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Review Article

Disaster Risk Reduction and Disaster Risk Management: State of Play in North Macedonia

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Abstract

This paper explores the state of disaster risk reduction (DRR) and disaster risk management (DRM) in North Macedonia, highlighting their theoretical, normative, and institutional aspects. It examines the complex processes of crisis management, risk management, and DRR systems in the country, focusing on their alignment with international frameworks like the Sendai Framework for Disaster Risk Reduction. Key indicators for crisis identification and risk reduction are analyzed, along with the integration of national mechanisms into global and regional disaster risk platforms. The study emphasizes the challenges faced by the DRR system, including inefficiencies, coordination gaps, and resource constraints, and proposes strategic recommendations for improving preparedness, response, and recovery. The findings underscore the critical need for strengthening institutional capacity and enhancing interagency collaboration to build a resilient society capable of addressing the multifaceted risks of natural and anthropogenic disasters.

Keywords

Risk; management; reduction; crisis; disaster; North Macedonia.

1. Introduction

In a historical sense, it can hardly be said that there were societies that did not directly or indirectly face natural disasters. As a serious threat to human survival, natural disasters have long been perceived as «God's message» that was addressed to people for various reasons. For example, with the spread of Christianity around 2000 AD, natural disasters were believed to be special messages sent directly from God to punish sinners (Ivanov & Cvetkoviќ, 2016:6).

Risks, crises and security are not new problems and they will not be completely solvable in the future. Now the risks are not so much «related to God» but more related to human activities, human errors, irrationality, cultural misunderstandings, systemic flaws and omissions, or are they just a homeostatic need to maintain the level of risk in our lives? Even if we tried and succeeded in combining all these theories we still could not manage risk successfully (Borodzicz, 2005, p.152). Borodzicz compares risk management to weather forecasting, particularly, he says, in northwestern Europe.

There is undoubtedly a link between the economic, the social and the vulnerabilities resulting from environmental risks. It does not need to be proven at the level of a general assumption. When we talk about disaster risk reduction, we are talking about a global and systematic approach, in which the following are of critical importance:

- *The First International Conference on Disaster Risk Reduction in Hyogo* in 1994. from which derives the International Strategy for Disaster Risk Reduction;
- *The second international conference from Hyogo*, from which emerged the Global Platform for Disaster Risk Reduction in 2006; and
- *The Third Sendai World Conference on Disaster Risk Reduction*, 2015, from which the Sendai Framework for Disaster Risk Reduction emerged.

The 2017 Global Forum in Mexico confirmed the interdependence and connection between 1. Disaster Risk Reduction; 2. Achieving the goals for sustainable development; 3. The Paris Agreement on climate change; and 4. The new urban agenda (Ivanov, Babanoski, & Cvetkovik, 2023).

In North Macedonia, the first National Platform for Disaster Risk Reduction since 2009. is the result of the implementation of the Global Framework adopted in Hyogo. Namely, it is a global strategic action plan that was adopted with the support of 168 countries. It is also fully compliant with the Millennium Development Goals laid down at the 2002 Johannesburg summit. The establishment of this platform represented the operationalization of the normative assumptions of the Law on Crisis Management and the Law on Protection and Rescue (Figure 1). In an international context, disaster risk reduction is hierarchically organized as shown in the graphic below:

