PREvention of DIsasters ICT (InformaticandComputer Technology)

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Intellectual output (IO1) Create a methodological framework (Field and desk-top research) for inclusive training of Children, Youth, and Persons with Disabilities

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Declaration

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LIST OF ABBREVIATIONS

AEMET - The National Meteorological Agency
CMC- Crisis Management Center
DRR - Disaster Risk Reduction
EU - European Union
FSCP - Directorate-General Fire Safety and Civil Protection
HEI - Higher education institutions
LNA - Large number analysis
NATO - North Atlantic Treaty Organization
NCPS - National Civil Protection System
OER - Open Educational Resurces
PRD - Protection and Rescue Directorate
PWD – Persons with Disabilities
RAR - Radioactivity alert network
SNA - Small number analysis
UN – United Nations
US – United States

INTRODUCTION

Education, public awareness and training are the cornerstones of approaches aimed at reducing vulnerabilities to natural hazards. It is fundamental to include vulnerable social groups such as children, youth, and persons with disabilities in every stage of the disaster risk management and build stronger community resilience. Very often, these groups are neglected or the necessary attention is not provided. Moreover, it is critical to maintain a consistent impetus among all actors in each of the countries, from civil society to governments, from local to international organizations, with information technology oriented higher education institutions (HEI), the private sector and public institutions, schools working with persons with disabilities.

The methodological framework is the product of all the activities taken under the umbrella of intellectual output 1. The objectives of this output are:

—Empowerment of an inclusive access and nondiscriminatory participation of children, youth, and persons with disability in disaster prevention, preparedness, and response;

—Enhancement of the corpus of knowledge for best disaster risk management practices obtained from other countries rich in experience in this area;

—Creating a methodological framework for trainings of the target groups;

—Defining the parameters for OER, mobile app, and games;

—Providing an opportunity for improvement of the formal education system regarding disasters prevention, preparedness, and response.

All partner organizations worked on a development of research protocols alongside with the theoretical approach. They afterwards conducted a field research using semi-structured interviews, inquiry and case studies on a chosen and reliable sample of children, youth, and persons with disabilities, and stakeholders regarding disaster prevention, preparedness, and response. With the conducted field research quantitative and qualitative data was obtained regarding the needs of children, youth, and persons with disabilities regarding disaster prevention, preparedness, and response. The compiled knowledge enabled us to set the foundations for identification of best practices and definition of better disaster Risk Management Procedures for children, youth, and persons with disabilities in Macedonia, Bulgaria, and Spain. The findings were used in defining parameters for planned training of trainers, development of OER, mobile app, and games. The participating organizations also conducted an extensive desktop analysis of the existing curriculum in primary, secondary, and special schools. This comparative curriculum analysis gave us an insight in the present status regarding knowledge and skills development offered in the educational process of children, youth, and persons with disabilities. The qualitative and quantitative information gained with the field survey, the data gained from the curriculum analysis contributed to the creation and development of this methodological framework.

This publication is the first document in Europe of this type. It includes the topic about persons with disabilities in the area of disaster risk management. Hopefully, this document will have a strong impact on a national and international level, because this document provides a platform for all relevant institutions to start making changes in the area of disaster risk management and persons with disabilities.

I CURRENT SITUATION IN MACEDONIA, SPAIN, AND BULGARIA REGARDING DISASTER PREVENTION, PREPAREDNESS, AND RESPONSE

1. Overview of the National Disaster Management System in North Macedonia

The Crisis Management System in the Republic of North Macedonia, as well as the protection and rescue of the population in case of natural disasters and other accidents is established in accordance with the fundamental values of the constitutional order of the country. In that system, all relevant state bodies and other national entities play an active role. The Crisis management system comes under the jurisdiction of the Government and the government bodies that coordinate and manage the system as competent authorities of the state administration for crisis management matters. The existing concept is highly influenced by the concept of civil defense approach with emphasized Government's role during execution (Hadji-Janev&Jovanovski 2012). Some of the Government's competencies as the holder of the executive power are the following:

— Decides on the existence of a crisis situation, determines the affected area and undertakes the necessary measures and activities for its resolution;

— Notifies the Assembly and the President of the country of all activities related to the crisis situation;

— Decides on the use of the resources of the state administration bodies and the municipalities, and decides on the management thereof;

— Submits a proposal to the President of the country for the use of the Armed Forces in order to deal with the crisis situation;

— Determines the use of the resources of public enterprises and institutions, trade companies of special interest, and the citizens, and determines compensation for their use;

— Decides on the acceptance and dispatching of humanitarian aid;

— Adopts a unique assessment of all risks and dangers that can endanger the life and health of citizens, their property, material, natural, cultural assets, and general safety of the country;

— Decides on the amount of funds from the country's budget intended for prevention, early warning, and dealing with crises;

— Regulates the public alarm and prescribes signs of alarm;

— Performs other activities in accordance with the legal regulations.

The legal framework for disaster management consists of two sets of laws and regulations. First, laws and regulations that directly regulate this area, and second, laws and regulations that indirectly set out responsibilities and describe appropriate actions. The Law on Crisis Management and the Law on Protection and Rescue contains provisions that directly regulate disaster management. The indirect regulation of responsibilities and duties for an effective crisis management system are split among the Ministry of Interior, the Ministry of

Defense, the Ministry of Transport and Communication, the Ministry of Environment and Spatial Planning, and the Directorate for Protection of Classified Information.

The two main authorities in the Crisis management system are the Crisis Management Center (CMC) and the Protection and Rescue Directorate (PRD) as independent governmental agencies. The risks management approach from local to national level is regulated by the Law on Crisis Management enacted in 2004. The crisis management system has been established due to the need for continuous monitoring and assessment of the security risks and dangers. The contemporary disaster risk management concept in North Macedonia has three core functions: disaster risk reduction, disaster response, and disaster recovery. The first circle in the crisis management concept constitutes a Steering Committee and Assessment Group.

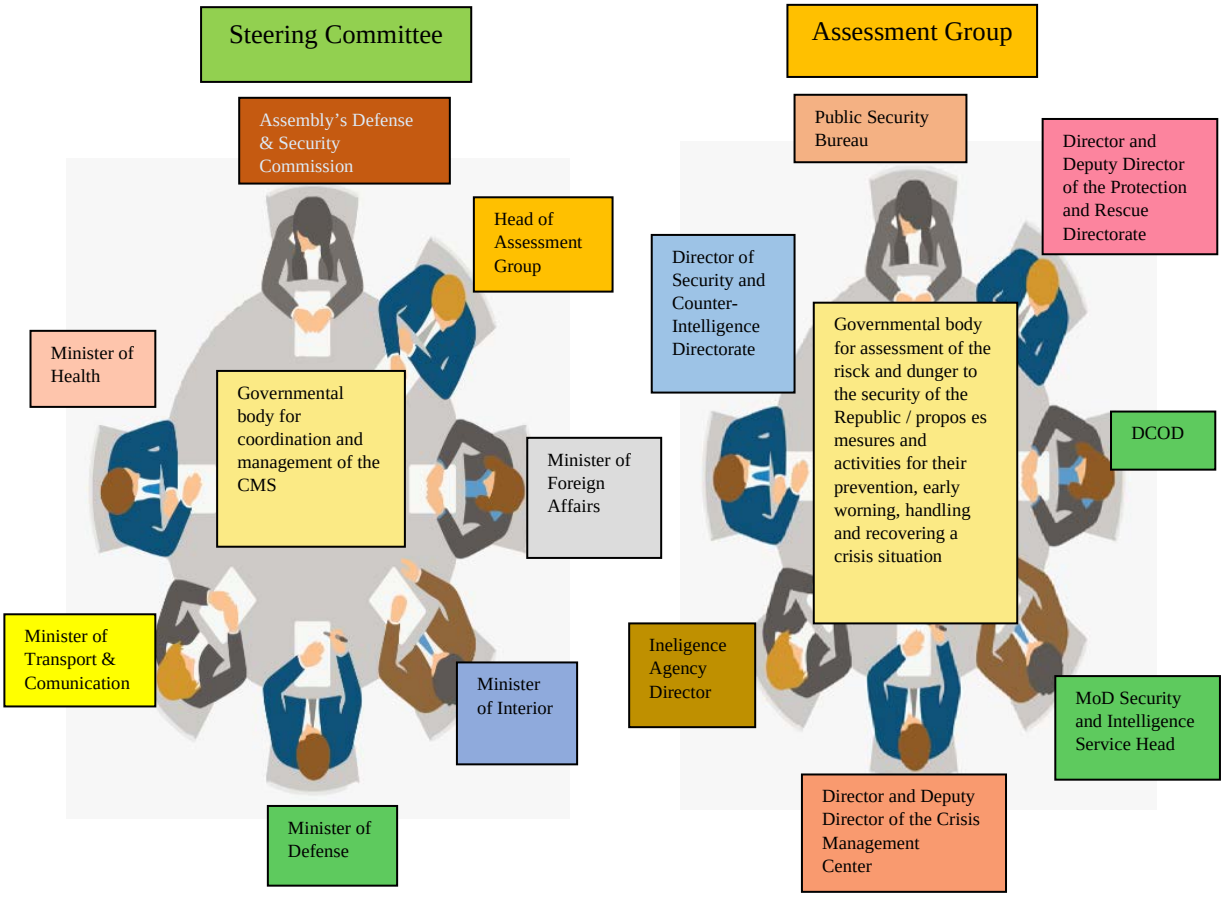

Figure 1. Steering Committee and Assessment Group in North Macedonia

The second circle starts with the Crisis Management Center which has both strategic and operational functions. The Center holds a strategic position within the coordination of crisis management activities upon a declared crisis situation. The crisis management system has been established due to the need for continuous monitoring and assessment of the security risks and dangers.

Protection and rescue in the North Macedonia are organized as a single system for tracking, preventing, and mitigating consequences caused by natural disasters or other emergencies (North Macedonia - Overview of the National Disaster Management System,

2019). The system for protection and rescue of people, the environment, material goods, natural resources, wildlife, and cultural heritage from natural disasters and other accidents is regulated by the Law on Protection and Rescue adopted in 2004. The Law sets out how responsibilities are divided between the participants in protection and rescue activities, including the state, local authorities, private companies, public enterprises, facilities, and services. Protection and rescue are organized and implemented by state bodies, municipalities, public enterprises, institutions and services, trade companies, citizens' associations, protection and rescue forces, and citizens. All listed entities are obliged to organize protection and rescue of their employees and people found in the facilities at the time of the occurrence of a natural disaster or other accidents. Citizens play a central role in the system of protection and rescue. There are three levels of protection. The first one is secured and provided by the local municipalities. The second is organized and performed by the Government with the Protection and Rescue Directorate, as the responsible authority. The third level is the international assistance in the cases of major natural disasters.

The protection and rescue system is realized through taking measures in order to prevent possible dangers; reporting and warning of possible hazards and providing protection instructions; training and exercises for training in protection, rescue and assistance; organizing protection and rescue forces; self-help, self-protection and mutual assistance; rescue and assistance; and through other activities.

The National Strategy for Protection and Rescue is adopted by the Assembly, at the proposal of the Government, for a period of five years. The Government, the Councils of the municipalities, and the City of Skopje adopt an annual program for protection and rescue. A plan for protection and rescue from natural disasters and other accidents is adopted by the Directorate for Protection and Rescue, in order to organize the implementation of protection and rescue.

1.1. Prevention

Disaster prevention expresses the concept and intention to completely avoid potential adverse impacts through action taken in advance. Those actions are taken in order to prevent a natural phenomenon or potential hazard from having harmful effects on either people or economic assets.

1.1.1. Risk assessment

Risk assessment is a systematic approach to characterizing the risks posed to individuals and populations by potentially adverse exposures. The risk assessment of the security of North Macedonia for all risks and hazards is a document of public interest and is drafted based on the Law on Crisis Management. However, legislation provides both the PRD and the CMC with roles in assessing risk, without clearly establishing which organization is responsible for publishing a national assessment (Peer review-report North Macedonia, 2018). The Crisis Management Center risk assessment identifies the presence and expected dangers to which the territory of North Macedonia is exposed, their description, analysis, assessment of the likelihood of their occurrence in time and space, expected intensity, and impact strength, possible consequences, as well as the exposure, vulnerability, and resilience of the population

in the face of disasters. It has made a concrete link of the causative circle between the danger (as a probability of negative consequences) and the damages (as the final consequence of the negative impact of the danger) expressed in regard to the population, the environment, specific buildings, infrastructure, or other valuables on state territory. The Protection and Rescue Directorate assesses the risks through established measures for all natural disasters and other accidents. The risk assessment is one of the segments of the Protection and rescue plan and it is based on the knowledge of previous hazards and potential new hazards.

1.1.2. Risk management planning

Disaster risk management is the application of disaster risk reduction policies and strategies to prevent new disaster risks, reduce existing disaster risks, and manage residual risks, contributing to the strengthening of resilience and reduction of disaster losses (The knowledge platform for disaster risk reduction). Disaster risk management plans set out the goals and specific objectives for reducing disaster risks along with related actions to accomplish these objectives.

As a result of the complex economic, social and political situation, in the Republic of North Macedonia, risk management planning is mostly organized as an ad hoc activity. Most of the activities in this area are carried out within the different relevant institutions and in accordance with the competencies defined by law. There are elements of cooperation in management planning between public institutions, but this issue is not legally regulated by a single regulation.

The Protection and Rescue Directorate has an Emergency Response Plan based on previous estimates. The plan is firstly developed locally, and after that the plans are united on a national level. There are local and national evacuation plans for each measure separately. The plan sets out the forces, means, and resources that will be used in the process of evacuation. The measures set out in the plan are at three levels: Preparedness (it determines how duties are maintained); Mobilization of forces, means, and equipment (it determines how the call and reporting is performed); Plan for protection and rescue measures (there are 14 humanitarian and technical-technological measures).

The Crisis Management Center does not have an Emergency Response Plan. There is no legal obligation for that, and the actions are based on Standard Operating Procedures. However, the development of the Emergency Plan is ongoing because CMC has estimated that there is a need for Emergency plan and its drafting is at an advanced stage.

1.1.3. Risk awareness raising

In accordance with the governmental needs (mostly at the time of occurrence of a natural or other disaster), each of the relevant institutions, informs the population about its own plans and the latest results of its work. The existing documents that are operatively accepted as risk assessments of institutions at different levels, are available to broader user groups through printed material or, more commonly, through websites of the competent institutions. Different institutions, each within their own jurisdiction, have certain programs and projects of a mostly temporary nature that are used to raise public awareness. Thus, the Protection and Rescue Directorate mainly informs the population through the electronic and social media. The Directorate is developing some actions to educate and raise the awareness of the public. There

is a long-term plan in place, which includes the integration of preparedness lessons in education programs. In this way, the Directorate realized several trainings (basic and advanced), as well as several campaigns in primary and secondary schools. In the short term, the activities are aimed at preparing for winter weather.

The Crisis Management Center communicates through the media and informs the public and the media on the Standard Operating Procedures for communication, coordination, and cooperation between the entities in the crisis management system in the event that a state of emergency is declared. The Center also organizes campaigns for reporting in case of hot and cold waves.

1.2. Preparedness

Preparedness is defined by the United Nations International Strategy for Disaster Reduction as knowledge, capabilities, and actions of governments, organizations, community groups, and individuals to effectively anticipate, respond to, and recover from, the impacts of likely, imminent or current hazard events or conditions. Preparedness is actually the implementation of the measures that ensure the organized mobilization of personnel, funds, equipment, and supplies within a safe environment for an effective relief.

1.2.1. Training and exercises

There is no formal legal document in North Macedonia that would regulate the strategy in the area of preparedness through trainings and exercises. Within the regular activities, with extremely modest capacities and financial resources, planned and executed trainings and exercises are also modest (Peer review report North Macedonia, 2018). International trainings are carried out under the Union Civil Protection Mechanism, bilateral cooperation with the countries in the region and through cooperation with the international actors in the country (NATO, US, International Trust Fund). North Macedonia actively participates in all training and exercises organized by NATO, EU, bilateral partners, and other international organizations. The country has a number of EU-trained search and rescue teams and flood-related modules.

The Protection and Rescue Directorate's staff participates in the Civil Protection Mechanism; in NATO courses; training in Russia, etc. The Directorate carries out trainings of the response units, institutions, and private companies. The trainings are organized as basic, additional, and special trainings for two categories:

—republic forces (reserve forces and state administration bodies) where the problem is more pronounced as training funds are not allocated;

—spatial forces (public companies, institutions, and services) where engagement is more serious.

Trainings for Crisis Management Centre's employees are mostly provided through external assistance. The Center also organized three types of trainings: generic trainings (for civil servants); crisis management trainings; trainings for crisis management institutions.

1.2.2. Early warning systems

According to the Law on Crisis Management, CMC has a responsibility for timely informing and early warning. The early warning and alert system is part of the State Operations

Centre, within the Crisis Management Centre, which functions at the national level 24 hours a day, 7 days in the week. The national alerting arrangements include sirens and national broadcasters (TV and radio), but these arrangements had lacked investment and there is a need to develop a means to alert all mobile users in the country or a specific geographic area. In order to appropriately deliver the necessary alert, the CMC established a cooperation network with a number of institutions and crisis management system stakeholders. In that regard, there is particularly close cooperation with a wide range of national institutions responsible for monitoring hydro-meteorological, seismic, and radiological hazards. However, the most common way of informing the public is through the media. Media usually provide the first information about such events. The competent institutions cooperate with the media to inspect the provision of adequate information.

1.3. Emergency Response

After a crisis situation is declared, the Crisis Management Center provides inter-departmental and international cooperation, as well as coordination, measures, and activities in crisis management. The Center takes over the international communication and coordination with international institutions. It coordinates the requests, reception, and distributing of international assistance. Regarding disaster response resources, the Crisis Management Center developed a National platform with a database of national resources for cross-border operations. The relevant institutions declare their own capacities for international disaster response operations. The operational role of CMC fully comes to light when it delegates crisis management responsibility by establishing additional 35 regional crisis management centers, through which CMC monitors the situation, exchanges information, and makes assessments.

On the other hand, the Protection and Rescue Directorate performs activities of protection and rescue in case of natural disasters and other accidents. The Directorate uses its republic units for protection and rescue, which have an active and a reserve component. The active staff is headed by the Director of the Protection and Rescue Directorate, whereas the reserve staff is also headed by the Director in a role of a commander. At the state level, there is a national headquarters (with the relevant institutions). At the local level, there are 35 regional headquarters. The evacuation of the population is one of the measures under the responsibility of the Protection and Rescue Directorate.

2. Overview of the National Disaster Management System in Spain

The obligation to protect the integrity and health of citizens in Spain is granted to public authorities in the constitution itself. As a fundamental instrument of public security, the organization, functioning, and implementation of civil protection is carried out by different public administrations and by other entities involved in the risk management. The Civil Protection system is based on four key pillars: a comprehensive and actionable legal framework; the coordinating bodies; civil protection planning; and training activities (Spain - Overview of the National Disaster System, 2019). The Directorate General of Civil Protection and Emergencies plays an essential role at a national level.

DISASTER RELIEF IN SPAIN

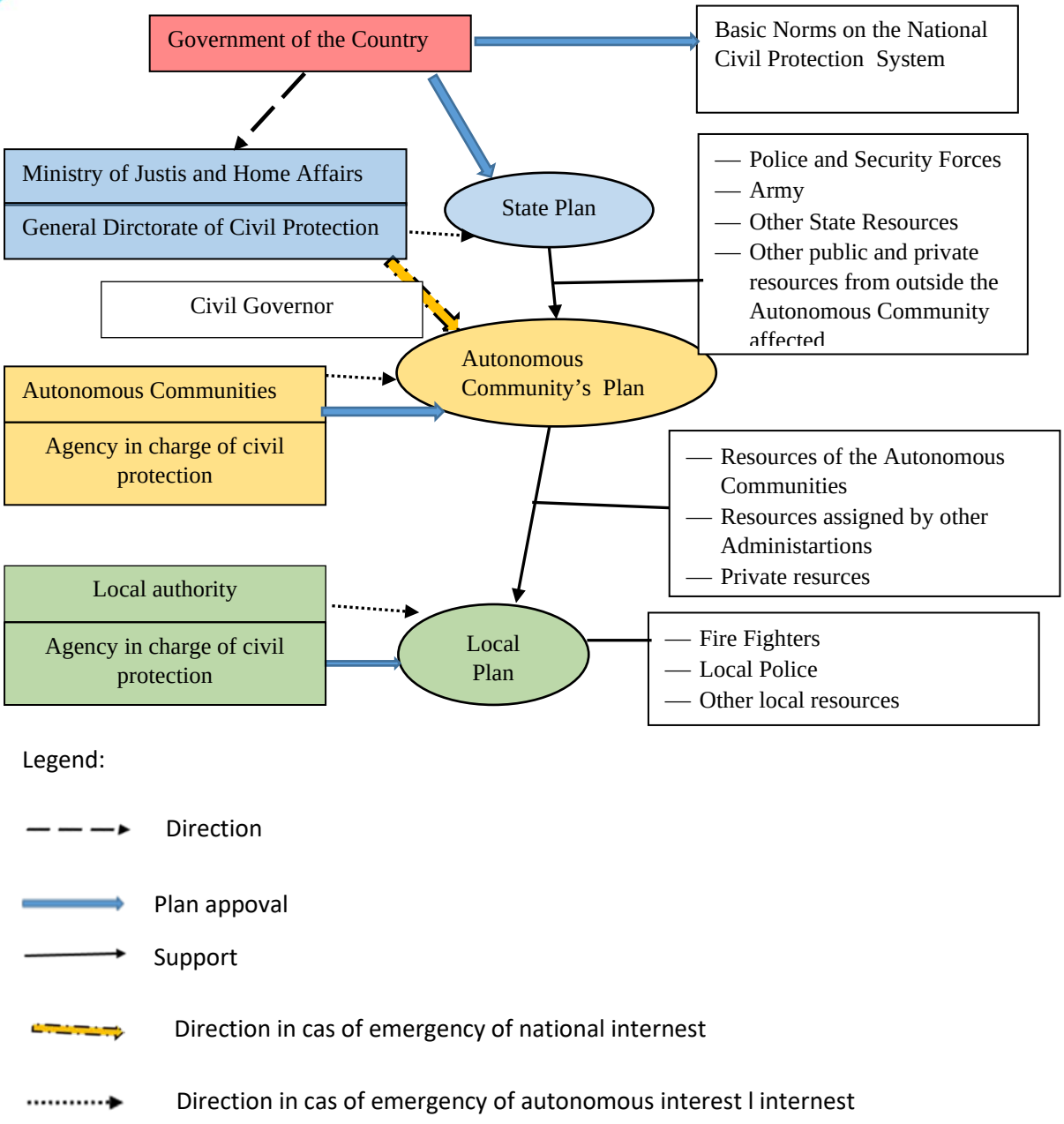

Figure 2. Disaster relief in Spain

The Law 17/2015 on the National Civil Protection System (NCPS) ensures the coordination, cohesion, and efficiency of civil protection public policies. It also regulates the competences of the State General Administration on this matter. The NCPS integrates all public or private organizations and institutions, and citizens participating in civil protection activities. These belong to public administrations - national, regional, and local - along with public institutions, private entities, and citizens. Autonomous communities are responsible for the

direction and coordination of the emergencies on their territory, unless declared as a national emergency.

