language skills

Intermediate German
Basic English

Other skills

Internal Auditor certificate;
Quality Management System Manager Certificate;

Professional experience

2006 –	Special Service for National Security
2002 – 2005	“MÉSZ” Műszaki – Építőipari Kereskedelmi és Szolgáltató Kft. Quality Manager / Sub Assembly Manager
1999 – 2002	Zollner Elektronik Vác Gyártó és Szolgáltató Kft. Fixed Asset Controller –project manager
1997 – 1999	Elektronikai és Mechanikai Termelő, Szolgáltató és Kereskedelmi Kft. Participation in certain manufacturing processes of PCB and performing quality checks.

Budapest, 11th October, 2013.

Signature