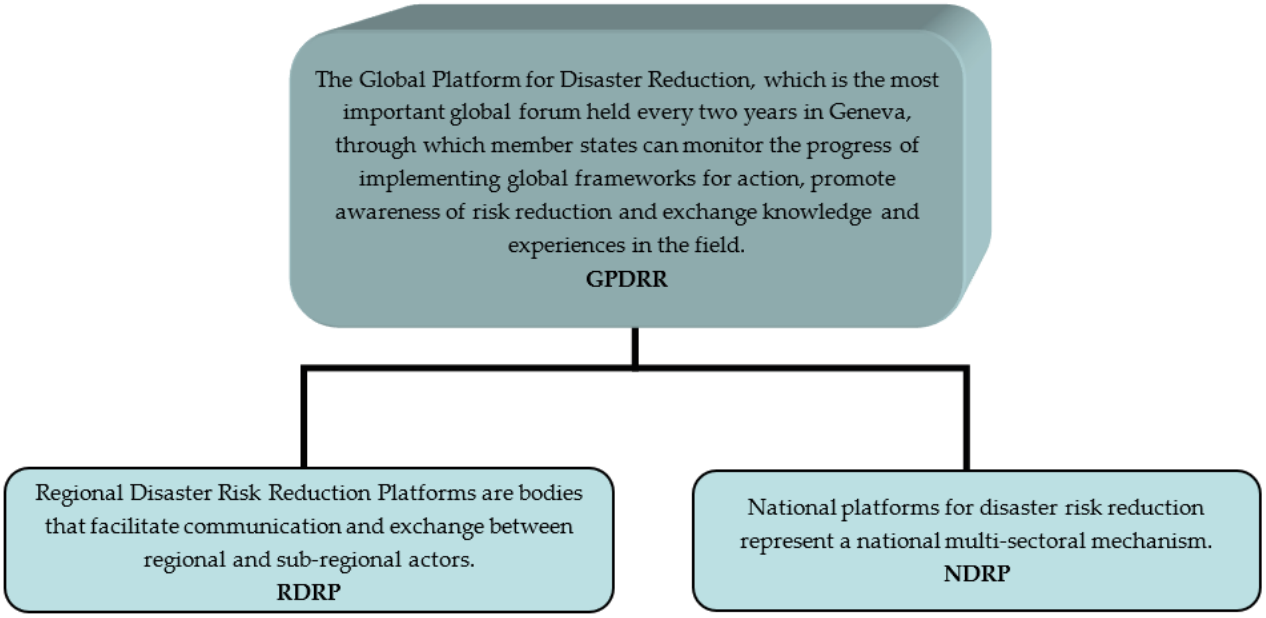

Figure 1. Disaster Risk Reduction Organization

2. Crisis management: theoretical fundamentals

Crisis can be defined as the separation/distinction of the structure/form between an emergency and a disaster. A risk can cause a crisis, which as a result can turn into a disaster. (Cvetković, 2024a, 2024b; Cvetković, Nikolić, & Lukić, 2024; Cvetković & Šišović, 2024; Cvetković & Šišović, 2024a, 2024b). The concept of crisis is relatively unexplored, although the analysis of human behaviour (the so-called human factor) in anticipation and resolution of a crisis is now receiving considerable attention from the academic community (Borodzicz, 2005, p. 74). In a theoretical sense, disaster management entails much of what is meant by crisis management. Disaster management is largely concerned with the practical problems of emergency planning, «picking up the pieces» when the unwanted and unexpected has happened. Such theoretical «apostrophes» are useful in discussing the deployment of crisis management and protection and rescue systems (Cvetković, 2023; Cvetk-

ović, Čvorović, & Beriša, 2023; Cvetković et al., 2022; Cvetković & Planić, 2022; Cvetković, Tanasić, et al., 2023; Janković et al., 2023).

In terms of security, the crisis gained a new significance at the global level in the context of terrorism and the attack on the USA in 2001. For the Macedonian state, the crisis in 2001 had such significance, both in terms of conceptualization and in terms of institutionalization and the implementation of security strategies and plans. The term crisis is today a subject of mass use. The simplest definition is that it is a large and unfavourable event that occurs suddenly and has negative results. But Postolov emphasizes in this part that although it is an event that occurs suddenly, it is an event that can be predicted to a certain degree (Postolov, 2011, p. 295). When we talk about a crisis, we are talking about a situation that is characterized by endangering values, goals, and resources, we are talking about an immediate or indirect danger to a certain system (state, municipality, economic entity, etc.). For the crisis, both variables are tied together: 1) The existence of danger; and 2) Time pressure to resolve the same.