There are also many other laws and regulations in this regard, such as Royal Decree 2816/1982 of 27 August, which approves the General Regulations of the Police for Public Shows and Recreational Activities, and Royal Decree 314/2006 of 17 March, which approves the Technical Building Code, Royal Decree 2267/2004 of 3 December 2004, approving the Fire Safety Regulations for industrial establishments, or the Order of 13 November 1984 on the evacuation of teaching centres for basic general education, secondary education and vocational training. The Law 2/1985 of 21 January on Civil Protection contemplates the aspects related to self-protection, determining in its articles 5 and 6 the obligation of the Government to establish a catalogue of activities of all kinds that may give rise to an emergency and the obligation of the owners of the centres, establishments and dependencies or similar means where these activities are carried out to have a self-protection system, equipped with their resources, for risk prevention, alarm, evacuation, and relief actions. Likewise, Article 6 itself determines that the Government, at the proposal of the Ministry of Interior, following a report by the National Civil Protection Commission, will establish the basic guidelines for regulating self-protection. There is also experience in various areas of the Autonomous Communities and local entities in the non-binding application of the Order of 29 November 1984, which approved the Self-Protection Manual for the development of the Fire Emergency Plan and the Evacuation of Premises and Buildings, and the Autonomous Communities have enacted rules and regulations on matters such as public shows, or fire prevention, which, together with municipal ordinances, have gradually increased the body of rules on self-protection. The main regulation is Royal Decree 393/2007, of 23 March, which approves the Basic Standard for Self-protection of centres, establishments and facilities dedicated to activities that may give rise to emergencies. It constitutes the legal framework that guarantees adequate levels of safety, efficiency and administrative coordination for all citizens, in terms of prevention and control of risks. The Basic Self-Protection Standard establishes the obligation to draw up, materially implement and keep the Self-Protection Plans operational, and determines the minimum content that these plans must incorporate in those activities, centres, establishments, spaces, facilities, and dependencies that may potentially generate or be affected by emergencies. It affects not only the actions to be taken in such situations, but also the analysis and assessment of risks, the adoption of preventive measures and risk control, and the integration of emergency actions in the corresponding Civil Protection Emergency Plans.

2.1. Prevention

The Prevention policy aims to avoid, or at least minimize, the adverse consequences and impacts of the pre-identified key risks. The main prevention actions under the scope of civil protection activities in Spain are based on public communication and risk awareness, and the self-protection plans developed for all dangerous activities under the regulation of the self-protection rule - Royal Decree 393/2007, 23 March (Spain - Overview of the National Disaster System, 2019). This regulation involves the national system of civil protection and the private sector. There is no horizontal organization responsible for all prevention plans, but the prevention policy is organized following a sectorial approach, under the authority of the

Ministry (central level) or the Regional Government Counsellor (water management, dam safety, meteorology, environment, climate change, chemical industry, nuclear energy).

2.1.1. Risk assessment

According to Decision 1313/2013/EU of the European Parliament and of the Council, EU Member States need to provide the Commission with studies on national risk analysis. This risk assessment is reviewed periodically. Cross-border agreements on civil protection that Spain has with Portugal, France, and Morocco, also include risk assessment. According to the classifications offered by several autonomous communities and the Directorate General of Civil Protection and Emergencies, the most commonly established risk profiles are the following:

—Natural risks which are triggered by natural phenomena, not directly caused by the presence or activity of humans (flood risk geological risk, seismic risk, weather, and climate risk);

—Technological risks which derive from the application and use of technologies (industrial risks, risks in the transport of dangerous goods, nuclear risk);

—Anthropic risks directly related to people's activity and behaviour (risk of fire and subsidence, transport risks, risks in large concentrations, risks of anomalies in basic supplies, pollution risk (non-technological), risk in sports activities, risk of epidemics and pests, risk of attacks, accidents, and missing persons).

2.1.2. Risk management planning

Risk management planning develops organizational and procedural measures that support and assist public administrations in civil protection emergencies. Public administrations develop Civil protection plans according to their competences in civil protection, as foreseen by the law. Territorial plans deal with emergencies that affect the territory of an autonomous community or a municipality. Each of the accidents and natural disasters require special plans (floods, earthquakes, chemical and radiological emergencies, transportation of dangerous goods, forest fires, volcanic eruptions, tsunamis, biological emergencies).

At a cross-sectoral level in Spain, emergency and disaster plans include the coordinated participation of civil protection, police, fire, and health services. Depending on the type of emergency, additional public services may be incorporated on an educational level; the educational centers, as part of their action plans, have external help from the fire brigade, the Red Cross and the local police to carry out the drills. The legislation in Spain includes among the activities that require the elaboration of a Self-Protection Plan for schools, a direct reference to young children and people with disabilities. Those establishments for educational use specifically intended for people with physical or mental disabilities or other people who cannot carry out an evacuation by their means; and any other establishment for educational use which has an evacuation height equal to or greater than 28 meters or an occupation equal to or greater than 2000 people, will be obliged to carry out a Self-Protection Plan drawn up by a competent technician, with the obligations and responsibilities laid down in the aforementioned Royal Decree (The Directorate General for Civil Protection considers those educational

establishments which provide schooling for children under 6 years of age to be included in this obligation). The centers included in the RD 393/2007, have the obligation to carry out a Technical Plan of Self-protection; a more complex and extensive document than an emergency and evacuation plan. The rest of the centers, following current regulations, can plan evacuation and other actions in emergencies on their own, and notify the corresponding annual evacuation drills by the Ministerial Order of 13 November 1984 on the evacuation of teaching centers.

2.1.3. Risk awareness raising

The population awareness is raised through an active methodology based on community meetings and the dissemination of videos, posters, brochures, and guides adapted to children, teenagers, and adults. Numerous prevention and awareness initiatives are carried out throughout Spain, organized by autonomous communities, by city councils; civil protection is also carried out in schools and the facilities themselves, with the collaboration of the Red Cross, local police, firemen. The different Public Administrations, within the framework of their competences, promote in a coordinated way the self-protection, establishing the necessary means and resources through the development of actions oriented to the information and awareness of the citizens, companies, and institutions in the matter of prevention and control of risks, as well as in the matter of preparation and response in emergencies. Self-protection recommendations are provided to the population in written language and through explanatory videos about how to behave in case of emergency. Besides, guides dealing with the different risks have been issued for the primary and secondary school pupils in order to learn and practice prevention and self-protection measures. There is a technical guide for prevention which addresses the responsible bodies in charge of implementing information and awareness programs for the population potentially affected by the different risks. In addition, Twitter is used to disseminate information on risks and emergency information in real time.

2.2. Preparedness

Preparedness is the process of turning awareness of risks and natural hazards into actions that improve its capability to respond to disasters. Thus, the National Civil Protection School in Spain is a major center for strategic management that provides specialized training for national and international staff, first responders of Civil protection agencies, and volunteers, as well.

2.2.1. Training and exercises

Each year the National Civil Protection School approves a training plan with an average of 160 courses, 6000 students, and 4000 teaching hours (Spain - Overview of the National Disaster System). National exercises test the plans to cope with the different risks at local, regional, and state levels and to practice emergency management and intervention tasks. Concerning international exercises, Spain has coordinated five full-scale exercises and table-top exercises funded by the European Commission within the Union Civil Protection Mechanism framework since 2012.

Regarding self-evaluation plans and in order to evaluate the self-protection plans and ensure the efficiency and operability of the emergency action plans, emergency drills shall be performed at least once a year, with the minimum frequency established in the plan, and any

case, with an evaluation of the results. The purpose of the drills will be to verify and check the effectiveness of the emergency response organization. The training of the personnel assigned to the response organization.

2.2.2. Early warning systems

For the purpose of early warning, The National Meteorological Agency (AEMET) issues warning bulletins related with meteorological hazards such as rain, storms, wind, and snow. The National Water Office and the river basins offices provide hydrological information and submit it to the civil protection authorities. The radioactivity alert network (RAR) constantly measures Gamma radiation levels throughout the national territory, monitors its trends, and immediately detects abnormal radiation levels that would require the triggering of the corresponding actions as defined in the emergency plans for nuclear and radiological hazards. The National Seismic Network is responsible for detection, monitoring, and alert triggering to all civil protection and government authorities in order to allow response plans activation against seismic and volcanic risk. Other agencies, like the Oceanographic Institute, Geological Institute, and the National Seaport Management Authority collaborate with other complementary instruments, such as sea level and tidal waves detection instruments, in order to set up a national tsunami warning center.

2.3. Emergency Response

There are three levels regarding emergency situations in Spain. The first one is an emergency situation at a local level, when the local territorial plan is activated, and local resources are used. The second level is activated when the local level is unable to tackle the situation and the emergency management responsibility is taken over by the community's Civil protection authority, which provides its own resources. The third level is activated in a situation of nuclear emergency or war, when the Minister of Interior may declare a national emergency and take over the overall coordination of the activities.

The emergency response procedures include:

—Detection and Alert.

—Alarm mechanisms (Identification of the person who will give the notices; Identification of the Civil Protection Emergency Care Coordination Centre).

—Emergency response mechanisms

—Evacuation and/or Confinement.

—Provision of First Aid.

—Methods of reception of external aid.

In all emergency situations, the international assistance could be requested through the EU Civil Protection Mechanism or in accordance with the bilateral agreements.

3. Overview of the National Disaster Management System in Bulgaria

The disaster management protection in Bulgaria is carried out at a national, regional, and municipal level. The policy for disaster protection at a national level is determined by the Council of Ministers. The Council acts as a National Platform for disaster risk reduction in Bulgaria. The Council is assisted by the Disaster Risk Reduction Council, which acts as the

national DRR platform. The Council includes relevant ministries, the Bulgarian Academy of Sciences, universities, the municipalities association, the Bulgarian Red Cross, and other organizations working on DRR.

The executive power authorities assist the drafting of national planning documents and implement them; control the implementation; take DRR measures; provide the response capacities of the relevant authority and implement the activities of the national strategy for DRR. At a regional level, the Regional Governors organize and manage the disaster management in the region, assisted by Regional Disaster Risk Reduction Councils. At a municipal level, the mayors organize and manage the disaster protection within the municipalities, assisted by the Municipal Disaster Risk Reduction Council. An integral part of the unified rescue system are also 233 voluntary formations and 3138 registered volunteers who are under the direct authority of the mayor (Bulgaria - Overview of the National Disaster Management System, 2019).

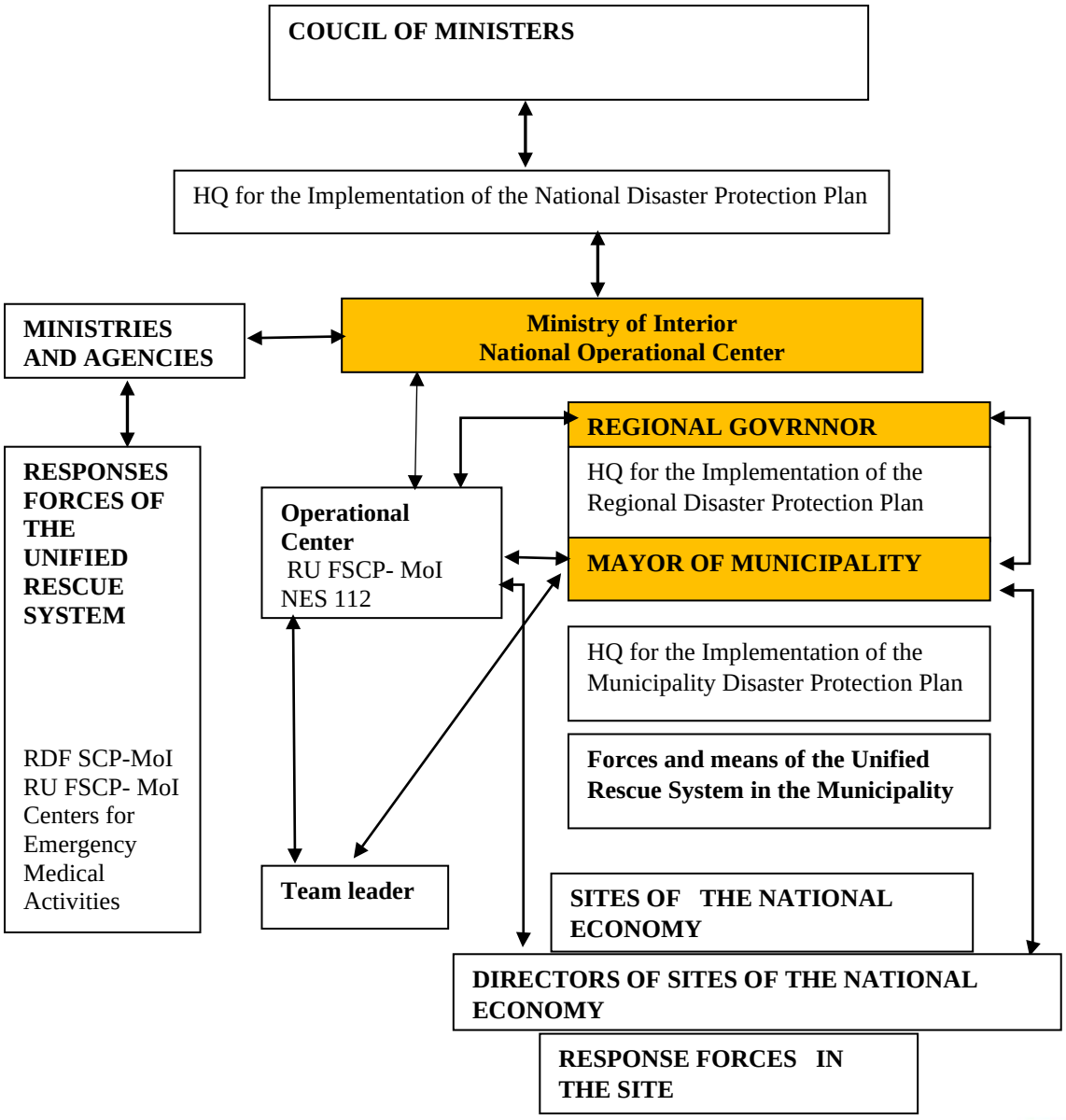

Figure 3. Council of Ministers in Bulgaria

3.1. Prevention

Prevention activities are undertaken to reduce disaster risks. The legal framework of the natural and man-made disaster management in Bulgaria is the Disaster protection act, the spatial planning act; the water act; the environmental protection act; the safe use of nuclear energy act; the forest act, as well as the regional development act. The Disaster Risk Reduction planning includes development of a national DRR strategy, national DRR programs, sectoral, regional, and municipal DRR programs. The vision, expected results, strategic goals, and priority areas for DRR are defined in the national DRR Strategy 2018-2030.

3.1.1. Risk assessment

Risk assessments in Bulgaria are a mandatory part of the regional and municipal disaster protection plans. The risk assessments, at a regional and municipal level, are developed by the methodology in preparedness for the implementation of disaster protection plans and guidelines. Disaster risks analysis, assessment, and mapping include earthquakes, floods, risk of a nuclear or radiation accidents; geological disasters, and forest fires. There are few competent authorities that carry out disaster risk analysis and assessment: the Ministry of Regional Development and Public Works for seismic and geological risk; the Chairman of the Nuclear Regulatory Agency for nuclear and radiation accident risks; the Ministry of Environment and Water for flood risk; Ministry of Agriculture, Food and Forestry for the forest fires risk.

3.1.2. Risk management planning

Disaster protection plans determine the hazards and risks of disasters, as well as the measures for prevention or reduction of the risk of disasters. The plans also determine the responsibilities and the bodies responsible for implementing the measures, the necessary resources to implement the activities, the interaction between the components of the unified rescue system, early warnings and alerts orders in case of a danger or disaster, and recovery measures, as well.

The national disaster protection plan is developed by the DRR Council to the Council of Ministers. The bodies of the central executive power and the constituent parts of the Unified Rescue System develop disaster protection plans for the implementation of the tasks arising from the national plan for the disaster protection and plans at the regional and municipal level. In accordance with the water act, flood risk management plans have been developed for each of the four basin management areas for the period 2016-2021. Related to geological risks, a national program for prevention and reduction of landslides on the territory of the Republic of Bulgaria, erosion and abrasion on the Danube and the Black Sea Coast for the period 2015-2020 was developed. In compliance with the forestry act, annual plans for forest fire protection activities are being developed (Bulgaria - Overview of the National Disaster Management System, 2019).

3.1.3. Risk awareness raising

A big challenge is that the society is not informed enough on the principles, purposes, and activities for disaster risk reduction, as well as on response activities before, during, and after disasters (Republic of Bulgaria Disaster Risk Reduction Strategy). However, gathering

and dissemination of information on good practices related to the successful development of meaningful policies is in the foundation of disaster risk reduction. At a national level, the dissemination of information is mainly conducted through electronic media and social networks, via the press center of the Ministry of Interior, the web page of the Directorate-General Fire Safety and Civil Protection (FSCP), and the online FSCP magazine SOS 112. The regional and municipal FSCP directorates also use regional and local mass media and interact with regional and municipal administrations. Civilians are informed on disaster risks through information campaigns such as leaflets, banners, handbooks, videos, and TV and radio spots. Children and students receive 5 school hours per year dedicated to disaster risk awareness training.

3.2. Preparedness

The current Strategy identifies strategic goals for disaster risk reduction and priority areas of action to achieve those goals. The implementation of the Strategy shall ensure that disaster risk reduction is a national priority and shall contribute to prevention from disasters and mitigation of their adverse consequences through actions at all management levels and through a good coordination between the responsible institutions. Implementing all actions laid down in the Strategy shall ensure sustainable management for disaster protection (Republic of Bulgaria Disaster Risk Reduction Strategy).

3.2.1. Training and exercises

The training of FSCP staff is carried out in the Centre for Specialization and Professional Training in Fire Safety and Rescue in Varna, and the Centre for Professional Qualification in Montana. The training includes initial training for firefighters, specialized rescue training, and training for team commanders and head of operational teams. The Centre in Montana is also involved in international training and exercises within the EU framework, but also in NATO, IAEA and regional initiatives.

The Directorate-General Fire Safety and Civil Protection participates in the consortium that organizes and conducts the assessment mission course and is the leading partner in the consortium that conducts the Seminar for Mechanism Experts in Sofia.

3.2.2. Early warning systems

Early warning systems in Bulgaria are developed to inform the population, governmental agencies, and different units of the Unified Rescue System. The early warning and population alert system (siren system) is designed to simultaneously alert a large group of people throughout the country or on a certain region of upcoming or emerging disasters and to provide instructions on necessary measures and actions through acoustic signals and "live" voice information for citizens for acting in emergencies. The sirens can be operated locally by the local FSCP operational center or centrally by the National Operational Center.

The early warning and alert system of governmental agencies and different units of the unified rescue system (DAKS) was set up to inform the government and emergency responders (Unified Rescue System). With its capabilities, this system ensures rapid mobilization and response of all competent officials, and improves the coordination of executive authorities and

response units at national, regional, and municipal levels (Bulgaria - Overview of the National Disaster Management System, 2019).

3.3. Emergency Response

Disaster risk reduction and emergency response is an expression of moral and social responsibility of all management levels. The response to disasters in Bulgaria is organized through the Unified Rescue System, which includes structures of ministries, municipalities, companies, and the organizations of volunteers, and the armed forces. The National Operational Center of the DG FSCP operates as a point of coordination and information for the Unified Rescue System and is in constant connection with the 28 regional operational centers in the country. The NCP carries out a round-the-clock duty for forces and resources of the Directorate-General Fire Safety and Civil Protection (Bulgaria - Overview of the National Disaster Management System, 2019).

4. Conclusions and Recommendations

From the overviews of the National disaster management systems elaborated in this first part of the document related to Intellectual Output 1, we can identify the basic indicators of the current situation in North Macedonia, Spain, and Bulgaria regarding disaster prevention, preparedness, and response.

Each of these three European countries, has its legal framework that regulates the disaster management system and defines authorities in that system, their responsibilities and the measures that can be used in crisis situations. The disaster management concept in these countries follows the basic idea promoted by the UN and the Hyogo Framework for Action: Building the Resilience of Nations and Communities to Disasters. Generally, executive power has a central role in disaster management in each of these countries. The legal competencies regarding crisis management are performed by governments through the system of special agencies and institutions. These entities are directly responsible for dealing with different kinds of crisis situations.

Our detailed research, explained below in the other parts of this document, clearly shows that there is a need for improvement in some parts of the crisis management systems. It is important to emphasize that the budgeting is insufficient to fulfill the special government's agencies core functions in peacetime. Limited financial resources influence the lack of external expertise aid, lack of stronger and permanent actions in building public awareness for disaster prevention and protection, as well as lack of clear procedures for disaster protection of people with disabilities, children, and youth. As a result, in North Macedonia for example, the risk management planning is mostly organized as an ad hoc activity, mainly because of a lack of coordination at a higher level. There is also a lack of modern means to disaster alert all mobile users in the country or a specific geographic area.

Having in mind that in the forthcoming decades climate change is expected to cause increasing of the frequency of disasters, more frequent floods and devastating forest fires, it is necessary to consolidate the efforts of all responsible institutions and their activities in disaster risk reduction. The awareness of the responsible institutions will ensure the use of the good practices in planning the preventative measures and activities. The first step is to perform a risk

assessment, to examine the good practices, which help to reduce disaster risks and to ensure a responsible attitude to disasters of the leading institutions and the population. Consequently, we recommend long-term risk management planning, particularly in peacetime in order to be prepared in a time of accidents and disasters. Consistent systematic approach to public awareness building should be developed with different campaigns, and other appropriate forms of raising awareness. The means to deliver alerts for the whole country or a specific geographic area should be updated and adapted for children, youth, and persons with disabilities, as well.

II. RESEARCH METHODOLOGY

Research methodology is a strategy that "silhouettes our choice and use of specific methods relating them to the anticipated outcomes (Crotty, 1998). As in all studies the research methodology is based on the research problem, its types and its features (Noor, 2008).

For this study, it was decided on a mixed method research methodology. These studies, that encompass a mixed method methodology come from a pragmatic paradigm that combines qualitative and quantitative approaches within different phases of the research process (Tashakkori&Teddlie, 2008, p.22).Mixed-method designs are defined as including at least one quantitative method (designed to collect numbers) and one qualitative method (designed to collect words), where neither type of method is inherently linked to a particular inquiry paradigm or philosophy (Caracelli&Greene, 1993).

This mixed method research methodology design embodies both qualitative and quantitative methods in a single study with the purpose to understand the research problem (Creswell, 2003; Creswell&Clark, 2011). For this purpose, within this study, the qualitative and quantitative data were collected concurrently. The concept behind this was to converge and confirm the finding using both types of data. In this manner, generalizations based on the quantitative research could be made with the deep understanding which is offered with the qualitative research.The promise of mixed methods, like the promise of implementation science, lies in its ability to move beyond the confines of existing methodological approaches and develop innovative solutions to important and complex problems (Palinkas et all, 2013).

According to Wisdom and Creswell (2013), the advantages of the mixed method research methodology are:

- Compares quantitative and qualitative data;
- Reflects participants point of view;
- Fosters scholarly interaction;
- Provides methodological flexibility;
- Collects rich, comprehensive data.

Regarding the approach or the mixed method strategy, the convergent strategy was used. The qualitative and quantitative data were conducted and analyzed concurrently and independently. This strategy was chosen because the data was different but complementary. The integration of the qualitative and quantitative data occurred during data interpretation. The conclusions were made by synthetizing the qualitative and quantitative strand.

1. Research subject

The research methodology was developed with the purpose to gain relevant input from the respondents related to their preparedness for managing emergency situations, and emergency response, especially in relation to children, youth, and persons with disabilities. The research was oriented towards the preparedness for appropriate protection during emergencies as a long-term activity process through which the capacity of each state as a whole (North Macedonia, Bulgaria, and Spain), as well as the capacity of schools and specialized institutions, is strengthened.

2. Research goal

The research goal was oriented towards gaining knowledge whether state institutions responsible for managing crises, as well as the schools and specialized institutions, are prepared to efficiently manage all emergencies in which children, youth, and persons with disabilities are threatened. The goal was also to discover whether they are prepared to support a seamless transition from the emergency response, through renewal, and providing of a sustainable development. Taking into consideration that children and youth are more fragile than adults, especially having the vulnerability of persons with disabilities in mind, the research goal was oriented towards gaining knowledge whether there is awareness, as well as special procedures and resources (human and material) in the institutions for crisis management, for a specialized treatment of these categories of persons during emergencies.

3. Research areas

The following research areas were defined within this methodological framework:

1. Organizational issues and budget
2. Defining risk profiles
3. Emergency response plan
4. Inter-sectoral and inter-institutional cooperation
5. Raising awareness
6. Inter-sectorial and inter-institutional cooperation
7. Inclusion of children, youth, and persons with disabilities in the planning process

All the data was analysed within these areas of research.

1. Sampling

One of the most important features distinguishing what is commonly referred to as qualitative from quantitative inquiry is the kind of sampling used. While qualitative research typically involves purposeful sampling to enhance understanding of the information-rich case, quantitative research ideally involves probability sampling to permit statistical inferences to be made. Although purposeful sampling is oriented toward the development of idiographic knowledge—from generalizations from and about individual cases— probability sampling is oriented toward the development of nomothetic knowledge, from generalizations from samples to populations (Sandelowski, 2000). Notwithstanding these key differences, purposeful and probability sampling techniques can be combined usefully, as it was done in this study.

For the quantitative part we used stratified purposeful sampling. In this type of sampling the researcher wants to ensure that certain cases varying on preselected parameters are included. Although this kind of sampling is— from a probability sampling standpoint— statistically nonrepresentative (Trost, 1986), it is, from a purposeful sampling standpoint, informationally representative. Each case represents a prespecified combination of variables, the distinctive confluence of which is the focus of study. The respondents were children and youth with and without disabilities that could give us an insight in their experiences related to disaster management in their respective countries.

For the qualitative part we used random purposeful sampling. Another example of the combined use of probability and purposeful sampling is random purposeful sampling. This sampling strategy is employed when there is a very large pool of potentially information-rich cases and no obvious reason to choose one case over another. Each case drawn met the minimum criterion in all purposeful sampling: namely, that it is an information-rich case. This type of sampling was used both for the semi-structured interviews and for the case studies with the purpose to define the inferences we wanted to make concerning convergent validity and fuller description or explanation of cases.

2. Analysis

The analysis within this study was conducted by using the nested analysis approach (Lieberman, 2005). This is framework which uses a combination of small number analysis (SNA) with a large number analysis (LNA) within a single framework. Lieberman defines LNA as a mode of analysis in which the primary causal inferences are derived from statistical analyses which ultimately lead to quantitative estimates of the robustness of a theoretical model. SNA is defined as a mode of analysis in which causal inferences about the primary unit under investigation are derived from qualitative comparisons of cases and/or process tracing of causal chains within cases across time, and in which the relationship between theory and facts is captured largely in a narrative form. This strategy, a strategy of combining these two approaches, is used to improve the quality of conceptualization and measurement, analysis of rival explanations, and overall confidence in the central findings of this study. Although the distinction between LNA and SNA is generally between quantitative and qualitative modes of analysis, some aspects of SNA may involve quantitative analyses at different levels of analysis.

1.1. Curriculum analysis

The research of the formal educational system in North Macedonia, Spain and Bulgaria regarding prevention, preparedness and response is based on the extensive desktop analysis of the existing curricula in primary, secondary and special schools, conducted by the participating organizations. The answers within the Curriculum analysis protocol completed by each of the partners, reflected the situation regarding the subjects and topics in the curricula through which students in primary, secondary, and special schools get familiarized with natural disasters and other accidents. We also received relevant data for certain subjects and other activities that are directly or indirectly related to the training of students regarding self-protection in cases of natural disasters and other accidents. This comparative curricula analysis gives us an insight in

the present status regarding the knowledge and skills development offered in the educational process of children, youth, and persons with disabilities.

As a result of the comparative analysis, and in accordance with the objectives of this project, we presented an overview of subjects and contents related to natural disasters and other accidents, as well as subjects and contents regarding self-protection of students, separately in each of the countries (North Macedonia, Spain, and Bulgaria). The results are shown separately for primary, secondary, and special schools in each of these countries. Within each of these chapters, using the method of deduction we singled out the subjects and topics regarding specific elementary disasters - fires, earthquakes, and floods, as well as the subjects and topics through which students are trained in self-protection in the case of specific elementary disasters - fires, earthquakes, and floods.

1.2. Statistical analysis – Large Number Analysis

LNA provides important information about how to carry out the next stage of the analysis intensive examination of one or more cases. In this study, firstly, we assessed the findings. After assessing the nature of the LNA, standard assessments about the strength of parameter estimates were used to evaluate goodness of fit between the specified model and the empirical data. As in any statistical analysis, diagnostic plots may highlight suspect patterns of nonrandom variation in one or more cases——the identification of outliers. This was futher explored through the individual case-studies for each country.

1.3. Semi-structured interviews and Case studies – Small Number Analysis

With the purpose to clarify the findings from the statistical analysis we took the second step of the nested analysis which involves the intensive analysis of one or more country cases we conducted semi-structured interviews and case studies. Evidently, there is nothing particularly distinctive about the simple combination of LNA and SNA; scholars have long recognized the value of “triangulation” for descriptive and causal inference.

It is important to recall that the goal of a nested analysis is ultimately to make inferences about the unit of analysis that is shared between the two types of analysis——typically countries or country-periods.

The SNA in this study was simply used to answer those questions left open by the LNA——not because there were insufficient data to assess statistical relationships but because the nature of causal order could not be confidently inferred. Although the distinction between LNA and SNA is generally between quantitative and qualitative modes of analysis, some aspects of SNA may involve quantitative analyses at different levels of analysis.

In the following chapters you may find all the analyses described above and the conclusions that derived from those analyses.

III. CURRICULUM ANALYSIS IN PRIMARY, SECONDARY, AND SPECIAL SCHOOLS

1. Introduction to the educational system in North Macedonia, Spain, and Bulgaria

The educational system in North Macedonia is decentralized and the management of the primary and secondary schools is under the responsibility of the municipalities. The Bureau for Development of Education under jurisdiction of the Ministry of Education and Science is creating educational plans and programs for preschool, elementary, secondary, specialized education, adult education, and education for children with special needs (North Macedonia, Special Education Needs Provision within Mainstream Education, 2018).

Primary education (ISCED 1 and ISCED 2) is in duration of nine years, free of charge and compulsory for all children aged 6 to 15, with no regards to the gender, religion, and nationality. A new Law on Primary Education was adopted in 2019. Disability through a comprehensive support system taking into account the individual needs of the pupil, professionalism of the school leadership, elimination of any policy opportunities influences, establishing a system of pupil organization and participation, promoting apprenticeships and changing the way they take an internship, external measures of pupil achievement to improve the educational process (international and state checks), support pupils participation at international competitions in the field of mathematics, informatics and natural sciences, promoting the health of pupils through the so-called "tandem teacher", i.e. the teaching of physical and health education will be realized of pair of physical education teacher and primary school teacher (North Macedonia - National Reforms in School Education, 2020).

Secondary education (ISCED 3) is general secondary education (Gymnasium) in duration of four years and vocational education (Vocational Schools) in duration of two (vocational education of two years), three (vocational education for professions) or four years (vocational technical education). The secondary education is compulsory and comprises all children in the age cohort 15 to 19 years for the general secondary education, and for the age cohort 15 to 17, 18 or 19 in the VET depending on the selected track.

The educational system comprises also the children with special needs who are enrolled in the schools for special education or within the regular teaching process depending on the preferences of the students and their parents (Eurydice - Republic of North Macedonia Overview, 2018/19). There is a separate curriculum for special schools. All special high schools are vocational schools.

Higher education (ISCED 5, 6 and 7) implements under-graduate, master and doctoral studies in the higher educational institutions and institutes, which are autonomous and independent.

Educational competences in Spain are shared between the General State Administration - Ministry of Education and Vocational Training, and the authorities of the autonomous communities - Departments for Education (Eurydice - Spain Overview, 2018/19):

—the central education administration executes the general guidelines of the Government on education policy and regulates the basic elements or aspects of the system;

—regional education authorities develop the State regulations and have executive and administrative competences for managing the education system in their own territory.

Pre-primary education is up to 6 years of age. Although it is not a compulsory education stage, the second cycle is free in all publicly-funded schools (public schools and publicly-funded private schools).

Basic education is compulsory and free in publicly-funded schools. It lasts ten years and it is divided into two stages:

—Primary education, provided in primary schools. It covers six academic years, usually studied between the ages of 6 and 12.

—Compulsory secondary education, studied in secondary schools, between the ages of 12 and 16. At the end of this stage, students receive the first official certificate, the Lower Compulsory Secondary Education Certificate, which allows them to have access to upper secondary education or the world of work.

Upper secondary education is also provided in secondary schools. It lasts two academic years, usually studied between the ages of 16 and 18. It offers two possibilities: Bachillerato (general branch) and Intermediate vocational training (professional branch). The latter is also provided in vocational training integrated institutions and in national reference institutions.

The education system in Spain arranges the necessary resources for pupils with temporary or permanent special educational needs in order to achieve the objectives established within the general program for all pupils. School teaching is adapted to these pupils' needs. The schools develop the curriculum through didactic plans, which have to take into account the pupils' needs and characteristics (European Agency for special needs and Inclusive Education, 2020).

Higher education comprises university and professional studies. University education is provided in universities and Advanced vocational training is provided in the same institutions as those offering intermediate vocational training.

The pre-school and school education system in Bulgaria includes kindergartens, schools, personal development support centers, and specialized service units, and provides for education according to state educational standards (Eurydice - Bulgaria Overview, 2018/19).

Children and students with special educational needs are taught on integrated basis in schools. The Primary and Basic Schools are mainly municipal and are funded individually by uniform standard on the basis of the number of the learners enrolled in the school.

School education is mandatory from age of 7 or from age of 6, according to parents' assessment to age of 16. It provides for education and up-bringing of students according to their individual needs and in line with the requirements and expectations for a successful realization in civic society. The school is an institution in the system of pre-school and school education, which train, educate and socialize students. Schools are state, municipal, private or religious. According to the type of training, schools are non-specialized and specialized. The Vocational schools are mainly state-owned and are funded by the state budget.

The principles of autonomy of state and municipal high schools, secondary, and specialized schools are supplemented, including the right to conclude agreements with state higher schools on joint training in subjects and/or modules for the acquisition of specialized

and/or vocational training in second high school stage, as well as the way to settle their financial matters (Bulgaria - National Reforms in School Education, 2020).

In 2002, changes were introduced in the Law regulating the integrated training of children and pupils with special educational needs in pre-schools, general education schools and vocational schools. Law on Integration of People with Disabilities regulates the Ministry of Education and Science's commitments to provide 'integrated training' for learners with disabilities in pre-school and school, as well as arrangements for secondary schools related to the admission and training of learners with disabilities (European Agency for special needs and Inclusive Education, 2018).

The higher education governance is performed at a state and institutional level. The state is responsible for the development and the implementation of a long-term national policy and establishment of conditions, which guarantee the academic autonomy of higher education institutions and the quality of education.

2. Overview of the curriculum subjects and content related to natural disasters and other accidents in primary schools in North Macedonia, Spain, and Bulgaria

In North Macedonia, primary schools curricula content for second grade, fourth grade, fifth grade, sixth grade, seventh grade, eighth grade and ninth grade include several subjects that contain topics and activities regarding natural disasters and other accidents. The content of these subjects basically covers the reasons for occurrence, basic characteristics, and consequences from the occurrence.

In Spain, the topics related to natural disasters included in the primary school's subjects contain basic features, prevention, and protection measures, as well as response protocols. All three cycles of primary education in accordance with the Royal Decree, include in the subject of **Natural Sciences** the basic knowledge of First Aid techniques with simulated and real actions. The same knowledge is included, along with measures for prevention of domestic accidents, in the subject of **Social and Civic Values**, also in all three cycles of primary education.

In Bulgaria, in primary schools, the content of the curriculum includes the basic ideas, main characteristics, consequences, protection and rescue measures (before, during, and after the occurrence); equipment used for protection and rescue; practical prevention procedures and measures for individual and collective disaster response.

2.1. Curriculum subjects and content related to fires

In North Macedonia, the issue of fires has been addressed in second grade within the school subject **Society,** where the topic "My home" contains a lesson "Elementary disaster prevention" through which pupils, among other, get familiarized with the terms of fires.

There is also an optional subject **Life Skills**, which can be chosen in any grade from 6th to 9th, and within which, through the topic "Safety and Prevention" pupils get familiarized with the terms of fires and other natural disasters, as well as with the basic skills for prevention of natural disasters.

In Spain, the knowledge related to fires could be gained only within the topics that contain basic features, prevention, protection, and response, generally for all natural disasters within the subject Natural Sciences and Social and Civic Values, which includes the basic knowledge of First Aid techniques with simulated and real actions, and measures for prevention of domestic accidents.

In Bulgaria, there are no specific teaching topics related to fires, except the topics that contain the basic ideas, main characteristics, and consequences in general for all natural disasters.

2.2. Curriculum subjects and content related to earthquakes

In North Macedonia, there are several subjects that address the issue of earthquakes as a natural disaster. In second grade within the school subject **Society** and the topic "My home" pupils, among other, get familiarized with the terms of earthquakes through a lesson "Elementary disaster prevention". In fourth grade, one of the learning objectives of the school subject **Science** is: the pupils to become fully aware of how the human actions impact the environment, and to get familiarized with the terms pollution, world's ecological disasters and oil spills, and also the terms earthquakes, volcanic eruptions, and tsunamis. In sixth grade, within the school subject **Geography**, there is a topic "Earth's lithosphere" that broadens pupils' knowledge concerning volcanos, earthquakes, and tsunamis. There is also an optional subject **Life Skills**, which can be chosen in any grade from 6th to 9th, within which the topic "Safety and Prevention" provides the pupils with knowledge on the terms of earthquakes and other natural disasters, as well as with the basic skills for natural disasters prevention.

In Spain, there are no specific teaching topics related to earthquakes, except the topics that contain basic features, prevention, protection, and response, in general for all natural disasters.

In Bulgaria, there are no specific teaching topics related to earthquakes, only the topics that contain the basic ideas, main characteristics, and consequences in general for all natural disasters.

2.3. Curriculum subjects and content related to floods

In North Macedonia, the issue of floods just like the issue of fires and earthquakes has been addressed in the second grade within the school subject **Society**, topic "My home", where through the lesson "Elementary disaster prevention" pupils among other, get familiarized with the terms of floods. The optional school subject **Life Skills**, which can be chosen in any grade from 6th to 9th, and the topic "Safety and Prevention" provides pupils with knowledge on the terms of floods and other natural disasters, as well as basic skills for prevention of natural disasters.

In Spain, there are no specific teaching topics related to floods, except the topics that contain basic features, prevention, protection, and response for all natural disasters.

In Bulgaria, there are no specific teaching topics related to floods, except the topics that contain the basic ideas, main characteristics, and consequences for all natural disasters.

3. Overview of the teaching topics for practicing self-protection in primary schools in North Macedonia, Spain, and Bulgaria

In North Macedonia, although the curricula for the most of the grades in primary schools include subjects that contain topics and activities regarding natural disasters, there is no school subject through which the pupils get familiarized with the protection and rescue measures as preventative and operative measures (before, during, and after danger occurrence) or with the means and equipment used during protection and rescue for personal and collective protection during natural disasters. However, there are specific topics that include some other kind of self-protection. For example, the goal of the topic "Household electrical appliances" is getting familiarized about dangers at home, where students also learn how to protect themselves from electric shocks and fires at home. The following topic is also included: Traffic safety rules. In natural sciences there is a topic "Health care" the goal of which is recognition of foods harmful to health. Furthermore, in Chemistry there is a topic: Chemistry laboratory safety rules and Chemical hazard symbols.

Within the Life skills education there is a topic: Safe behavior in the environment, the aim of which is risk recognition and use of the services of protection and security institutions.

In extracurricular activities there is a legal obligation for organizing a Simulation drill for practicing protection and rescue. It is planned and determined in the yearly school program and it includes all students and staff. In extracurricular activities there is a First aid match and Fighting Quiz match.