On the other hand, crises may and may not have specific symptoms. For example, we cannot predict a crisis caused by an earthquake (this does not mean that we cannot take preventive actions). But a crisis caused by armed criminal groups, not only we can, I would say, we must foresee the literature talks about symptoms of crises. We can also name them as indicators or metrics. Theorists and practitioners agree that: «crisis management and dealing with risks and hazards are essentially different things.» Economic science differentiates two types of crisis management:

1) First, active crisis management that can be:
    a. Anticipatory which:
        i. It covers the activities for thoughtful preparation of countermeasures using specific scenarios in the form of alternative plans to obtain in time in the event of a crisis (standard operating procedures are a reflection of this system).
ii. It has a preventive character: and
iii. c. Which can, based on specific early warning information, plan, implement and control preventive strategies to avoid a latent state of crisis (many similarities can be observed, i.e. there is an explanation of what the Crisis Management Law calls the System for early warning); and

2) Reactive which:
    a. Is repulsive;
        i. It is applied under the conditions of the crisis that has already occurred and the attitude of the management that it can be overcome.
        ii. It is liquidation in nature:
        iii. And it represents a form of crisis management according to which there is no chance to get out of the crisis.

Active crisis management includes activities that take into account the problem before it happens, thus minimizing the likelihood of surprise. Reactive crisis management includes activities that quickly and efficiently respond to sudden discontinuities in the functioning of the organization (Postolov, 2011, p. 310).

Latent crises, according to Postolov, can be recognized in time with active crisis management, which is the basis of the early warning system, which we should mention is the legal definition of the crisis management system. So this system has the task of identifying risks and dangers for them by providing information on:

- Timely notification of the users of the information about the occurrence of crises; and
- Getting time for an appropriate reaction from the «users», in the case - the Steering Committee.

The basis for the existence of the early warning system is the continuous and complete collection of all data, and their assessment, no matter how insignificant they seem at the moment. The information is subject to assessment according to several criteria, such as the intensity, ie how often it occurs, the significance in relation to the defined goals of the organization, the time of occurrence and the possibility of a reaction.

Reactive crisis management, as we have seen above, can be both manageable and unmanageable. He answers the questions of what steps are taken during the crisis and how to return the situation to its original state. This process consists of a rough and detailed analysis of the situation, determination of goals and strategy of management and application of concrete measures to deal with it.

The reason why this section is located at the head of this study entitled «risks» is to consider that crisis management is part of the overall reduction of disaster risks that can be caused by all the listed activities, while the management system with crises with the Center as its bearer (the Steering Committee and the Assessment Group) is largely related to the established risks and dangers which, in turn, are fully related to the risks and dangers that have the potential to cause disasters.

3. Risk management in North Macedonia

The basic ways to deal with natural disasters are assessment of the risk and the consequences of preventive and normative taking of the established measures, namely: planning, organizing, training and preparation of the reaction resources; reaction (organized provision of protection and rescue assistance after the occurrence of the disaster); and rehabilitation (recovery and reconstruction after the end of the disaster) (Toth, Čemerin & Vitas, 2011:167). It is safe to say that management is one of the most complex human activities that is aimed at managing it, i.e. establishing a normal or usual situation in the community (society) as quickly as possible (Ogorec, 2010; Cvetković, 2014; Cvetković & Petrović, 2015).

Mitigating the consequences of natural disasters consists of the effort/action aimed at minimizing the degree of risk, preventing the disaster and reducing the vulnerability of the ecological and social system, that is, the community (Alexander, 1993:52). This refers to activities designed to reduce or eliminate risks to the population, their property and the environment, as well as to reduce the consequences of natural disasters (Ivanov & Cvetkovic, 2016).

Most often, risks are divided into: 1) natural risks; and 2. human risks.

Risks from nature (biogenic):

⇒ *Terrestrial (planetary), including the risks of occurrence of various elementary (so-called natural) disasters (earthquakes, volcanic eruptions, destructive winds, floods, droughts, microclimatic disturbances, etc.);*

⇒ *Extraterrestrial (extra-planetary), which include the risks of planetary disasters caused by extra-planetary influences and processes (collision of celestial bodies with the Earth: asteroids, meteors, comets, etc.; cosmic nuclear explosions and explosions of stars-supernovae; changes in the structure of our solar system and our galaxy - the Milky Way; possible threats from other forms of life, civilizations and technologies in the form of attacks, invasions, intrusions, etc.. i.e. risks from so-called UFO (UFO) phenomena and threats); and*

Human/Man-made (anthropogenic) risks:

⇒ Risks from society, which include social estrangement - alienation; social disorganization – anomie; social anxiety - anxietization;

⇒ The malfunctioning of social systems: legal, economic, political, etc.; inappropriate and undeveloped multicultural and intercultural interaction and communication in multicultural and intercultural societies etc.;

⇒ Risks of a technical-technological nature, which include the production of genetically modified food (GMF), plants and animals; cloning; production of chemical, biological and nuclear weapons of mass destruction (WMD); inadequate management of large technical-technological systems that can cause large technical-technological breakdowns and disasters: nuclear and chemical factories, oil platforms, refineries, ferrous and non-ferrous metallurgy plants, large

information systems; inadequately regulated and unsafe traffic and transportation of raw materials, materials, dangerous substances: explosive and easily flammable substances; environmental pollution and externalities, etc. (Герасимовски, 2010, pp. 128-129)

Managing risks as well as assessing them are two parts of a process known as risk analysis. A complex scientific process involving various disciplines (eg physics, chemistry, toxicology, law, economics, sociology, political science and engineering) and inter-disciplinary disciplines (ecology and environmental sciences) and dealing with the complicated technical, life-related environment, economic and social problems where the dangers may threaten the population or the eco-systems (Ganoulis & Simpson, 2006, стр. 245)

On this occasion, we would state the basic assumptions of risk management, on which the security dilemmas related to disaster risk reduction are based. First, we need to assume anticipation (prediction) of the risks, their true structure, the most likely moment of their occurrence and the extent of possible effects if they occur. When we talk about risks, we are mostly talking about dealing with risks, mostly as a result of the risky character of today's society and the risk culture. Namely, dealing with risks implies choosing and applying the most appropriate response, determining and applying the reaction method and monitoring the course of dealing with performance feedback; in the broader sense of the word, where the management consists of five stages: 1) Detection of risks; 2) Their understanding; 3) Assessment; 4) Prognosis; and 5) Coping in the narrower sense of the word (Gerasimovski, 2010, p. 248). And this approach seems to correspond to reality. Especially if we consider that man cannot predict and has many organic means to prevent risks, especially not those related to environmental changes that have the epithet of risk or accident. In this sense, the activities of the United Nations, which declared the last decade of the 20th century as the «International Decade for Natural Disaster Reduction», continued with the declaration of the International Strategy for Disaster Reduction – ISD) have established the doctrine that natural disasters, by themselves, do not lead to disasters, but that disasters are the result of the impact of natural disasters on vulnerable social systems. In other words, disasters can be prevented through deliberate human action aimed at reducing vulnerability (Lazarevski, Ѓorgon, & Taleski, 2010, pp. 10-17).

Reducing the risks in key sectors, as well as strengthening the readiness to respond, are some of the basic prerequisites for realizing a higher level of risk management. They are determined as priorities at the international and national level. The environment, natural resources and their management are undoubtedly one of the key elements in this sense.

In the part of the sources of threats in the Republic of North Macedonia, the Decree on the methodology for the preparation of the assessment of the threat to security as indicators for risk assessment establishes (Table 1):

Table 1. Thematic Division of Territorial Characteristics and Risk Elements.