In Spain, there are no teaching topics in primary schools that contain training in self-protection against disasters or natural catastrophes. The Royal Decree 126/2014 of 28 February includes only content of first aid and road education, and prevention of traffic accidents for all primary school students in Spain. Some concepts of injury prevention and small accidents mainly derive from the practice of sports. Physical education in all three cycles of primary education also includes first aid for sports-related injuries. However, the schools' self-protection plans include at least one fire drill per year. The protocols for action against fires, floods, seismic risks, and tsunamis are included in this drill.

Madrid, through the Decree 89/2014 of July 24th, has been the first autonomous community in Spain which incorporates content such as risk prevention, safety care, action in emergencies or self-protection in the face of emergencies or disasters. It is expected that the rest of the communities will progressively incorporate these contents into the primary school curriculum.

In Bulgaria, according to the Law on Pre-School and School Education from August 1, 2016 and the Disaster Protection Law from September 18, 2018, in the system of pre-school and school education, the education program regarding disaster protection training and first aid must be conducted. Disaster protection training in the program of school education shall be in accordance with the existing educational standards and shall be expanded and used to include content integrated into the subjects. The lectures and trainings are performed by the Ministry of Education and Science and the Ministry of Interior (Police and Fire Safety and Civil protection structures). Hence, in the curriculum of primary schools in Bulgaria the following is stipulated:

—from 1st to 4th grade - **4 lessons on how to react in case of emergencies, disasters, fires, earthquakes, as well as first medical aid, and the topic Traffic Safety;**

—from 5th to 7th grade - **5 lessons on how to react in case of emergencies, disasters, fires, earthquakes, as well as first medical aid, andthe topic Traffic Safety.**

Topics for practicing self-protection are also included in the curriculum of the **Health Educationarea - 4 or 5 lessons on how to react in case of emergencies, disasters, fires, earthquakes,** as well as first medical aid, and the topic Traffic Safety.

In the curriculum, there are also pledged extracurricular activities. Each year, the Directorate-General Fire Safety and Civil Protection Bulgaria organizes national student competitions for youth fire brigades - Young Firefighter and Young Rescuer, as well as a national children's drawing competition **''I saw the disaster with my eyes''.** Children from all type of schools, from all over the country take part in these activities.

Outside the curriculum, there are training centres for increasing the populations preparedness for reaction in case of floods, where 5-day trainings (theoretical and practical) are planned for children from 3rd to 5th grade. In addition, by act of the Ministry of Interior, the schools are obliged to conduct a simulation evacuation twice a year - on the start of the school year and the second time at the discretion of the school.

3.1. Teaching topics for practicing self-protection in fires

In North Macedonia, there are no specific teaching topics for practicing self-protection in case of fire as a natural disaster; however, there is a topic "Household electrical appliances", where pupils learn how to protect themselves from electric shocks and fires at home. Within the topic Safe behavior in the environment, pupils learn how to recognize the risks and how to use the services of protection and security institutions. Primary schools also have a legal obligation for organizing a Simulation drill for practicing protection and rescue, which is also one of the appropriate ways for gaining knowledge regarding self-protection in fires.

In Spain, self-protection in fires is learned through the yearly fire drill that includes specific protocols.

In Bulgaria, teaching topics for practicing self-protection are included from 1st to 4th grade (four lessons on how to react in case of disaster, including fires) and from 5th to 7th grade (five lessons on how to react in case of disaster, including fires). The simulation evacuation is organized twice a year (on the start and at the end of the school year).

3.2. Teaching topics for practicing self-protection in earthquakes

In North Macedonia, there are no specific teaching topics for practicing self-protection in earthquakes. The knowledge of self-protection in earthquakes could be gained only within the Life skills education through the topic Safe behavior in the environment, where pupils learn how to use the services of protection and security institutions, as well as through the abovementioned Simulation drill for practicing protection and rescue which is a legal obligation for primary schools.

In Spain, self-protection in earthquakes is learned through the abovementioned yearly drill that also includes protocols for actions against seismic risks.

In Bulgaria, teaching topics for practicing self-protection are included from 1st to 4th grade (four lessons on how to react in case of disaster, including earthquakes) and from 5th to 7th grade (five lessons on how to react in case of disaster, including earthquakes). The self-protection in earthquakes is also learned through the simulation evacuation which is organized twice a year.

3.3. Teaching topics for practicing self-protection in floods

In North Macedonia, there are no specific teaching topics for practicing self-protection in floods, and the knowledge of self-protection in floods, the same as in earthquakes, could be gained only within the Life skills education through the topic Safe behavior in the environment, where pupils learn how to use the services of protection and security institutions, as well as through the Simulation drill for practicing protection and rescue.

In Spain, self-protection in floods is learned through the yearly drill that includes protocols for actions against floods, as well.

In Bulgaria, there are no specific teaching topics related to self-protection in floods, and self-protection in floods is learned through the abovementioned lessons where students learn how to react in case of emergencies and disasters, as well as through the abovementioned simulation evacuation. There are also training centres for increasing the populations' preparedness for reaction in case of flood, where 5-day trainings (theoretical and practical) are planned for children from 3rd to 5th grade.

4. Overview of the curriculum subjects and content related to natural disasters and other accidents in secondary schools in North Macedonia, Spain, and Bulgaria

In North Macedonia, within the curriculum for high schools, there are several topics regarding the basic features of disasters, prevention, and protection measures, which are covered in the following compulsory and elective subjects:

Geology, mining, and metallurgy

Students identify dangers of working in a mine and learn how to respond appropriately to dangers through simulating dangerous situations and ways of reacting in such situations; they also demonstrate extinguishing a small fire in a mine; and they learn how to use a fire extinguisher according to the rules, and how to read and interpret the meaning of danger warning signs. Through simulation of a workplace injury, students demonstrate responding and using the first aid means.

Geography - magmatism, seismology

This subject gives the students basic knowledge regarding the causes of volcanoes, types of volcanoes according to the mode of operation, types of volcanic eruptions, and volcanic elements. Students also get familiarized with the causes of earthquakes, the elements of an earthquake, as well as the consequences of an earthquake.

Sustainable buildings and energy efficiency is a subject that analyzes and interprets the degree of fire resistance of constructions; explains how certain building materials react at high temperatures; explains the technical characteristics of fire extinguishers; students also

learn how to handle fire extinguishers properly through practical exercises in which they have the opportunity to extinguish a fire with fire extinguishers.

Power plants - first aid for injuries at work - elaborates first aid procedures according to a given situation; defines what should a person do when providing first aid for an electric shock; elaborates examples of first aid; students also learn how to communicate properly with the first aid service via a phone call.

Traffic Engineering, Transport, and Logistics - traffic culture

The subject investigates the level of traffic culture in the environment as an important factor in reducing traffic accidents.

Plant protection contains the following topics:

—measures for protection of plants against diseases, pests, and weeds;

—procedures for application of pesticides and other chemicals;

—measures for protection of health and the environment against pollution.

Health care profesional - Practical teaching

Infectious Diseases and Prevention

—classification of infectious diseases;

—application of preventive measures (isolation, reporting infectious diseases, disinfection).

Help with various injuries is a subject through which students learn how to recognize types of injuries, how to conduct psychophysical preparation of patients, how to prepare the necessary material for plaster immobilization, perform prescribed therapy, nutrition, and general care for patients, and timely observation of changes in the patients.

Viruses

—differentiation of viruses, recognition and explaination of symptoms;

—elaboration of measures for epidemiological protection.

Gas technique - Safety working with fuels gas explains the legislation on safe working with CO2 and CO, and the methods for detecting and removing defects from the gas installation; providing first aid in case of an accident and action in case of an emergency.

In addition, through the classes for practical work, depending on the vocation, students learn how to behave in the workplace; how to get familiarized with the regulations on occupational safety and health; how to use protective and safety equipment; and how to maintain personal and workplace hygiene.

In Spain, in the basic secondary school curriculum, dispersed elements, mainly of a preventive nature, are included in the contents of the following subjects:

—**Geology** (1st, and 3rd year of secondary school) - (2nd year of high school): - Students learn about the main natural risks, evaluation of the seismic risk, and learn how to use the prevention measures. Students also get familiarized with areas where earthquakes are more frequent and of greater magnitude, they assess the seismic and volcanic risk, where it is appropriate, in the area where they live. They also learn the values of the prevention campaigns and self-protection measures.

—**Earth and environmental sciences** (2nd year of high school): Students get familiarized with the methods of predicting and preventing geological risks and relate geological risks with the damage they produce.

In Bulgaria, the content of the curriculum related to natural disasters and other accidents in secondary schools is included in the following subjects: **Geography and economics**, **Man and society**, **Man and nature**, **English**. The textbooks have sections or separate lessons for different natural disasters, ways of protection and self-defence, rules of conduct in the context of a natural disaster, and health advice for first aiders. During the class, the topics on Civil Protection are taught throughout the year, and are distributed according to the schedule for the first and second term. Each topic contains the following sub-topics: the nature and characteristics of a natural disaster or accident, the causes of occurrence, initial and subsequent reactions - individual and collective protection and rescue measures, possible consequences and measures to deal with them. Specific first aid measures are also being worked on.

4.1. Curriculum subjects and content related to fires

In North Macedonia, the question of fires has been addressed in the subject Sustainable buildings and energy efficiency, which explains the technical characteristics of fire extinguishers and students learn how to handle fire extinguishers properly through practical exercises in which they have the opportunity to extinguish fire with fire extinguishers. Within Geology, mining, and metallurgy, students demonstrate extinguishing a small fire in a mine and learn how to use a fire extinguisher according to the rules.

In Spain, there are no specific teaching topics related to fires. However, the subject Geology provides students with knowledge, among other, regarding the main natural risks and regarding values of the prevention campaigns and self-protection measures.

In Bulgaria, students acquire knowledge related to fires through the subjects Geography and economics, Man and society, Man and nature, and English, where the textbooks have sections or separate lessons on different natural disasters. During classes, topics on Civil Protection are taught throughout the year and each topic contains the sub-topics regarding the nature and characteristics of a natural disaster or accident, the causes of occurrence, etc.

4.2. Curriculum subjects and content related to earthquakes

In North Macedonia, there are teaching topics related to earthquakes within the subject Geography - magmatism and seismology where students get familiarized with the causes of earthquakes, the elements of earthquakes, as well as the consequences of earthquakes.

In Spain, students acquire knowledge related to earthquakes within the Geology where they evaluate seismic risk and learn where earthquakes originate from and which effects earthquakes generate. Within the subject Earth and environmental sciences, students also get familiarized with the methods of predicting and preventing geological risks and related geological risks with the damage they produce.

In Bulgaria, students also acquire knowledge related to earthquakes through the abovementioned subjects and textbooks that contain sections or separate lessons on different

natural disasters, as well as through the topics on Civil Protection and the sub-topics regarding the nature and characteristics of a natural disaster or accident, the causes of occurrence, etc.

4.3. Curriculum subjects and content related to floods

In North Macedonia, there are no specific teaching topics related to floods, only the sections or separate lessons that contain the basic features of natural disasters.

In Spain, there are no specific topics related to floods. However, as mentioned above, through the topics of Geology, students gain knowledge about the basic natural risks and the values of prevention campaigns and self-protection measures.

In Bulgaria, regarding floods, students also acquire knowledge through the abovementioned subjects and textbooks, as well as through the topics on Civil Protection and the sub-topics regarding the nature and characteristics of a natural disaster or accident, and the causes of occurrence.

5. Overview of the teaching topics for practicing self-protection in secondary schools in North Macedonia, Spain, and Bulgaria

In North Macedonia, some aspects regarding self-protection in case of disasters are part of the following compulsory and elective subjects within the curriculum for high schools:

- Profession - Geology, mining, and metallurgy - subjects: **General geology, practical work; Geography - magmatism, seismology;**
- Profession - Civil Engineering and Geodesy - subject: **Sustainable buildings and energy efficiency;**
- Profession - Agriculture, Fisheries, and Veterinary - subject: **Power plants - first aid for injuries at work;**
- Profession - Traffic Engineering, Transport, and Logistics - subject: **Traffic culture;**
- Profession - Electrical Engineering - subject **Power plants - first aid for injuries at work;**
- Profession - Mechanical Engineering - subject **Gas technique - Safety working with fuels gas.**

The content related to self-protection is also part of the project activities as a special area of the curriculum. The function of the project activities is to meet the individual interests and desires of students in particular areas. Project activities are different from the teaching subjects and students choose one of those activities according to their needs and interests. The project activities are implemented in the following areas:

- Sports activities: Mountaineering; Tennis; Fitness; Cycling.
- Culture of healthy living: Health promotion**;** Improving the inclusion of people with disabilities: Assisting children/students with disabilities (including assisting into disasters).

In addition, on the classes for practical work, depending on the vocation, students learn how to behave in the workplace; how to learn the regulations on occupational safety and health; how to use protective and safety equipment; how to maintain personal and workplace hygiene.

In Spain, within the abovementioned subject **Geology,** among other, students also learn the prevention measures that should be adopted in a situation of natural risks. Within the subject

Earth and environmental sciences, students learn the methods of prediction and prevention of geological risks.

Physical education (1st, 2nd and 4th year of secondary school) - students learn how to adopt the preventive and safety measures appropriate for the activities developed during the cycle, and learn how to take special care with activities that are carried out in a non-stable environment. They also get familiarized with the protocols in the event of injuries, accidents or most frequent emergencies emerging during the practice of physical sports activities.

The schools' self-protection plans include at least one fire drill per year. The drill includes protocols for actions against fires, floods, seismic risks, tsunamis. Outside the curriculum, the centers organize one-day activities in coordination with firefighters, civil protection, and local police on related topics.

In Bulgaria, on the basis of secondary education curriculum, the following is encountered:

—from 8th to 10th grade - **5 lessons on how to react in case of emergencies, disasters, fires, earthquakes, as well as first medical aid, and the topic Traffic Safety.**

—from 10th to 12th grade - **3 lessons on how to react in case of emergencies, disasters, fires, earthquakes, as well as first medical aid, and the topic Traffic Safety.**

Lecturers of the lessons can be the class teacher, as well asrepresentatives from Fire Safety and
Civil Protection and Police structures. This project has been funded with support from the European Commission.

In the curriculum there are also pledged extracurricular activities. Every year, the Directorate-General Fire Safety and Civil Protection Bulgaria, organizes national students' competitions for youth fire brigades - Young Firefighter and Young Rescuer, as well as a national children's drawing competition **"I saw the disaster with my eyes".** Children from all type of schools from all over the country take part in the activities.

Outside the curriculum, there are training centres for increasing the population's preparedness for reaction in a case of flood. By act of the Ministry of Interior, the schools are obliged to conduct a simulation evacuation twice a year - on the start of the school year and the second time at the discretion of the school.

5.1. Teaching topics for practicing self-protection in fires

In North Macedonia, students get familiarized with the knowledge for practicing self-protection in fires through the subject Sustainable buildings and energy efficiency, where they learn how to handle fire extinguishers properly through practical exercises in which they have the opportunity to extinguish a fire with fire extinguishers. Through the subject General geology, practical work, students demonstrate extinguishing a small fire in a mine and they also learn how to use a fire extinguisher according to the rules. In addition, on the classes for practical work and depending on the vocation, students learn some aspects of self-protection such as how to use protective and safety equipment.

In Spain, self-protection in fires is learned through at least one fire drill per year, organized according to schools' self-protection plans. There are also other one-day activities that centers organize in coordination with firefighters.

In Bulgaria, teaching topics for practicing self-protection are included from 8th to 10th grade (five lessons on how to react in case of disaster, including fires) and from 10th to 12th grade (three lessons on how to react in case of disaster, including fires). Students also learn about self-protection through the existing extracurricular activities.

5.2. Teaching topics for practicing self-protection in earthquakes

In North Macedonia, the issue of earthquakes has been addressed in the subject Geography - magmatism, seismology. However, through that subject students get familiarized only with the causes of earthquakes, the elements of earthquakes, and the consequences of earthquakes. On the classes for practical work and depending on the vocation, students learn some aspects of self-protection such as how to use protective and safety equipment.

In Spain, self-protection in earthquakes is learned through the subjects Geology and Earth and environmental sciences, as well as through the abovementioned drill, which among other protocols, also includes the protocols for actions against seismic risks.

In Bulgaria, teaching topics for practicing self-protection are included from 8th to 10th grade (five lessons on how to react in case of disaster, including earthquakes) and from 10th to 12th grade (three lessons on how to react in case of disaster, including earthquakes). Self-protection is also learned through the existing extracurricular activities.

5.3. Teaching topics for practicing self-protection in floods

In North Macedonia, there are no specific teaching topics for practicing self-protection in floods, and consequently some aspects of the knowledge regarding self-protection in floods students could only gain on the classes for practical work depending on the vocation, where they learn how to use protective and safety equipment.

In Spain, self-protection in floods is learned through a yearly drill which also includes the protocols for actions against floods.

In Bulgaria, there are no specific teaching topics related to self-protection in floods, but outside the curriculum, there are training centres for increasing the populations' preparedness for reaction in a case of floods.

6. Overview of the curriculum subjects and content related to natural disasters and other accidents in special schools in North Macedonia, Spain, and Bulgaria

In North Macedonia, special high schools are vocational, and the programs are focused on mechanical technicians, textile technicians, physiotherapists, assistants in horticulture, assistant bookmakers, and assistant locksmiths. The contents related to different kind of danger are included in the classes of practical work - **workplace safety**. On these classes, students apply collective protective measures; they learn about possible sources of danger in the factories; students also learn how to use personal protective equipment and the necessary security measures for personal protection; they learn how to adhere to rules of conduct in the workplace; they apply ways of storing waste and rules for orderly maintenance in the workplace.

Class hour is a lesson that is held once a week and the topics are based on different thematic areas. Each teacher within the intended content and in accordance with the Program, creates the content of these lessons according to the needs of students. Some of the contents are related to child safety in traffic; police in the service of the citizens; violence as a negative social phenomenon; prevention and protection of children from narcotic drugs and alcohol; safe use of the Internet and social networks; prevention and protection of children from human trafficking; fire protection; protection against technical and technological hazards, and natural disasters.

The schools' self-protection plans include at least one fire drill per year. Fire action protocols and earthquake action protocols are included in these yearly drills.

Outside the curriculum, all special high schools organize activities in coordination with the Red Cross, health organizations, and NGOs on related topics.

In Spain, there are no separate curricula for special schools. The regular school program is adapted to the needs of pupils and students with disabilities. The education system arranges the necessary resources for pupils with temporary or permanent special educational needs in order to achieve the objectives established within the general program for all pupils.

In Bulgaria, the abovementioned subjects and lessons in the curriculum are applied equally for the pupils and students with disabilities. According to the Law on the Integration of People with Disabilities, the Ministry of Education and Science is obliged to provide 'integrated training' for children and pupils with disabilities in pre-school and school, as well as arrangements for secondary schools related to the admission and training of learners with disabilities.

6.1. Curriculum subjects and content related to fires

In North Macedonia, the fire protection in special schools is learned in two ways:

- within the abovementioned Class hour where Fire protection is one of the different thematic areas;
- within the yearly Fire drill where Fire action protocols are part of the drill.

In Spain, students with disabilities just like other students, get familiarized with the question of fires through the contents of the subject Geology where they learn, among other, the main natural risks and the values of the prevention campaigns and self-protection measures.

In Bulgaria, students with disabilities acquire the knowledge related to fires through the textbooks for Geography and economics, Man and society, Man and nature, and English, which have sections or separate lessons on different natural disasters, ways of protection and self-defence, rules of conduct in the context of a natural disaster, and health advice for first aiders.

6.2. Curriculum subjects and content related to earthquakes

In North Macedonia, the earthquakes protection in special schools is learned through Earthquake action protocols that are part of the yearly Self-protection drill.

In Spain, students with disabilities also acquire the knowledge related to earthquakes within the subject Geology, as well as through the subject Earth and environmental sciences.

In Bulgaria, students with disabilities also gain the knowledge related to earthquakes through Geography and economics, Man and society, Man and nature, and English, and with the textbooks that contain sections or separate lessons on different natural disasters, ways of protection and self-defence, rules of conduct in the context of a natural disaster, and health advice for first aiders.

6.3. Curriculum subjects and content related to floods

In North Macedonia, there are no specific teaching topics related to floods, only the sections or separate lessons that contain the basic features of natural disasters.

In Spain, there are no specific teaching topics related to floods;however, the subject Geology provides students with knowledge, among other, regarding the main natural risks.

In Bulgaria, regarding floods, students also acquire the knowledge through the textbooks for Geography and economics, Man and society, Man and nature, and English, and the sections or separate lessons on different natural disasters, ways of protection and self-defence, rules of conduct in the context of a natural disaster, and health advice for first aiders.

7. Conclusions and Recommendations

In primary schools in North Macedonia, in most of the grades, there are subjects that contain topics regarding natural disasters and other accidents. The content basically covers the reasons for the natural occurrence, basic characteristics, and consequences from the occurrence, but there are no topics in which the pupils get familiarized with the protective measures or with the means and equipment used during protection. Although there are topics that include some kind of self-protection, as topics regarding household electrical appliances, traffic safety and health care, chemistry laboratory safety, etc., there are no specific teaching topics for practicing self-protection in fires, floods or earthquakes as natural disasters. Hence, the knowledge of self-protection in fires, earthquakes, and floods could be gained only within the Life skills education, through the topic Safe behavior in the environment, where pupils learn how to recognize the risks and how to use the services of protection and security institutions, as well as through the Simulation drill for practicing protection and rescue, which is a legal obligation for the primary schools.