Thematically divided
⚜ **Geographical characteristics:**
Geographical position and size, relief features, forest cover and other vegetation cover, basic characteristics of the land, climatic conditions, hydrographic network, type and amount of atmospheric and other waters;
◎ Organization and use:
Socio-economic characteristics, natural resources, population and organization of settlements and activities, communication network, traffic and connections, environment and natural resources, cultural and historical heritage, road network, and other infrastructure;
◎ Populated places
Names, size and boundaries of each city and larger settlements, urban and rural structure of settlements, demographic profile;

⚜ **Economic profile**
Economic development, present industry and other production facilities (by cities and settlements), industry with hazardous material (with determination of the potential for endangerment);
⚜ **General characteristics of development**
The current purpose of the land and development characteristics, development goals for the territory (spatial plan for the Republic, General/detailed urban plan of the municipalities;) and
⚜ **Summary and detailed description of the represented risk elements according to the nomenclature of the unique methodology for damage assessment from natural (natural) disasters.**

When we talk about the manifestations of risks and dangers, we are talking about a moderate generalization of illegal behaviours, and natural or man-made accidents in the broadest sense of the word. In the following lines, we will try to present the manifestations that represent a security risk and danger that can have a wider scale and its impact is not limited to isolated case/s. These activities, if they meet a certain degree of endangerment, can cause a crisis and ultimately lead to disasters (Table 2).

Table 2. Risks in North Macedonia.

1)	Nationalism, religious intolerance and hatred, forms and activities related to international terrorism, organized crime, illegal trafficking in drugs, weapons and people, possession of large quantities of illegal weapons, corruption, urban terrorism, serious crime, including blackmail, murder and attacks on citizens and of their ownership and consequences of the means of mass destruction;
2)	Activities of foreign special services and other activities aimed at worsening the security situation;
a.	Incidents at the border;
b.	Airspace Violations;
c.	Terrorist activities, diversions and sabotages;
d.	Demonstrations, strikes and large-scale riots that threaten public order and peace;
e.	Unauthorized disclosure, publication and violation of the security of information and communications;
3)	Consequences of a conflict of interests for using the sources and routes of strategic energies, as well as hindering and blocking their import into the Republic of Macedonia;
4)	Natural and other disasters;
a.	Floods;
b.	Landslides and major landslips;
c.	Intense snowfall, snowdrifts and avalanches and freezing phenomena of river courses and lakes;
d.	Other natural disasters (lightning strikes, strong winds, thick fogs, extremely low or high temperatures, heavy rains, droughts, hail, hail and others;
e.	Large-scale fires;
5)	Technical-technological disasters;
a.	Explosions;
b.	Disasters in mines or production facilities;
c.	Cracks, collapses and other damage to dams threaten the population and material goods;
d.	Radiological, chemical or biological contamination and pollution of air, watercourses and the human environment;
e.	Accidents and major defects;
f.	Traffic accidents in road, rail, water and air traffic;
g.	Mass poisoning with food, chemicals or poisonous substances;
6)	Epidemics of quarantine and other infectious diseases in humans, animals and plants;
a.	Outbreaks of infectious diseases in humans (epidemics)
b.	Outbreaks of infectious diseases in animals (epizootics);
c.	Occurrence of infectious diseases in plants (epiphytes);
7)	Large-scale degradation and destruction of the environment; (safety relevant to the environment)

8)	Disturbance of regular conditions in the communal sphere, traffic and problems in the supply of food and material goods (interruptions in water supply, electricity supply, heating network, gasification network, telecommunications network, traffic diversions, the situation at border crossings, the situation with blood and blood products and other health conditions; and
9)	Finding unexploded ordnance left behind. (The decree on the type of data and information and the method and procedure of their delivery to the Crisis Management Center, 2007, p. article 3 – 12)

4. Disaster risk reduction system in North Macedonia: overview and challenges

The security systems of countries around the world are facing numerous threats. (Chakma, 2023; Cvetković & Planić, 2022; Cvetković, Romanić, & Beriša, 2023; El-Mougher, 2022; Iftikhar & Iqbal, 2023; Islam, 2023; Kabir, Hossain, & Haque, 2022; Kabir, Tanvir, & Haque, 2022; Molnár, 2024; Odero & Mahiri, 2022; Port & Jawahar, 2024; Sergey & Gennadiy, 2022; Starosta, 2023; Sudar, Cvetković, & Ivanov, 2024). Those threats can have a different nature, come from different sources, manifest differently and ultimately have the potential to harm people's usual behaviour and living. In the most general sense, security systems in the world are tasked with dealing with three (in the broadest sense of the term) groups of threats. The first is a traditional threat in the form of the use of organized violence aimed at threatening the territorial integrity and sovereignty of states. The second is related to preventing and dealing with internal security threats (crime, which can be at the national and international level, further, disruption of public order and peace, terrorism, illegal trade and smuggling, etc.). *The third type is the subsystem that is to the greatest extent our subject of interest, and it refers to the prevention, handling and management of natural and other disasters, technical-technological disasters (industrial, electrical, chemical, nuclear, telecommunication, information systems and as well as other large systems), epidemics and other infectious diseases, as well as for larger-scale degradations and destruction of the environment.*

If we imagine that the state is conditionally based on, among other important elements, the following pillars: 1. *Social regulation* (implies the normative activity of the highest sovereign authority in the political arrangement in the state, with which it frames and regulates social relations); 2. *Institutional architecture* (the political authority needs the operationalization of its policies, primarily intended for the application of social regulation in the everyday life of people, with the right to apply and the power it has at its disposal on monopolistic grounds) - then it is necessary to assert that from an organizational point of view, the institutional setting of the administrative system of the state is especially important, both for all state activities and for the realization of the function of security. Given that the state has equal goals, then its «apparatus» must act in harmony, synchronized with one will and aiming to achieve the same goal. This is not only an obligation, but more importantly, it is a prerequisite for the successful provision of the regulatory cycle of standardized behaviours that characterize societies.

Otherwise, systems (theoretically, in the social-organizational sense) as a complex set of elements, entities, and processes assume the existence of rules, competent entities, further establishment, implementation, control, evaluation, improvement of processes, etc. In the area of disaster risk reduction, we are talking about very numerous, differentiated threats, risks and threats of a different nature (listed in the previous part of this study), where the National Platform recognizes the importance of building a complex institutional mechanism that can respond of the different nature and degree of the threats and risks. Integrating the reduction of disaster risks in the direction of achieving security in North Macedonia is primarily the task of the Crisis Management Center and the Protection and Rescue Directorate. These institutions at the central level are most appealed to organize within the framework of its legal powers, activities that contribute to the reduction of the risks of disasters. In this sense, it is necessary for the state to continuously apply the policies and activities at all levels with the institutional tools, in this context to manage and reduce the risks and threats that ultimately can cause disasters.

In the text, we try to emphasize that the integral approach to the management of social processes is crucial for the organization of a society. When it comes to this kind of organization (creating a

resilient society that manages risks) it is a challenge of the most complex nature. The system of risk management and disaster reduction has been in a period of evolution during the past almost two decades. We can say that the concrete form it has now originates from 2005 together with the overall reform of the public administration, that is, the state administration and the process of synchronizing the security system in compatibility with that of the NATO member states.

The national platform for disaster risk reduction has four editions, the last of which is the one adopted by the Government of the Republic of North Macedonia in 2019. Of course, this platform is based on the priorities established in Sendai, namely: prevention, early warning, risk management and recovery.