In primary schools in Spain, the topics related to natural disasters contain basic features, prevention, and protection measures, response protocols, first aid, road education, as well as prevention of traffic accidents. There are no specific teaching topics related to fires, earthquakes or floods, except the topics that contain basic features, prevention, protection, and response, generally for all natural disasters. Madrid is the only autonomous community in Spain which incorporates content such as risk prevention, safety care, action in emergencies or self-protection in the face of emergencies or disasters into the primary school curriculum. However, it is expected that the rest of the communities will progressively incorporate these contents in the curriculum. The fires, earthquakes, and floods protection is learned through at least one fire drill per year that includes protocols for actions against fires, floods, and seismic risks.

In primary schools in Bulgaria, the content of the curriculum includes the basic ideas, main characteristics, consequences, protection and rescue measures. Several lessons are

stipulated in each of the grades in primary schools where pupils learn how to react in case of emergencies, disasters, fires, earthquakes. The lectures and trainings are performed by the Ministry of Education and Science and the Ministry of Interior (Police and Fire Safety and Civil protection structures). There are also extracurricular activities, children's drawing competitions, and training centers for increasing the population's preparedness for reaction in case of floods, where 5-day trainings (theoretical and practical) are planned for children from 3rd to 5th grade. Simulation evacuation is organized twice a year.

In this regard, we recommend improvement of the formal education system in each of the countries regarding protection and self-protection, particularly through expanding the current curriculum with subjects and topics related to trainings in situations of disasters, separately for fires, earthquakes, and floods. Thus, the countries will empower inclusive access and non-discriminatory participation of children and pupils in disaster prevention, preparedness, and response.

In secondary schools in North Macedonia, within the framework of the curricula, there are several topics regarding basic features of different disasters, prevention, and protection from disasters. There are teaching topics related to fires and self-protection in fires within the subject Sustainable buildings and energy efficiency, as well as within the subject General geology, practical work. Teaching topics related to earthquakes and self-protection in earthquakes is included within the subject Geography - magmatism and seismology. However, there are no teaching topics related to floods and self-protection in case of floods, and students gain some aspects of the knowledge regarding self-protection in floods, as well as self-protection in fires and earthquakes, on the classes for practical work depending on the vocation, and learn how to use protective and safety equipment. There are also contents related to self-protection in case of disasters as part of project activities.

In secondary schools in Spain, there are dispersed elements mainly of a preventive nature that are included among the contents of several subjects. Within the subject Geology, students evaluate the seismic risk, learn where earthquakes originate from, and which effects they generate. Within the subject Earth and environmental sciences, students learn the methods of prediction and prevention of geological risks. There are several teaching topics for practicing protection from natural disasters, but the self-protection is mainly learned through at least one fire drill per year organized according to schools' self-protection plans and which includes the protocols for action against fires, seismic risks and floods. There are also other one-day activities that centers organize in coordination with firefighters.

In secondary schools in Bulgaria, the content of the curriculum related to natural disasters is included in several subjects and the textbooks have sections or separate lessons on different natural disasters. Through several lessons, students learn how to react in case of emergencies, disasters, fires, earthquakes. Lecturers of the lessons could be the class teacher, as well as representatives from Fire Safety and Civil Protection and Police structures. This project has been funded with support from the European Commission. There are also extracurricular activities such as in the primary schools. The topics for practicing self-protection include self-protection in fires and earthquakes, as well. On the other hand, there are no specific teaching topics related to self-protection in floods, but outside the curriculum, there are training centers for increasing the population's preparedness for reaction in case of floods.

The general impression about each of the three countries regarding teaching topics, its content, protection and self-protection, is that in secondary schools, as in primary schools, efforts are being made to provide lessons through which the students will acquire the knowledge related to disasters and self-protection. Different extracurricular activities as drills, competitions, evacuations, and other projects activities, are also conducted. However, we identified the same gaps as in the primary schools, and we recognized the need of improvement of the formal education system in secondary schools. Hence, we recommend expanding thecurricula with compulsory subjects providing teaching and learning of strict and precise procedures for protection and self-protection in case of fires, earthquakes, and floods as natural disasters. We suggest providing inclusive access and non-discriminatory participation of youth in disaster prevention, preparedness, and response.

Regarding persons with disabilities, in North Macedonia there are separate curricula for special high schools according to which, among other topics and activities, students learn how to apply collective protective measures and how to use personal protective equipment and the necessary security measures for personal protection. Fire and earthquake protection in special schools is learned within the lesson Class hour, based on different thematic areas, as well as within the yearly Fire drill where the Fire action protocols, and the Earthquake action protocols are part of the drill.

On the other hand, in Spain and Bulgaria, there are no separate curricula for students with disabilities, and consequently these students get familiarized with the different kinds of disasters and self-protection in situations of disasters through the current subjects within the curricula. The regular school program is adapted to the needs of students with disabilities in order to achieve the objectives established within the general program for all students.

In this regard, just like in the secondary schools, we recommend improvement of the formal education system regarding self-protection, by expanding the curricula with compulsory subjects that provide teaching and learning of the procedures for self-protection particularly in case of fires, earthquakes, and floods. We suggest providing inclusive access and non-discriminatory participation of pupils and students with disabilities in disaster prevention, preparedness, and response in accordance with their abilities and special needs.

IV STATISTICAL ANALYSIS OF THE INQUIRY WITH PRIMARY, SECONDARY, AND UNIVERSITY STUDENTS WITH AND WITHOUT DISABILITIES

Quantitative research is a type of research in which the researchers decide specifically what to study, ask concrete and very narrow questions, collect quantifiable data from the respondents (generally a large number of them). Subsequently, these numbers are analyzed using statistics. The inquiry is done in an unbiased manner (Johnson&Onwuegbuzie, 2004). The questions of interest defined and posed within this research questionnaire were measurable as this is one of the prerequisites of the quantitative research methodology. The gathered numerical data were subjected to statistical analysis.

1. Results from questionnaires from North Macedonia, Bulgaria, and Spain

One part of our research included a quantitative research method (questionnaire). This questionnaire has been made in order to get an insight in the level of knowledge on the crisis management system in the institution, to get an insight in the preparedness for reaction in case of catastrophe and the need to take measures for improvement of the preparedness for crisis management. We had a total number of 19 questions, 3 of them open-ended, other 16 close-ended; the first 6 questions were in line with the general information about the participants, other refer to the specific topic of our research.

More specifically, we conducted a questionnaire with 36 people with disabilities (10 visually impaired, 14 hearing impaired, 10 with intellectual disability and 2 physically disabled), and with 54 persons without disabilities (students from primary and secondary mainstream schools).

Results were obtained in 5 areas:

1. General information about participants (respondents);
2. Knowledge of the protection and rescue system; training so far in this area;
3. Participation in natural disasters;
4. Knowledge of alternative exits in the face of natural disasters and participation in the preparation of evacuation plans;
5. Using IT tools for learning about natural disasters.

1.1. General information about participants (respondents):

As shown in Figure 4, in North Macedonia 58,9% (53) of the respondents are persons without disabilities, while 41,1% (37) are persons with disabilities:

- 2 respondents or 2.2% are physically disabled;
- 11 respondents or 12.2% are intellectually disabled;
- 14 respondents or 15.6% are hearing impaired;
- 10 respondents or 11.1% are visually impaired.

The sample from Bulgaria consisted of 58,5% (20) respondents]without disabilities, while 41,2% (14) are persons with hearing impairments. In Spain, 85% (17) of the respondents are persons without disabilities and 15% (3) are persons with disabilities:

- 1 respondent or 5% are physically disabled;
- 2 respondents or 10% are visually impaired.

For the PREDICT Project, it was of utmost importance to discover the level of knowledge that students from primary and secondary schools, as well as persons (students) with disabilities have in relation to the protection and rescue system. Via the answers, especially from persons with disabilities, the level of their knowledge related to the topic was discovered, and accessible ways to increase their knowledge for protection and rescue system were defined.

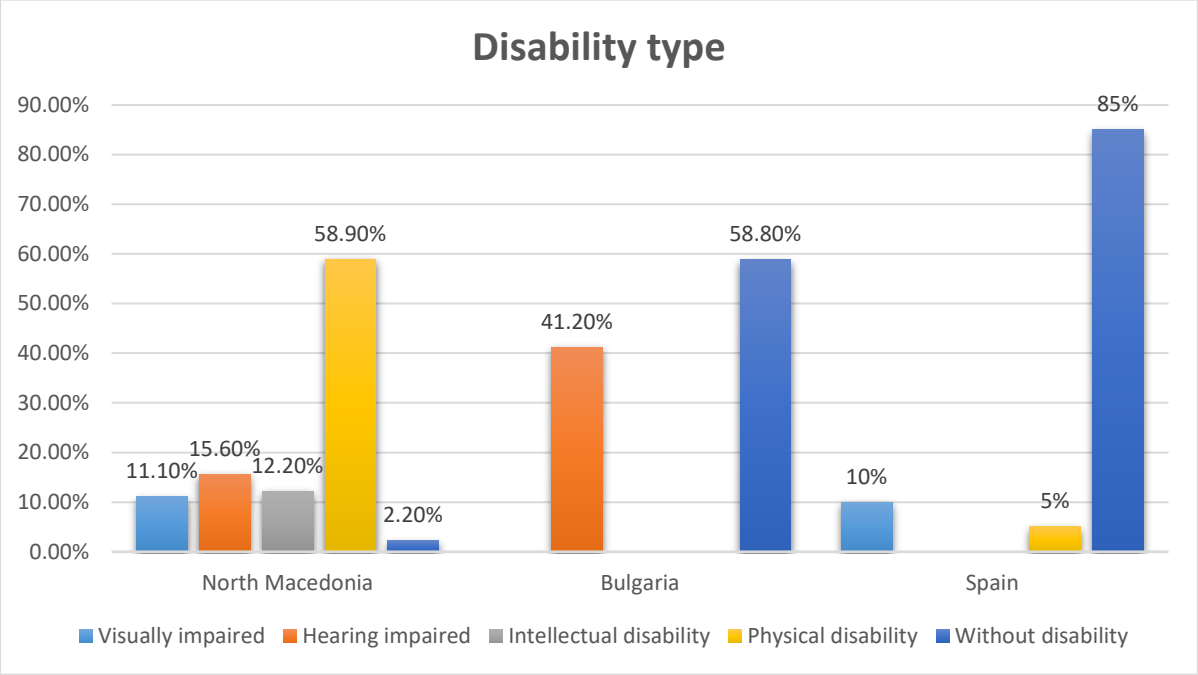

Figure 4. Type of special needs in North Macedonia, Bulgaria, and Spain

On figure number 5 it can be noticed that in North Macedonia 88.9% of the respondents or 80 are at the age from 10 to 20, other 11.1% or 10 respondents are aged from 21 to 30. In Bulgaria 79.47% of the respondents or 27 are aged from 10 to 20, other 20.6 % or 7 respondents are at the age from 21 to 30, while in Spain 90% of the respondents or 18 are aged from 10 to 20, other 10% or 2 respondents are aged from 21 to 30.

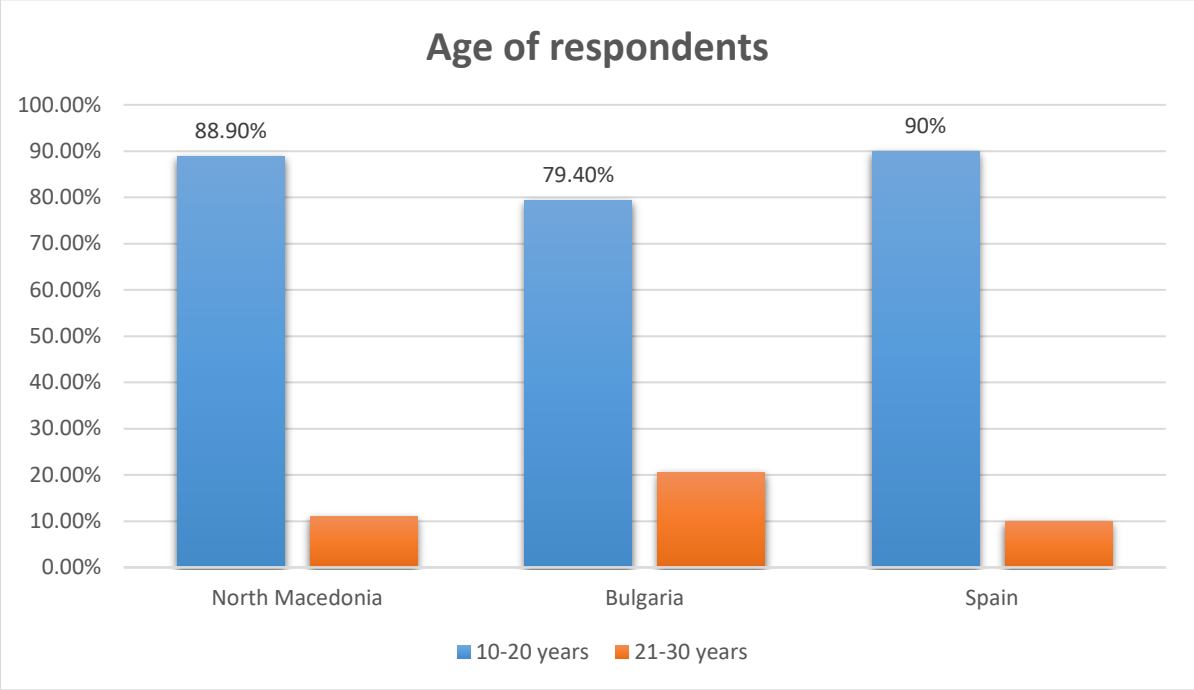

Figure 5. Age of participants in North Macedonia, Bulgaria, and Spain

Regarding the gender of respondents, as shown on figure number 6, in North Macedonia 47.8% or 43 respondents are female, while the other 47 or 52.2% are male. In Bulgaria 64.7% or 22 respondents are female while 12 or 35.3% are male. In Spain 65% or 13 respondents are female and the other 7 or 35% are male.

Gender equality is observed in the research and we have almost the same distribution of female and male respondents.

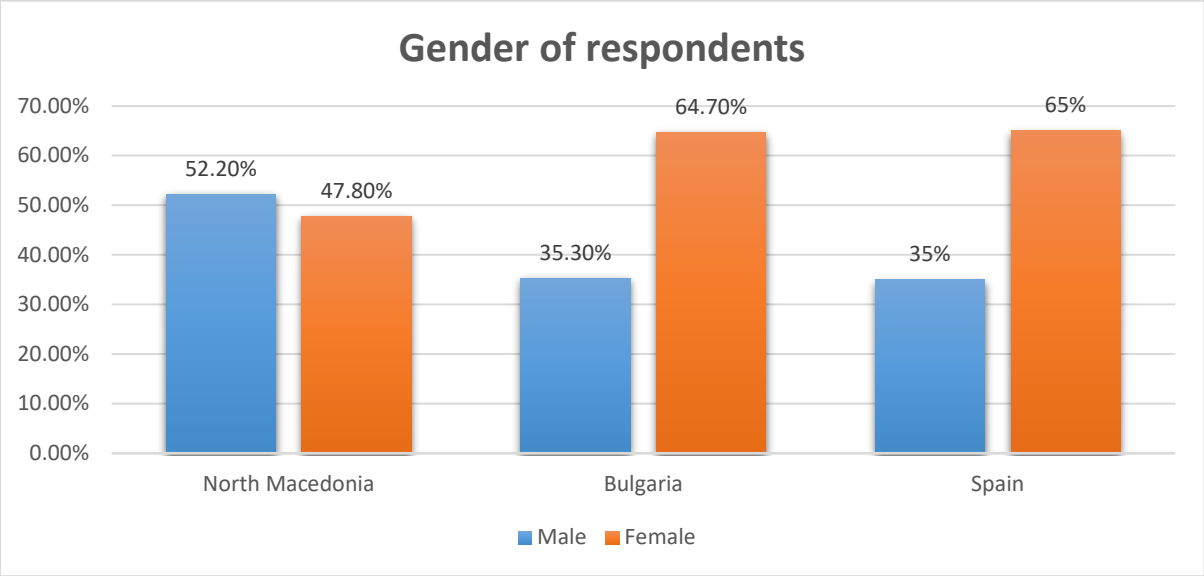

Figure 6. Gender of the participants in North Macedonia, Bulgaria, and Spain

Figure 7 is giving answers regarding the level of education of respondents in North Macedonia. Within this parameter, 43.3% of the respondents or 39 are in the primary educational process, 41.1% or 37 are in the secondary educational system, and other 15,6% or 14 are in the higher educational process. In Bulgaria, 37.1% of the respondents or 16 are in primary education, 52.9% or 18 are in secondary education. In Spain, 5% of respondents or 1 are in the primary educational process, 85% or 17 are in the secondary educational system, and other 10% or 2 are in the higher educational process.

It was very important for our research to have participants from parts of the educational system including participants from primary, secondary, and higher education.

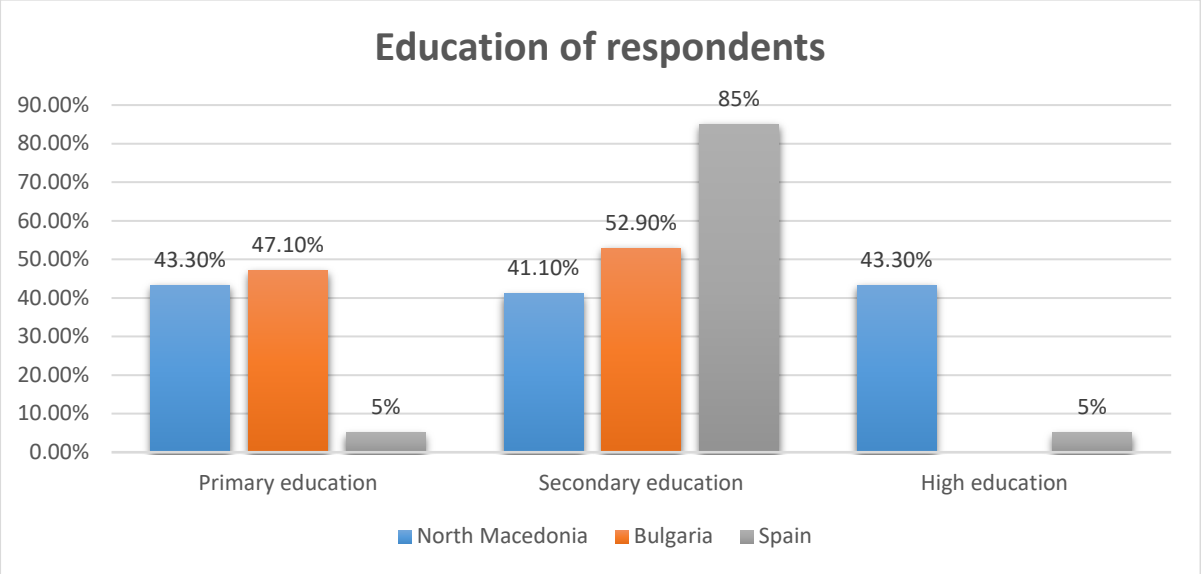

Figure 7. Level of education of the participants from North Macedonia, Bulgaria, and Spain.

On the last figure (figure 8 shown below), some part of the information about respondents is giving an answer about the type of school that our respondent attend. In North Macedonia, 62.8% or 54 are attending mainstream schools, other 37.3% or 32 are attending special schools, in Bulgaria, 58.8% or 20 are attending mainstream schools, other 41.2% or 14 are attending special schools, in Spain, all respondents are from mainstream schools.

It was very important to include participants from special schools in the research process, because the answers from persons with different kind of disabilities were crucial and led to the creation of useful content for the project's OER.

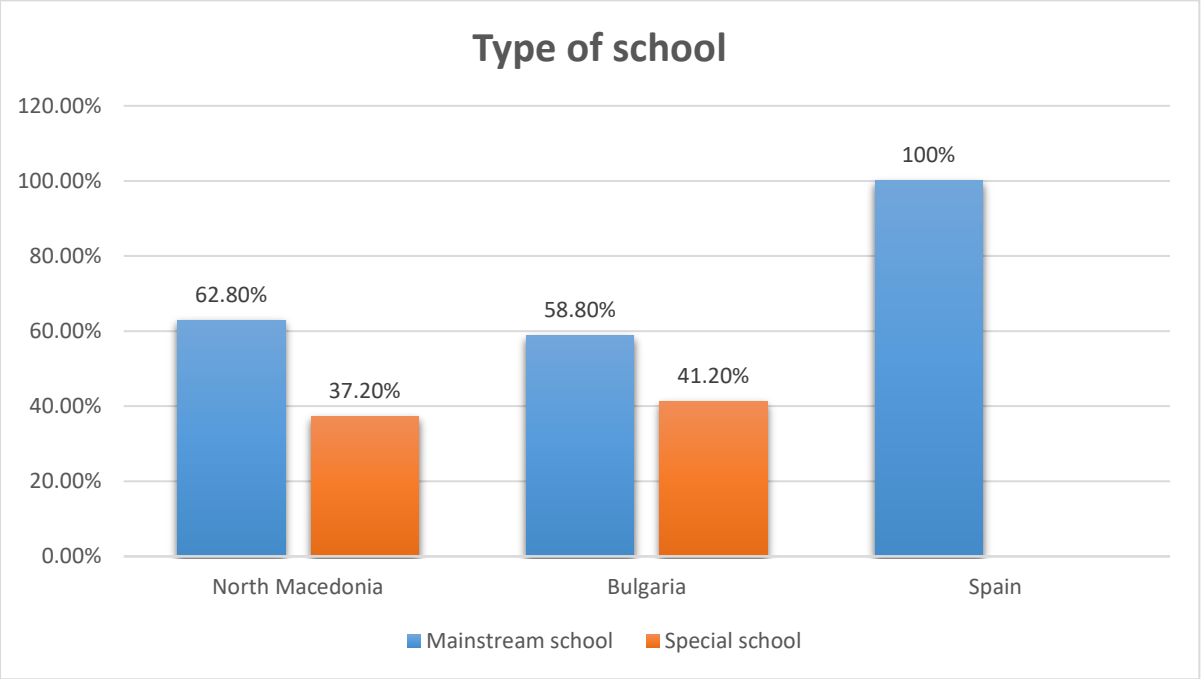

Figure 8. Type of schools in North Macedonia, Bulgaria, and Spain

1.2. Knowledge of the protection and rescue system; training so far in this area

Crisis management systems are fully in the competence of the Government and the government bodies that coordinate and manage the system as competent authorities of the state administration for crisis management matters. The existing concept is highly influenced by the concept of civil defense approach with emphasized Government's role during execution (Hadji-Janev, M. and Jovanovski, V. 2012).

On Figure 9 (shown below) it can be noticed that 53.3% or 48 respondents answer that they are not familiar with the protection and rescue system in North Macedonia. 55.6% or 50 respondents are not familiar with the possible ways that will give alerts for the dangers and the instructions for protection, rescue, and assistance. 34 or 37.8% answered with no and other 36 or 40% gave the answer partly, regarding the questions if our respondents had ever been trained in procedures against natural disasters and other accidents:

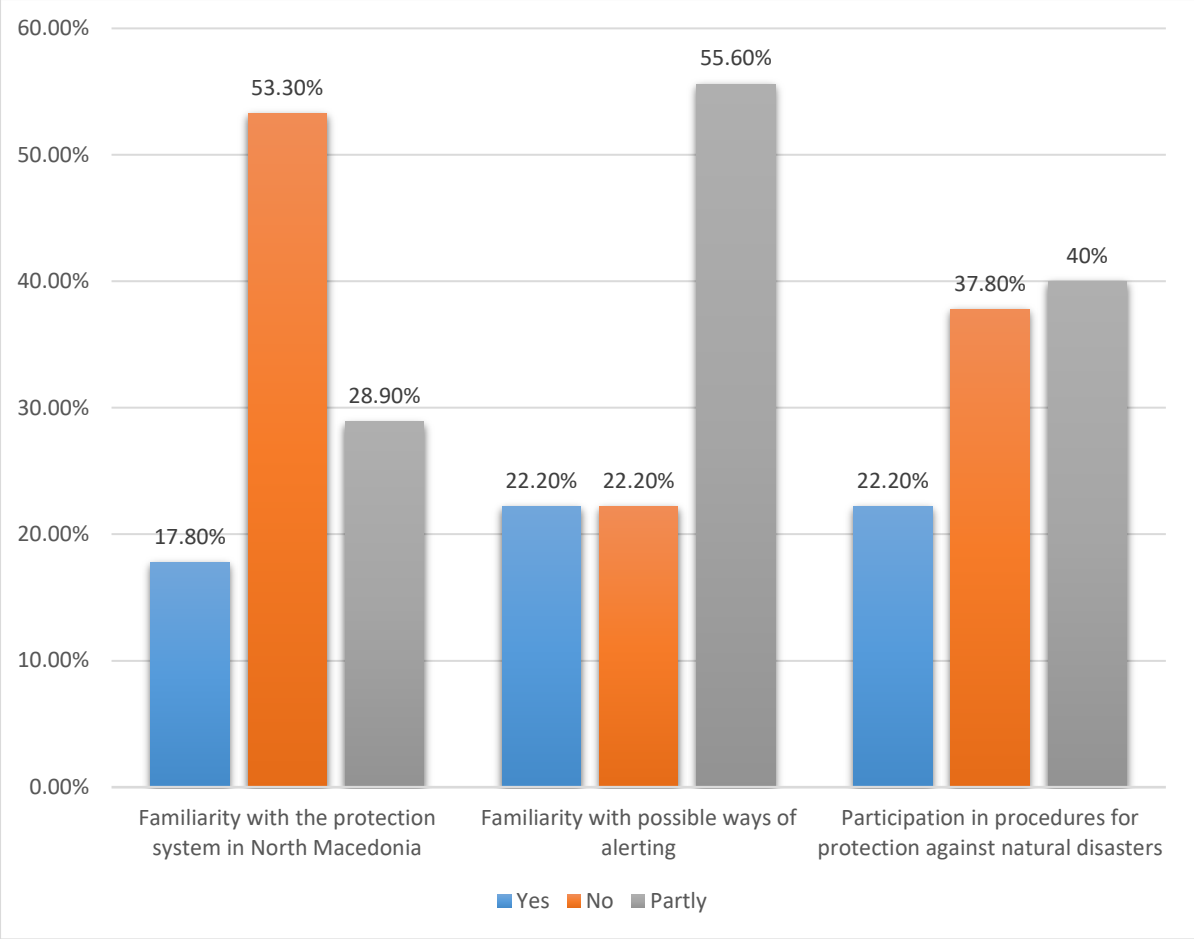

Figure 9. Summarized overview of knowledge of the protection system, manners of alerting, and participation in procedures for protection in North Macedonia

In Bulgaria, (as shown on figure 10) the following can be stated: 55,9% or 21 respondents are partialy familiar with the protection system, 12 respodents or 61,8% are partly familiar with possible ways of alerting and 29 respodents or 85,3% have already participated in procedures for protection against a natural disaster.

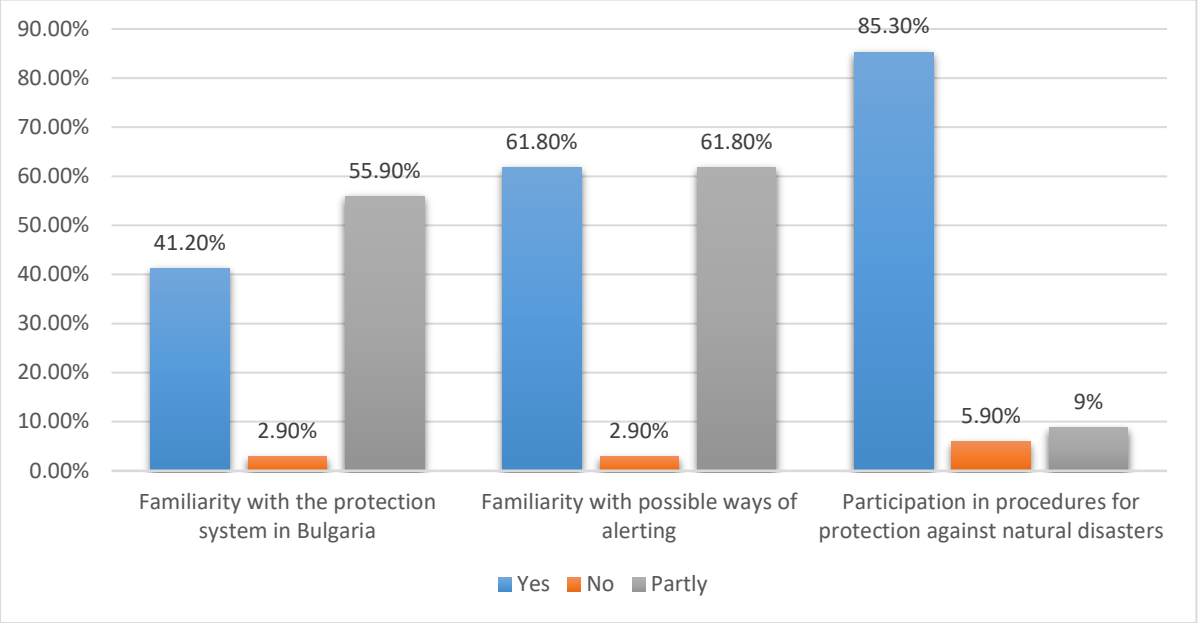

Figure 10. Summarized overview of knowledge of the protection system, manners of alerting, and participation in procedures for protection in Bulgaria

In Spain, (as shown on figure 11) the following is stated: 65% or 13 respondents are not familiar with the protection system, 8 respodents or 40% are partly familiar with possible ways of alerting, and 9 respodents or 45% have not participated in procedures for protection against a natural disaster so far.

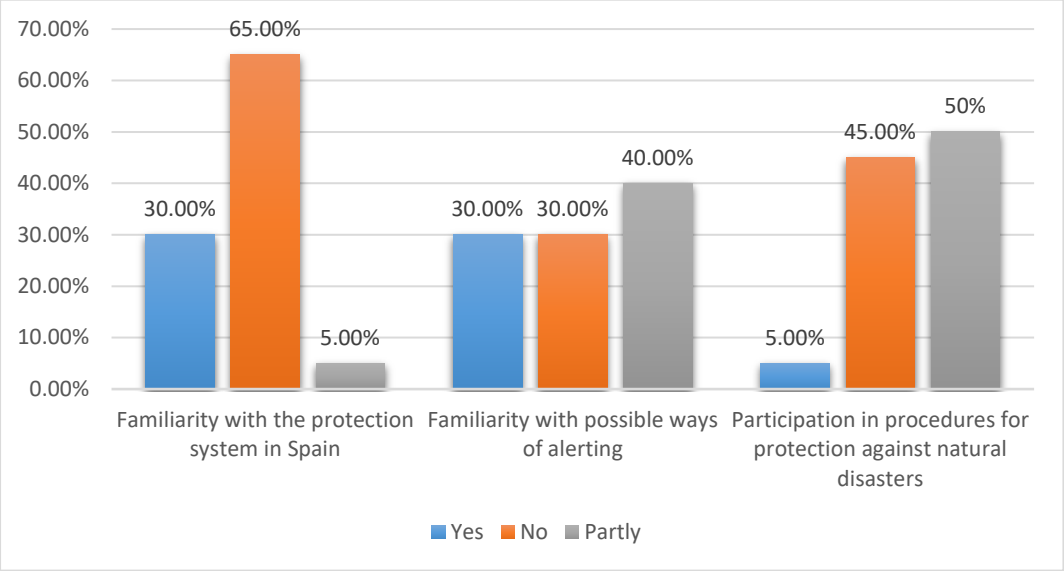

Figure 11. Summarized overview of knowledge of the protection system, manners of alerting, and participation in procedures for protection in Spain

On Figure 12 (shown below), 96,7% or 87 respondents from North Macedonia answered that there should be training about possible ways to report and warn about dangers and give instructions on protection, rescue, and assistance. 82 respondents or 91.1% need a

training course for protection against natural disasters and other accidents. 97,1% or 33 respondents from Bulgaria answered that there should be training about possible ways to report and warn about dangers and give instructions on protection, rescue, and assistance. All 34 respondents need a training course for protection against natural disasters and other accidents. 95% or 19respondent from Spain answered that there should be training about possible ways to report and warn about dangers and give instructions on protection, rescue, and assistance. 17 respondents or 85% need a training course for protection against natural disasters and other accidents.

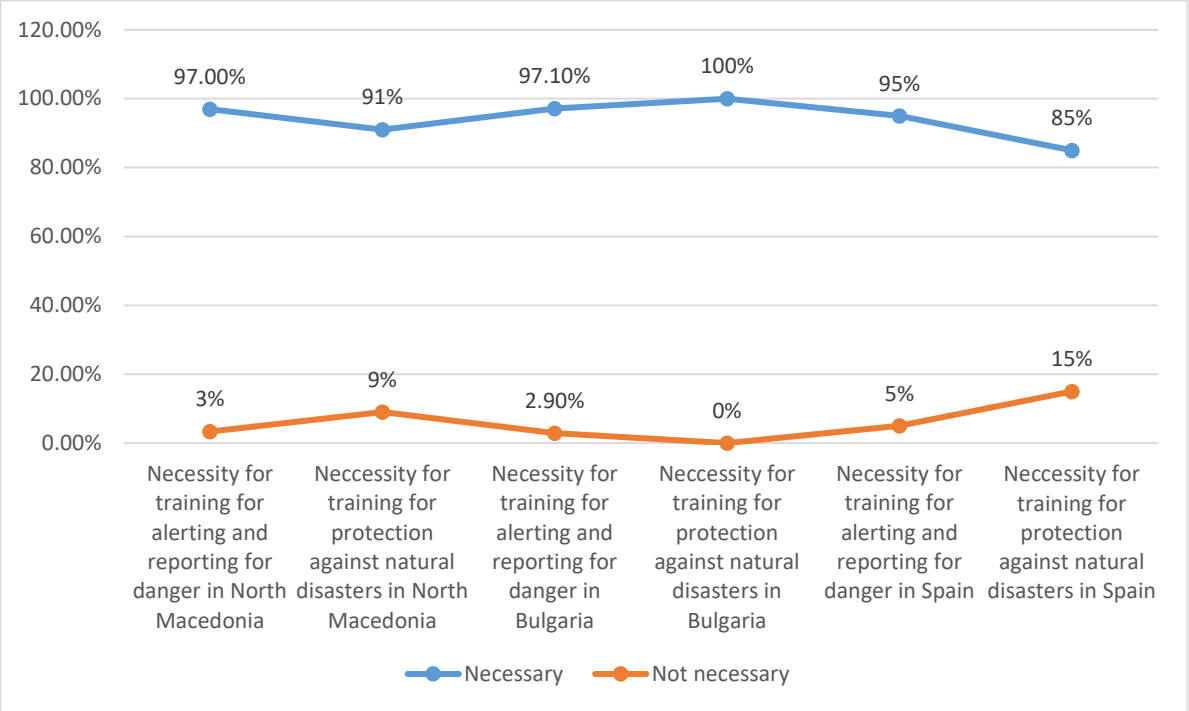

Figure 12. Summarized overview for the neccessity for trainings in North Macedonia, Bulgaria, and Spain

Regarding the training content for disaster protection and other accidents in North Macedonia, Bulgaria, and Spain, respondents were asked to indicate what kind of training was organized. Answers are sumarized in table 1. This question was very important because within the project activities a training course will be organized in order to prepare trainers (teachers) for training of children, youth, and persons with disabilities in schools using different IT tools to gain knowledge about disaster risk management.

Table 1. Training content for disaster protection

Most common given answers:	1. First aid training organized by the Red Cross; 2. First aid, to introduce additional educational classes in schools; 3. Exercises with alarms and lectures; 4. Red cross camp for training for natural disasters; 5. First aid training;

	6. To acquire all kinds of management skills in case of natural disasters; 7. We were informed about the basic rules about what to do when a disaster is to occur. We also went out of the building once as a practice run. 8. How to protect in disaster; 9. Training if there is a fire disaster; 10. Earthquake rescue training; 11. My school had organised a protection of fire; 12. Private high school natural disaster drills, earthquake, fire breakout, etc.; 13. Training for evacuation in the case of a fire or earthquake; 14. Training for earthquakes, for floods, fires; 15. I've participated in fire evacuations in primary school a few times by the Red Cross; 16. Natural disaster training in school; 17. Mostly for giving first aid and fire emergencies back in primary school; 18. With the Red Cross, about earthquake, how to protect; 19. Conference.

Conclusions:

Most of the participants are not familiar with the possible ways to give alerts for the dangers and the instructions for protection, rescue, and assistance.

Most of the participants need training about possible ways to report and warn about dangers and give instructions on protection, rescue, and assistance.

Reccomendations:

—Relevant stakeholders need to produce a document that will give more information to our target group or the professionals who are working with them regarding:

- the protection and rescue system;
- possible ways to give alerts for the dangers and the instructions for protection, rescue, and assistance;

—Relevant stakeholders need to develop a training content for disaster protection and other accidents, because it is needed for our target group;

—the Red cross provides trainings for certain topics related to our project activities, posible future conection, colaboration, and consultance with them will be in line with exchanging experience on good practices.

1.3. Participation in natural disasters

A natural disaster is an act of nature of such magnitude as to create a catastrophic situation in which the day-to-day patterns of life are suddenly disrupted and people are plunged into helplessness and suffering, and, as a result, need food, clothing, shelter, medical and

nursing care and other necessities of life, and protection against unfavorable environmental factors and conditions (Guide to sanitation in natural disasters, WHO-1971).

It was very important from our questionnaire to learn about the participation of our respondents in some natural disasters, because the answers will lead us to final solutions regarding the content of OER.

On figure 13 from North Macedonia, 59 or 65.6% of the respondents have never been in danger so far, other 31 respondents or 34.4% answered that thay have been in danger so far, like: earthquakes, floods, and fires. In Bulgaria, 32 or 94.1% have been in danger so far, like: earthquakes, floods, and fires. In Spain, 17 or 85% have never been in danger so far, like: earthquakes, floods, and fires.

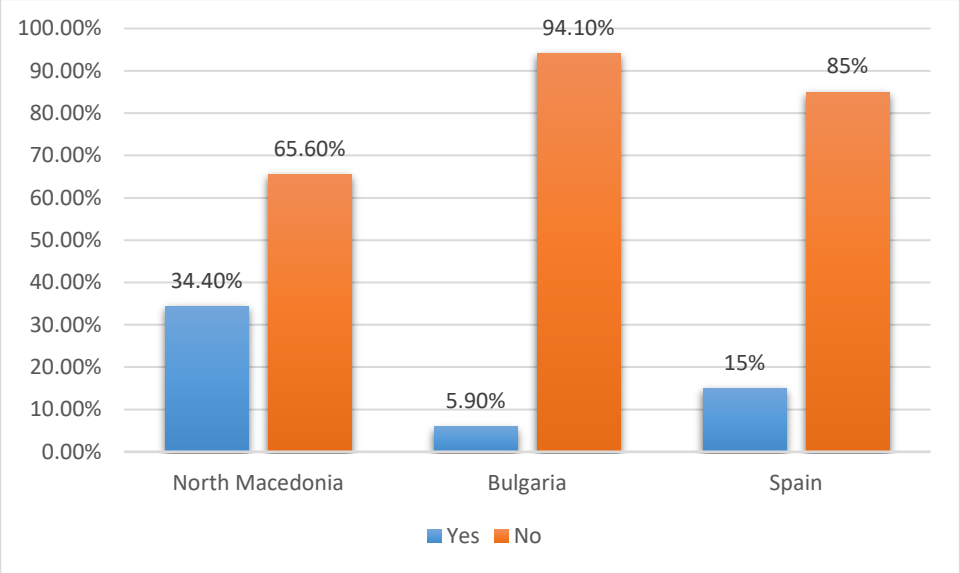

Figure 13. Previous experience of respondents with natural disasters in North Macedonia, Bulgaria, and Spain

Conclusion:

—Most of the participants have been in some natural danger so far.

Recomendation:

—Relevant stakeholders need to develop materials with basic information about earthquakes, floods, and fires.

2. Knowledge of alternative exits in the face of natural disasters and participation in the preparation of evacuation plans

The purpose of evacuations is to save and protect the lives of people exposed to actual or imminent danger through their timely and rapid movement to safer locations and places of shelter. In some contexts, related to the threat and impact of natural hazard events such as severe storms, floods, earthquakes, and wildfires, hundreds of millions of people may need to move within a very short period of time. Planning for such situations is critical to effectively mobilize and coordinate capacity and resources, and manage the safe and timely evacuation of

all persons at risk, to meet emergency needs for shelter and assistance, and to ensure evacuees and other affected people are able to recover from the disruption and risks created by their displacement as safely and quickly as possible.

On Figure 14, in North Macedonia, 41 respondents or 46.5% of the respondents answered that there are alternative exits where the respondents are staying that can be used in situations of natural disasters, fires or similar situations. 39 or 43.3% answer with no, and other 25 or 27.8% of the respondents do not know if there is any alarm in the institutions in case of a natural disaster or fire danger.