The national platform for disaster risk reduction is a sublimation of the priorities, expectations and obligations that function for building an effective and efficient system for protection and rescue. (Aleksandrina, Budiarti, Yu, Pasha, & Shaw, 2019; Carla S, 2019; MacAskill, 2019; Mano, A, & Rapaport, 2019; Perić & Cvetkovic, 2019; Sudar et al., 2024; Vibhas, Bismark, Ruiyi, Anwaar, & Rajib, 2019). It is based on obligations arising from the Constitution of the Republic of North Macedonia, the National Concept for Security and Defense, the National Strategy for Protection and Rescue, the Law on Crisis Management, the Law on Protection and Rescue, the Law on Police, the Law on Defense, the Methodology for the content and method of hazard assessment and protection and rescue planning and other analyses, assessments, scientific papers, etc. The laws also define specific obligations of state institutions, public enterprises, companies, citizens and other subjects of the crisis system, especially the President of the Republic of North Macedonia, the Parliament of the Republic of North Macedonia, the Government of the Republic of North Macedonia, the Center for Crisis Management, the Protection and Rescue Directorate, the Ministry of Internal Affairs, the Ministry of Defense, the Ministry of Health, the Army of the Republic of North Macedonia and other subjects of the crisis system. As indicated, the priorities are also drawn from international strategies and frameworks adopted by the UN such as the Hyogo Framework for Action and the Sendai Framework for Action. In the platform, the global and regional context is naturally further developed at the national level and is increasingly focused on the local level. The main objective of this strategic document is to reduce the loss of human lives, the destruction of goods and the social and economic damage caused by natural disasters, such as earthquakes, strong winds, floods, landslides, forest fires, pest infestations, droughts and other natural disasters.

The national systems for risk management and protection and rescue are the two systems that should complement the process of disaster risk reduction. Currently, the National Platform for Disaster Risk Reduction is coordinated by a National Coordinator appointed by the Government of the Republic of North Macedonia. Almost two decades have passed since the operationalization of the two systems, during which both systems were «challenged» in terms of their functionality on several occasions, which can be singled out: the massive occurrences of forest fires on several occasions; the migrant crisis; river and urban flooding; crises caused by epidemics and the global COVID pandemic, heat waves in the last few years, the current energy crisis, and other natural and man-made events. Through dealing with these crises, both systems have shown certain weaknesses, which have affected their efficiency, effectiveness and full operation. So, in practice, it has been shown that measures and activities were not implemented to mitigate the previously foreseen risks, and for those new risks and threats that are currently appearing, the systems react very slowly. Furthermore, it was shown that there is no sufficient and established coordination between the institutions involved in the field, for easier and faster execution of tasks. Insufficient material and technical resources for work, and insufficient expertise to respond to risks and threats affect the provision of a quick and effective response on the ground and return the situation to the original state, or close to it, if possible.

From a strategic point of view, it is necessary to strengthen and consistently implement the priorities established by the Sendai framework:

- Understanding risks in all dimensions of vulnerability, capacity, exposure, hazard characteristics and the environment;
- Strengthening risk management: risk management must be implemented at all levels starting from local, regional, and global because as societies we are interdependent;

- Investing in reducing risks and building resilience: strengthening the economic, social, health and cultural resilience of people, communities and the environment as a whole;
- Improving preparedness and strengthening effective response in recovery, rehabilitation and reconstruction: destructive events can significantly or completely disrupt life, hence response and reconstruction preparedness is critical to restoring the previous state, if possible (Ivanov et al., 2023).

The overall organization of the government participates in the system at the general level by the Constitution of the Republic of Macedonia from 1991. In the most general terms, the legislative authority (competence for enacting Laws, Strategic Acts, National Plans and Assessments, etc.), the executive authority through the Government and the President of the Republic of Macedonia (state administration bodies: Ministry of Interior, Ministry of Foreign Affairs, MFA, all ministries, independent bodies of state administration such as the Intelligence Agency, the National Security Agency) and the judiciary (which exercises the function of determining responsibility for violations of the rules of the legal order).

Hence, when we talk about the reduction of disaster risks as an organization, we also talk about the complete organization of the government according to the constitutional order. It can be said with certainty that the placement of these organs based on mutual dependence, cooperation, complementarity and control conditions all these actors to function as a system, with all the theoretical assumptions of the system theory.