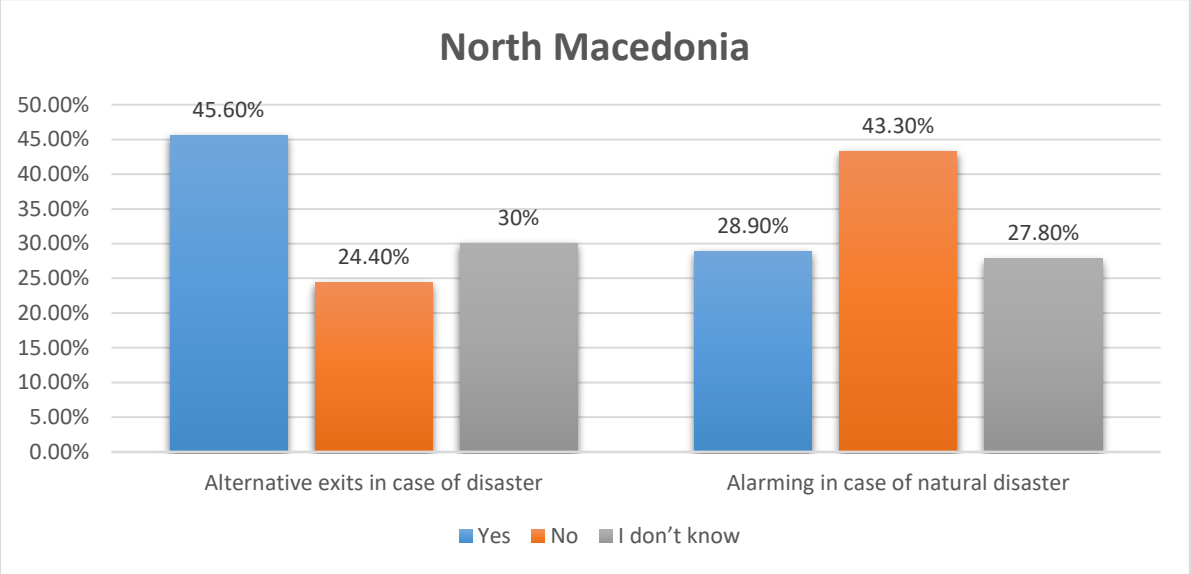

Figure 14. Alternative exits and alarming in case of natural disasters in North Macedonia

In Bulgaria (as shown on figure 15), 30 respondents or 88.2% of the respondents answered that there are alternative exits where the respondents are staying that can be used in situations of natural disasters, fires or similar situations, 4 or 11.8% of the respondents do not know if there is any alarm in the institutions in case of a natural disaster or fire danger.

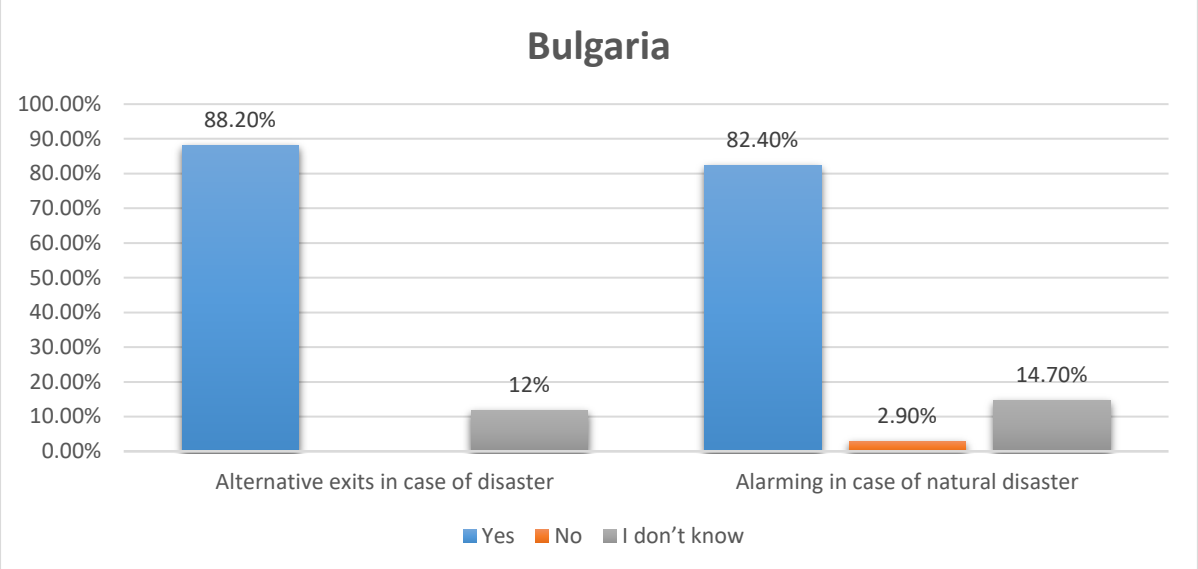

Figure 15. Alternative exits and alarming in case of natural disasters in Bulgaria

In Spain (as shown on figure 16), 14 respondents or 70% of the respondents answered that there are alternative exits where the respondents are staying that can be used in situations of natural disasters, fires or similar situations. 1 or 5% answer with no, and other 5 or 25% of the respondents do not know if there is any alarm in the institutions in case of a natural disaster or fire danger.

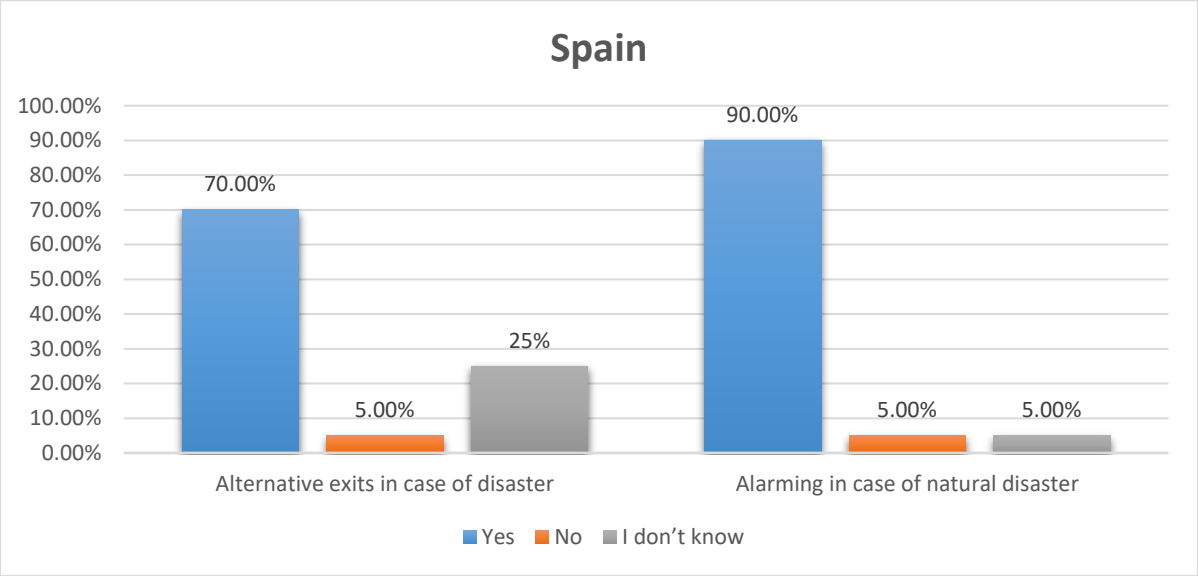

Figure 16. Alternative exits and alarming in case of natural disasters in Spain

On figure 17, it can be noticed that in North Macedonia, 58 or 64.4% of the respondents have never participated in the drafting of evacuation plans. 50% or 40 answered that there is no person that will safely evacuate our respondents in case of a natural disaster, other who answered positively indicated their parents, teachers, special teschers, firemen, police, etc. as persons who will safaly evacuate them.

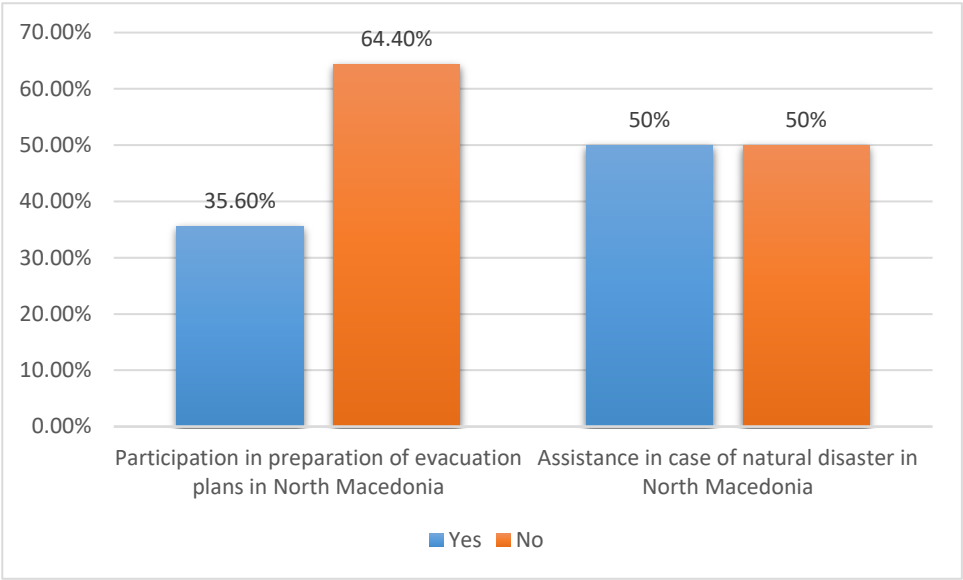

Figure 17. Participation in drafting evacuation plans and assistance in case of natural disasters in North Macedonia

In Bulgaria (as shown on figure 18) 20 or 58.8% of the respondents have never participated in the drafting of evacuation plans. 32 or 94.7% answered that there is a person who will safely evacuate our respondents in case of a natural disaster, and indicated their parents, teachers, special teschers, firemen, police, etc. as persons who will safely evacuate them.

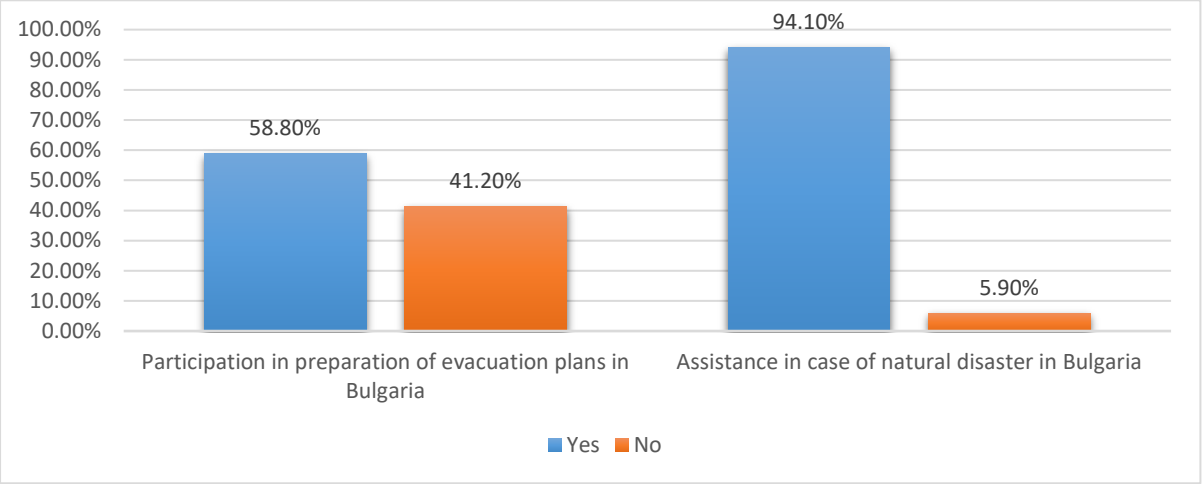

Figure 18. Participation in drafting evacuation plans and assistance in case of natural disasters in Bulgaria

In Spain (as shown on figure 19) 16 or 80% of the respondents participated in the drafting of evacuation plans. 85% or 17 respondents answered that there is no person who will safely evacuate our respondents in case of a natural disaster, other who answered positively indicate their parents, teachers, special teschers, firemen, police, etc. as persons who will safaly evacuate them.

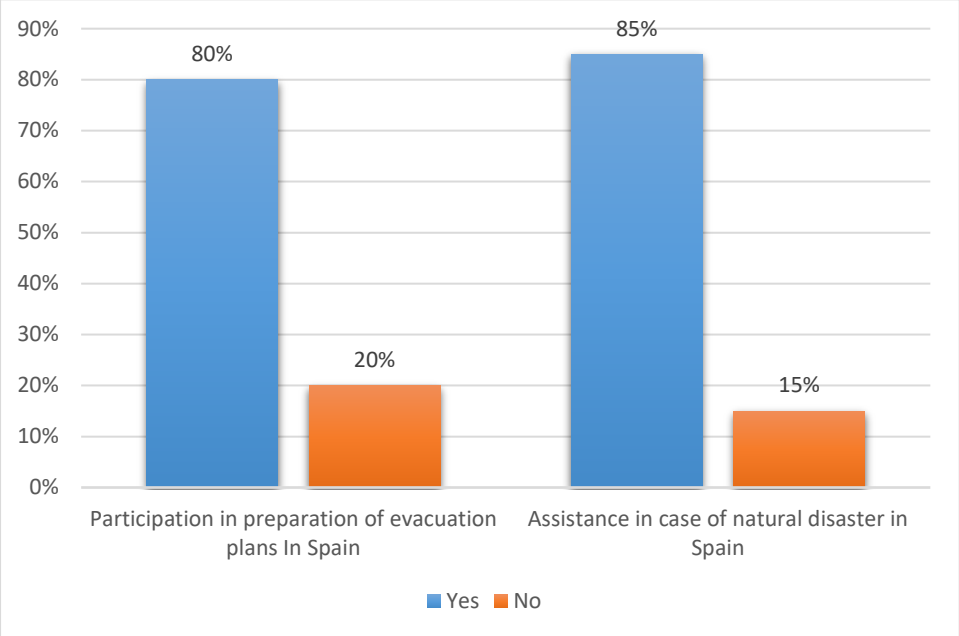

Figure 19. Participation in drafting evacuation plans and assistance in case of natural disasters in Spain

Conclusions:

— Most of the participants do not have experience and knowledge regarding evacuation plans.

Recomendations:

—Relevant stakeholders need to produce a document that will give more information to our target group or the professionals who are working with them regarding the drafting of evacuation plans; we need to prepare their teachers for evacuation in practice.

3. Conclusions and recomendations

Conclusion drawing involves stepping back to consider what the analyzed data mean and to assess their implications for the questions at hand. Verification, integrally linked to conclusion drawing, entails revisiting the data as many times as necessary to cross-check or verify these emergent conclusions. "The meanings emerging from the data have to be tested for their plausibility, their sturdiness, their 'confirmability' - that is, their validity" (Miles and Huberman, 1994, p. 11). Validity means something different in this context than in quantitative evaluation, where it is a technical term that refers quite specifically to whether a given construct measures what it purports to measure.

Based on the quantitative analysis, the following recommendations can be suggested:

— Relevant stakeholders need to produce a document that will give more information to our target group or the professionals who are working with them regarding:
  - the protection and rescue system;
  - possible ways to give alerts for the dangers and the instructions for protection, rescue, and assistance.

— Relevant stakeholders need to develop a training content for disaster protection and other accidents, because it is needed for our target group;

— Relevant stakeholders need to develop materials with basic information about earthquakes, floods, and fires.

— Relevant stakeholders need to produce a document that will give more information to our target group or the professionals who are working with them regarding drafting of evacuation plans; we need to prepare their teachers for evacuation in practice.

— There is a need to develop a video game and mobile app for our target group as an appropriate way to learn and prepare themselves to respond appropriately to natural disasters.

V. RESULTS FROM THE SEMI-STRUCTURED INTERVIEWS WITH STAKEHOLDERS

The semi-structured interviews were created and conducted with the purpose to get an in-depth information regarding the researched phenomenon. These types of interviews are a very common qualitative data source in studies such as these. Qualitative research interviews are 'attempts to understand the world from the subjects' point of view, to unfold the meaning of peoples' experiences, to uncover their lived world prior to scientific explanations (Kvale, 1996).

1. Qualitative methodology as basis for semi-structured interview analysis

The qualitative research is a type of educational research in which the researcher takes into consideration the views of the participants, asks very broad questions and then collects data which is mainly consisted of words. This data is analyzed into themes, while maintaining an unbiased and objective approach. Qualitative methodology is more explanatory in nature and the data is subjected to analytic induction.

The qualitative method used here, semi-structured interviews, typically consists of a dialogue between researcher and participant, guided by a flexible interview protocol and supplemented by follow-up questions, probes and comments. The method allows the researcher to collect open-ended data, to explore participant thoughts, feelings and beliefs about a particular topic and to delve deeply into personal and sometimes sensitive issues (Ponterotto, Rivera&Sueyoshi, 2011).

1.1. Sampling

Regarding sampling, we decided on the minimum of 30 participants with the purpose to ensure that the data collected were adequate. The complexity of the responses was related to the research topic, the face-to-face mode of administration and on the participants themselves.

The sampling for the semi-structured interviews was purposeful. The participants were selected because they were demographically representative for the larger population. The strategy chosen for the purposeful sampling was the variable strategy – participants that represented the full scope of the researched phenomenon.

The participants in this qualitative part of the research were from North Macedonia, Bulgaria, and Spain and were key stakeholders in their respective fields.

1.2. Research technique for data gathering

The semi-structured interview unfolds as the interviewer asks questions to the respondent in order to gain information regarding a specific topic or the experience that the respondent had in a particular area. The sequencing and wording (or phrasing) are often modified in order to fit the respondent's context (DeJonckheere&Vaughn, 2019).

The semi-structured interviews are semi-standardized. They are conducted using an interview questionnaire or schedule comprised of predetermined or scheduled primary questions or question stems, followed by subquestions or "probes." It is important that these questions are open-ended and formulated to elicit unstructured responses and generate discussion. These questions are typically asked of each interviewee in the same way and in a systematic order, but the questions are semi-structured in that the interviewers are allowed freedom to diverge slightly from the script (Irvine, Drew & Sainsbury, 2013).

Within this study, in order to create the research instrument – the protocol for semi-structured interviews (sometimes referred to as a guide), the researchers prepared a preliminary outline listing all the broad categories they feel may be relevant to this study. At the beginning a literature review was conducted which is an essential component in ascertaining what is known about the phenomenon, using the literature in an "informed, skeptical, or comparative

manner (Morse 2006). The familiarity with the phenomenon did not exclusively derive from the literature but also from the researchers' intuition, experience, and observation.

The interviewers followed the protocol, but also followed topical trajectories in the conversation that sometimes strayed from the protocol. Typically, the interviewers had a paper-based interview guide that they followed. Since semi-structured interviews often contain open-ended questions and discussions may diverge from the interview guide, it was decided best to tape-record interviews. The semi-structured interviews were conducted face-to-face. At a later time, these tapes were transcribed. All the confidentiality rules were applied.

2. Constructing analytic codes and categories "bottom up" from the data

Once the domain and its boundaries were delineated, the analysis phase focused within the domain to ascertain its categories. The domain was then subdivided into categories established by their particular shared characteristics.

Items were then constructed from each of these conceptual categories. An item is defined as an individual article or unit that is part of a collection or set.

2.1. Coding and iterative data analysis

The analysis of the semi-structured data was designed to provide an accurate descriptive summary of the respondents' perspectives. The analysis remained close to the data. The interviews were transcribed exactly (word-for-word) from the tape and not paraphrased.

At the beginning of the analysis, codes derived from the data. The researchers analyzed question by question, using codes. After commonalities within the questions were found, data was sorted according to similar characteristics. Once these categories became cluttered, they were subdivided into smaller categories. A definition was developed and assigned to each category, and a synthesizing statement about each category and subcategory was written. Concepts were aligned with the purpose to support the categories and sub-categories.

Considering this is a mixed method research, we used quantification (counting) within this method, as well, so that the reader can have a more thorough insight into the phenomenon. This non-parametric statistic revealed relationships between items.

The end result is knowledge or in this particular case advancement of knowledge in the risk management field.

2.2. Thematic and conceptual analysis

The respondents' responses were categorized and subcategorized. The categories and subcategories came from bulk of information from the interviews. Each theme that emerged from the interviews was thoroughly analysed, which gave in-depth information regarding the investigated phenomenon. The data from the semi-structured interviews, are shown integrally within every category (and subcategory subsequently). Excerpts from the interviews are shown within the tables below.

The analysis of the semi-structured interviews was divided in several subsections, which was highlighted in the protocol for semi-structured interviews as well:

I Introductory information;

II Organizational issues and budget;
III Defining risk profiles;
IV Emergency response plan;
V Inter-sectoral and inter-institutional cooperation;
VI Raising awareness;
VII Including children, youth, and persons with disabilities.

I Introductory information

The answers from the first subsection were summarized in the category:

- **Identification of danger.**

With categorization and analysis of the answers from the category Identification of danger, three subcategories emerged (the quotes within the sub-categories are shown in table 1 below):

1. Observation and surveillance of abnormal behavior (risk analysis and risk assessment);
2. Developed measures, standards and regulations; and
3. Action plan.

Table 2. Identification of danger

Category	Subcategories	Quotes
Identification of danger	**Subcategory 1** Observation and surveillance of abnormal behavior (risk analysis and risk assessment)	**North Macedonia** "Every different reaction of the students that deviates from the normal behavior of the group (hysteria of the crowd, mass abandonment of the building in panic, etc.) leads me to think that there is a danger." "Through observing, experience, and intuition" **Bulgaria** "Through risk assessment" **Spain** "Describing the elements that can be considered as risk elements (workshops, laboratories, sports hall, perimeter fence, lightning rod, boiler room, meter board, transformers, and electrical board) and the risk of each element."
	Subcategory 2 Developed measures, standards and regulations	**North Macedonia** "Through the measures (humanitarian and technical/technological) for all natural disasters." **Bulgaria** "Through internal headquarters meetings".
	Subcategory 3 Action plan	**Bulgaria** "We have an emergency headquarters and an action plan." "We have an Emergency Management Staff formed by order of the Director, as well as an action plan approved by the School's Council."