The personal and institutional structure of the political party in the broadest sense of the word is manifested at the level of representative bodies of the citizens, namely:

- Assembly of the Republic of Macedonia;
- Government of the Republic of Macedonia;
- Executive officials who are elected according to political criteria by the Assembly and the Government of the Republic of Macedonia (for example, ministers, state secretaries, directors of independent bodies of state administration and bodies in composition);
- And the representatives of the local self-government, above all the mayor, the Council, as well as managers within the municipalities;
- The executive part of the personnel structure in the Republic is manifested through the employees of the following institutions:
- Ministries (especially the Ministry of Interior and the Ministry of Defense have competence in the area of security, but we cannot avoid other ministries, especially in the context of the paradigm of multidimensionality of security, for example, the Ministry of Finance also has a role within to organizations that take care of security in terms of ensuring the security of financial transactions, the source of finance, prevention of money laundering, financing of prohibited activities, etc.); In the part of what is the interest of this paper, the Ministry of the Environment, the Ministry of Economy and other ministries (of course the Ministry of the Environment and Spatial Planning mostly) have a key role, both in the protection and in providing the overall philosophy of sustainable development;
- Other bodies of the state administration (Directorate for Protection and Rescue, Center for Crisis Management) which have a significant specialized role in certain departments of work, which also have a significant role in ensuring synchronized operation of the system (for example, the significant coordinating role that the Center for crisis management there is);
- Local self-government (mayor, council, municipal administration). The process of decentralization applies to almost all domains of social life (health, social protection, environmental protection, fire protection, education, etc.) and hence the functioning is subject to decentralization (for example Local risk assessments), also the municipalities have a key role in what is a narrower subject of interest in this text, which is crisis management, protection and rescue in the function of disaster risk reduction.

For North Macedonia at every level, especially for the preparation of strategic acts, here we would mention the threat assessments of the Center for Crisis Management, i.e. the Directorate for Protec-

tion and Rescue, we would propose some general bases for the functioning of the system and the establishment of capacities for managing risks in a part of their meaning and content. Namely, for the system to function, the following assumptions would have a strong meaning:

- Existence of database and data system;
- Such a database should be managed by an analytical centre;
- The analytical centre should be used with the most complex statistical operations, including predictive analyses based on mathematical models (quantitative research);
- Quantitative research must be parallel to qualitative research;
- Dissemination of data to policymakers;
- Making a strategy for the prevention of the crisis and active action contrary to its intentions; and
- Eliminate the causes.

5. Conclusion

In an international context, the active involvement of the state in the European Forum for Disaster Risk Reduction (regional platform) and the Euro-Atlantic Disaster Response Coordination Center (EADRCC), which is NATO's civilian response mechanism, and, of course, membership in The European Civil Protection Mechanism of the European Union.

The basic objectives of the disaster risk reduction system and the functioning subsystems are prevention (hazard identification and vulnerability assessment); early warning (integrated water management system, timely detection of fires, detection of air pollutants, regulation of riverbeds, clearing of canal network, full implementation of 112); response during crises (informing, protecting, organizing impact, protecting health, environment and property, providing food, water and medicines, strengthening the capacity for self-help and self-protection); and remedying the consequences of crises (recovery, reconstruction-rehabilitation).

In the evaluations of experts of the European Commission, the conclusions are given that all entities must implement the recommendations, where the reform of the crisis, protection and rescue system is proposed, ensuring functional unity, efficiency and effectiveness of the system in management, protection and rescue in conditions of crisis (Republika Severna Makedonija, 2022).

Over the past 10 years, the Government of the Republic of North Macedonia has adopted several conclusions that establish the need to redefine the crisis management system and the protection and rescue system, as the main subsystems of the disaster risk reduction system. This was also adopted in the 4th National Platform for Disaster Risk Reduction in 2019(Republika Severna Makedonija, 2022, p. 27).

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