		Spain "According to the classification established in the Territorial Emergency Plan of Andalusia, the natural, technological, and anthropic risks are identified, as well as the elements, facilities, and processes of risk."

Eighteen respondents noted that within their respected organizations, they identify danger through observation of abnormal behavior. Three mentioned that their institutions have developed measures, standards, and regulations. Eight noted that they have an actual action plan developed for these purposes. One did not reply. The Spanish respondents noted that they basically rely on identifying in-door, out-door, and student health-related sources of risk. Their answers were predominantly related to the first subcategory. The Bulgarian respondents predominantly noted that they use action plans for identification of measures. The answers of the Macedonian respondent were aligned with the first sub-category.

II Organizational issues and budget

The answers from the second subsection were summarized in the following categories:

—**Human, technical, and financial resources, and resources aiding students with disabilities;**

—**Response structure;**

—**Internal security of the organization;**

—**Logistical chain of supply;**

—**Internal management structure;**

—**Internal notification and response system;**

—**External expertise aid;**

—**Frequency and manner of training of the work force;**

—**Budget and accessibility to funds.**

The analysis of the answers from the category Human, technical, and financial resources, and resources aiding students with disabilities, resulted with three subcategories (the quotes within the sub-categories are shown in table 2 below):

1. Expert persons aiding students with disabilities with a state funded budget or donations;
2. No experts for persons with disabilities but PWDs employed; and
3. Satisfactory resources, but no experts.

Table 3. Human, technical, and financial resources, and resources aiding students with disabilities

Category	**Subcategories**	**Quotes**
Human, technical and financial resources and resources	**Subcategory 1** Expert persons aiding students with disabilities with a state funded budget or donations	**North Macedonia** "Yes, the school has a special educator" **Bulgaria** "We have a resource support officer." **Spain**

aiding students with disabilities		"There's a team that helps people with disabilities"
	Subcategory 2 No experts for persons with disabilities, but PWDs employed	**North Macedonia** "We don't have experts for aiding persons with disabilities, but we have employees with disabilities."
	Subcategory 3 Satisfactory resources, but no experts	**Bulgaria** "There are no experts for people with disabilities." **Spain** "We do not have specialized personnel to assist people with disabilities."

Fourteen respondents claimed that their organizations have expert persons who aid students with disabilities. Their organizations were state funded, or they hired these professionals by using donations. Four respondents noted that they do not have experts who would help persons with disabilities in processes related to risk management or its prevention by trainings, but some of them have employed persons with disabilities in their organizations. Twelve interviewees mentioned that they have satisfactory resources and yet, they do not have experts to aid within these activities. The Macedonian, Bulgarian, and Spanish respondents gave answers which spanned across all subcategories. The second subcategory was filled in with answers only by the Macedonian respondents.

The analysis of the answers from the category Response structure, resulted with three subcategories (the quotes within the sub-categories are shown in table 3 below):

1. Plan of activities, social media communication, and radio alerts;
2. Special teams and alarms; and
3. Special platforms and systems.

Table 4. Response structure

Category	Subcategories	Quotes
Response structure	**Subcategory 1** Plan of activities, social media communication, and radio alerts	**North Macedonia** "During a crisis we use all of the methods available to us for communication (phone, e-mail, skype, Viber, social network). **Bulgaria** "We have a headquarters for disaster response. It has contingency plans in case of disasters, accidents, and terrorist attacks." **Spain** "We have protocols for action and communication in case of crisis."

	Subcategory 2 Special teams and alarms	**North Macedonia** "The team, more precisely the employees, depending on the given danger situation, receive directions for action." **Bulgaria** "There are formed groups for reaction in the Disaster, Emergency and Catastrophe Plan." **Spain** "The task force consists of a team of teachers and students adequately trained and with responsibility in each of these areas: Alarm and improvement. First intervention. Improvement and maintenance."
	Subcategory 3 Special platforms and systems	**North Macedonia** "In case of crisis we communicate via mobile phones, email, meetings, via the CISCO online platform. The NICS system is also used for communication."

Nine of the interviewed stakeholders noted that they have developed a plan of activities as a response structure. They also use social media communication and radio alerts. Twenty respondents, particularly respondents from North Macedonia and Spain, have special teams and alarms for these purposes. Only one stakeholder from Macedonia has a special platform as a response structure.

The analysis of the answers from the category Internal security of the organization (the quotes within the category are shown in table 4 below):

1. Security guards and video surveillance;
2. Only video surveillance; and
3. Self-protection plan.

Table 5. Internal security of the organization

Category	Subcategories	Quotes
Internal security of the organization	**Subcategory 1** Security guards and video surveillance	**North Macedonia** **"**The school has a video surveillance, security and teachers on duty during the breaks." **Bulgaria** "In the school, there is a physical security and an alarm system. The building has fire extinguishers and a fire alarm system."
	Subcategory 2	**North Macedonia** "The CMC facility is under video surveillance."

	Only video surveillance	
	Subcategory 3 Self-protection plan	**Spain** "We have a self-protection plan".

Fourteen respondents from North Macedonia and Bulgaria use security guards and video-surveillance in order to maintain the internal security of the organization. Four Macedonian respondents noted that they only use video-surveillance, while all ten respondents from Spain noted that they use a self-protection plan in which the internal security parameters for the organization are defined. Two respondents from Bulgaria gave no replies.

The categorization of the answers from the category Logistical chain of supply resulted with the following sub-categories (the quotes within the category are shown in table 5):

1. Public procurement;
2. Public procurements, projects, donations; and
3. Plan for self-protection.

Table 6. Logistical chain of supply

Category	Subcategories	Quotes
Logistical chain of supply	**Subcategory 1** Public procurement	**North Macedonia** "The logistical chain of supply in Our organization according to the legal indications is realized through public procurement." "We have logistic support from the municipality, the ministry, the government." **Bulgaria** "Request from the Director to the district administration for the necessary remedies. "
	Subcategory 2 Public procurements, projects, donations	**North Macedonia** "Chain of supply is based partially on donations, as well as on the public procurement system where sometimes there are problems with the procedure that could result with a delay of procurement."
	Subcategory 3 Plan for self-protection	**Spain** http://www.iesisladeleon.es/nuestro-centro/documentos/

Thirteen respondents from North Macedonia and Bulgaria noted that they use only public procurement for their logistical chain of supply. Three respondents from Bulgaria did not respond to the questions. Four representatives from North Macedonia noted that beside the public procurements, they use projects and donations for their logistical chain of supply. Ten

respondents from Spain mentioned that they have their logistical chain of supply described in their plans for self-protection.

The categorization of the answers from the following category Internal management structure resulted with the following two sub-categories (the quotes within the category are shown in table 6):

1. Yes, we do have an internal management structure; and
2. In crisis, standard operating procedures are applied.

Table 7. Internal management structure

Category	Subcategories	Quotes
Internal management structure	**Subcategory 1** Yes, we do have an internal management structure	**North Macedonia** "Yes, principal, professional associates, secretary, school board, parent's board, student's board, and different support teams." **Bulgaria** "Yes. Headquarters." "Yes. Headquarters for reaction to disasters, fires, accidents, etc." **Spain** "Yes, and an organization chart for the action of teams in case of different types of emergency."
	Subcategory 2 In crisis, standard operating procedures are applied	**North Macedonia** "In a crisis situation, Standard Operating Procedures are applied."

Within this category, two sub-categories arose. Eighteen respondents from all three countries, North Macedonia, Bulgaria, and Spain noted that they do have an internal management structure, while two respondents from North Macedonia mentioned that during crisis, they apply standard operating procedures.

The answers from the following category - Internal notification and response system can be categorized in the following three sub-categories (the quotes within the sub-categories are shown in table 7):

1. No internal notification and response system;
2. Existence of an internal notification and response system; and
3. Notification system via mobile phones and radio stations.

Table 8. Internal notification and response system

Category	Subcategories	Quotes
Internal notification and response system	**Subcategory 1** No internal notification and response system;	**North Macedonia** "No." **Bulgaria** "No."
	Subcategory 2 Existence of an internal notification and response system; and	**North Macedonia** "The school has prepared a response plan in case of danger, crises or elementary disaster, and all the employees are acquainted with it. The school also has a plan for evacuation." **Bulgaria** "Yes." **Spain** "Yes, an internal and external (police, fire, etc.) notification and response protocol."
	Subcategory 3 Notification system via mobile phones and radio stations.	**North Macedonia** Notification is based on mobile phones and radio stations for field activities. The notification system applies procedures that regulate who is calling in a given situation. **Bulgaria** "According to the disaster, accident and catastrophe plan – by telephone." **Spain** "Yes."

Only one respondent from Macedonia, and one respondent from Bulgaria noted that their institutions do not have an internal notification and response system. Sixteen respondents from all three countries noted that an internal notification and response system exists in their respective institutions while twelve respondents mentioned that their notification systems work through mobile phones and radio stations.

The answers from the next category – External expertise aid resulted in a division in the following two sub-categories (the quotes within the sub-categories are shown in table 8):

1. No external expertise aid;
2. Yes, domestic or foreign experts.

Table 9. External expertise aid

Category	Subcategories	Quotes
External expertise aid	**Subcategory 1** No external expertise aid	**North Macedonia** "No." **Bulgaria** "No, but we try to collect money from our small budget, because security is a global and increasing challenge." "Limited financial resources."
	Subcategory 2 Yes, domestic or foreign experts	**North Macedonia** "We get an external expertise aid from the concerning state institutions, as well as the non-governmental sector." "There are experts from Macedonia and from abroad (USA) engaged in CMC." **Spain** "Yes, police, civil protection, fire department."

Eleven respondents from North Macedonia and Bulgaria responded that they receive no external expertise aid. Nineteen respondents from North Macedonia and Spain noted that they use expert aid, both domestic and foreign. No respondent from Bulgaria mentioned that they receive external aid.

The categorization of the respondents' answers resulted with the definition of the next category – Frequency and manner of training of the work force. Three sub-categories were defined (the quotes within the sub-categories are shown in table 9):

1. Formal staff trainings;
2. Informal staff trainings; and
3. Trainings organized with an external assistance.

Table 10. Frequency and manner of training of the work force

Category	Subcategories	Quotes
Frequency and manner of training of the work force	**Subcategory 1** Formal staff trainings	**North Macedonia** "Employees are constantly being trained according to the current models - through seminars, trainings, team building, etc." **Bulgaria** "Training activities are on schedule. At least once a year." **Spain** "We inform each team leader and responsible tutors in the First Senate of each school year."

		"They also receive training in occupational risk prevention."
	Subcategory 2 Informal staff trainings	**North Macedonia** "The professional staff in our institution randomly have some training (it is not obligatory) as fire protection training and first aid training." **Spain** "Through an annual talk. It is necessary to have a team of informed, organized, trained and educated people to ensure speed and efficiency in the actions to be taken in emergencies."
	Subcategory 3 Trainings organized with an external assistance	**North Macedonia** "Employee trainings is minimal and only provided through external assistance."

Twenty-six respondents from all countries responded that their organizations organized formal staff trainings, three respondents from North Macedonia and Spain noted that they organize informal staff trainings, while only one respondent from North Macedonia mentioned that they use external assistance to organize trainings.

The respondents' answers resulted with a definition of the next category – Budget and accessibility of funds. Three sub-categories were defined (the quotes within the sub-categories are shown in table 10):

1. Limited;
2. Sufficient; and
3. Projects for additional funds.

Table 11. Budget and accessibility of funds

Category	Subcategories	Quotes
Budget and accessibility to funds	**Subcategory 1** Limited	**North Macedonia** "It is not satisfactory. We don't know how to use the funds properly." "Budget is not satisfactory; we expect donation assistance." "The funds that we have, come from donations. There is no significant involvement in projects, expensive cars were purchased from previous projects, instead of

		means that serve the basic occupation of the institution." **Bulgaria** "No. Our budget is determined by the municipality.**"**
	Subcategory 2 Sufficient	**North Macedonia** "In our institution, most of the financial needs are covered by the Ministry of Education and Science. We also have revenues from rent, as well as donations, which can be used by ministry approval." **Bulgaria** "Yes, we are doing well with the available budget."
	Subcategory 3 Projects for additional funds.	**North Macedonia** "There is always a need for more funds. We have 6-7 active projects with funds, including projects with NATO. We have many opportunities to use funds and CMC participates in many international projects (there are currently about 8 active projects). We also provide funding from external donors through projects in which we collaborate with the EU, NATO, NATO SPS, UNDP, IPA funds, and others partners." **Bulgaria** "With this enormous load of references, analysis, and whatever meaningless things we are dealing with, time is in short supply. Otherwise, we are successfully working on European projects, but this is at the expense of the off-hours that our teachers are so good at preparing and applying for. However, this is not normal. If any non-governmental organization or company takes over the logistics part - incl. applying and managing the project, we would be pleased to participate. Otherwise, no. We are, in principle, over-mobilized." **Spain** "The Health and Occupational Risk Prevention Commission, along with the coordinator of the

		Self-Protection Plan, will analyse the Centre's needs that are not sufficiently covered in terms of self-protection and prevention, as well as the updating of existing resources. In collaboration with the Management of the Centre, the Administration will be asked for the necessary means to correct the deficiencies that have been detected."

Eleven respondents from North Macedonia and Bulgaria noted that they have a limited budget and accessibility to funds, sixteen respondents mentioned that the funds they have are sufficient and they can access funds easily, and three respondents from North Macedonia and Bulgaria noted that they use projects' finances as additional funds.

III Defining risk profiles

The answers from the third subsection were summarized in the following categories:

- **Identification of risk profiles and manner of receiving information;**
- **Risk analysis and risk assessment.**

Next, the analysis of the answers from the category Identification of risk profiles and manner of receiving information is presented. Three sub-categories were defined (the quotes within the sub-categories are shown in table 11):

1. Risk profiles created on a governmental level;
2. Personal identification of risks; and
3. Software.

Table 12. Identification of risk profiles and manner of receiving information

Category	Subcategories	Quotes
Identification of risk profiles and manner of receiving information	**Subcategory 1** Risk profiles created on a governmental level	**North Macedonia** "Most of the information according to the type of risks is published on all levels- local, regional, and national, provided by governmental institutions as the Council of state security, Crisis centers- local, regional and national, Ministry of Interior, Ministry of Foreign Affairs, Ministry of Health, Ministry of Education, etc". **Bulgaria** "Yes. Local and regional plans have been developed. We receive information from the municipality, which is accessible at all times." **Spain** "Yes, according to the classification established in the Territorial Emergency Plan of Andalusia."
	Subcategory 2 Personal identification of risks	**North Macedonia**

		"We identify risk profiles locally and nationally. Impact assessment of the municipality area is done for all 80 municipalities. The data is updated regularly. Nationally, there are 11 profiled risks. We receive the information in two ways: - from open sources (e.g. Google, State Archives); - from our (historical) databases." **Bulgaria** "Yes, internal disaster protection plan. Through periodical instructions." **Spain** "Yes. Analysis of the facilities, geology, climatology, ecology, road network, through reports."
	Subcategory 3 Software	**North Macedonia** "Risk assessment software has been developed. Impact assessment of the area of the municipality is done by all institutions at local level." "The data we get through our own databases information exchange and open source." **Bulgaria** "Yes. Through Internet and from other institutions."

Fifteen respondents from all countries answered that their organizations use risk profiles created on a governmental level. Ten respondents from all countries responded that they personally and individually identify risks. Two respondents from North Macedonia and Bulgaria mentioned that they use software for these purposes. Three respondents did not reply.

On the following table (table 12), the analysis of the answers from the category Risk analysis and risk assessment is presented. Three sub-categories were defined:

1. Through humanitarian and technical-technological measures and use of the National Disaster Protection Plan;
2. Risk assessment in the workplace; and
3. Through assessment of vulnerability or resilience of the population.

Table 13. Risk analysis and risk assessment

Category	Subcategories	Quotes
Risk analysis and risk assessment	**Subcategory 1** Through humanitarian and technical-technological measures and use of the National Disaster Protection Plan	**North Macedonia** "Through humanitarian and technical-technological measures for all natural disasters." **Bulgaria** "Through elaboration of the National Disaster Protection Plan."

	Subcategory 2 Risk assessment in the workplace	**North Macedonia** "We have a risk assessment on identifying occupational safety and health hazards in the workplace, which includes: - which may cause injury or damage; - whether the hazards can be removed - preventive or protective measures which are taken." **Bulgaria** "There is an employee in the municipality responsible for risk analysis and assessment on the territory of the municipality." **Spain** "Analyzing the facilities, and the situations that involve danger."
	Subcategory 3 Through assessment of vulnerability or resilience of the population	**North Macedonia** "Through exposure, vulnerability, and resilience of the population." **Bulgaria** "The plan cited above has a risk analysis and assessment section. Although we have responded and organized our work as well as possible in the current state of emergency in Bulgaria, I do not think that we are absolutely prepared for every situation." **Spain** "Based on data and statistics from the area near the centre."

Ten respondents from all countries noted that they use humanitarian and technical-technological measures for risk analysis and risk assessment. One of them mentioned that they use the National disaster protection plan for these purposes. Ten respondents from North Macedonia, Bulgaria, and Spain stated that they do the risk assessment in the workplace. Seven respondents stated that they conduct assessment of the vulnerability or resilience of the population. Three respondents did not reply.

IV Emergency response plan

The answers from the fourth subsection were summarized in the following categories:

- **Emergency response plan concept and goals;**
- **Predetermined procedures for emergencies for persons with disabilities;**
- **Use of humanitarian measures.**

The first category – Emergency response plan concept and goals defined three sub-categories (which along with the quotes are shown in table 13).

1. Internal plans, life safety as priority / stabilization of the incident;
2. Preventive measures, mobilization, protection and rescue; and
3. No official plan.

Table 14. Emergency response plan, concept, and goals

Category	Subcategories	Quotes
Emergency response plan, concept, and goals	**Subcategory 1** Internal plans, life safety as priority / stabilization of the incident	**North Macedonia** "The actions taken in the initial minutes of an emergency are critical. The purpose, objective, and ultimate goal of the emergency response plan is the preservation of life. When an emergency occurs, the first priority is always life safety. The second priority is the stabilization of the incident." **Bulgaria** "Its main purpose is to coordinate properly and to signal as needed, to properly organize all emergency steps." **Spain** "Identify the emergency situations and establish a protocol of action, where the functions to be carried out by all the members of the community will be stated."
	Subcategory 2 Preventive measures, mobilization, protection and rescue	**North Macedonia** "The measures set out in the plan are at three levels: 1. Preparedness (determines how duties are maintained); 2. Mobilization of forces, means, and equipment (it is determined how the call and reporting is performed); 3. Plan for protection and rescue measures (there are 14 humanitarian and technical-technological measures)." **Bulgaria** "Identifying the disaster risks, plan for timely reaction (evacuation)." **Spain** "The Self-Protection Plan includes the organization of people and materials for the prevention of the listed risks, as well as to ensure general evacuation and immediate intervention."
	Subcategory 3 No official plan	**North Macedonia** "We don't have an official emergency plan. There is no legal obligation to do so, but we

		have estimated that there is a need for an emergency plan. Its preparation is in an advanced stage.**”**

Seventeen respondents from all countries stated that they use internal plans, life safety as a priority and secondly stabilization of the incident. Ten respondents responded that they use preventative measures, mobilization, protection and rescue. One person from North Macedonia stated that they have no official plan for an emergency response. Two respondents did not reply.

The second category – Predetermined procedures for emergencies for persons with disabilities defined three sub-categories (which along with the quotes are shown in table 14).

1. Partly;
2. No; and
3. Yes.

Table 15. Predetermined procedures for emergencies for persons with disabilities

Category	**Subcategories**	**Quotes**
Predetermined procedures for emergencies for persons with disabilities	**Subcategory 1** Partly	**North Macedonia** “Partly.”
	Subcategory 2 No	**North Macedonia** “There are Standard Operating Procedures. We don’t have special procedures for people with disabilities.” **Bulgaria** “We have procedures in place, but we do not have lifts and platforms.”
	Subcategory 3 Yes	**North Macedonia** “Yes, the evacuation plan has all the procedures including the procedure for people with disabilities.” **Bulgaria** “Yes, in the Disaster, Emergency and Catastrophe Plan.” **Spain** “Yes, in general, with people involved and actions to be taken.” “Yes, a person who could be a partner will be appointed to help the disabled.”

One respondent from North Macedonia claimed that their institution has partly developed procedures for persons with disabilities. Twelve respondents from North Macedonia and Bulgaria stated that they do not have predetermined procedures for emergencies for persons with disabilities. Seventeen respondents from all countries stated that they do have procedures for persons with disabilities during emergencies. All respondents from Spain noted that they have such procedures.

The third category within this subsection – Use of humanitarian measures defined two sub-categories (which along with the quotes are shown in table 15).

1. Yes;
2. Do not use.

Table 16. Use of humanitarian measures

Category	Subcategories	Quotes
Use of humanitarian measures	**Subcategory 1** Yes	**North Macedonia** "Students receive full support and assistance from all employees in the Center. Workshops are held on the topics of hazards, classroom conversations, student`s meetings attended by educators and / or teachers." "Evacuation of the employees and students on a safe ground, protection from fire, medical help from the trained employees." **Bulgaria** "Civil protection in case of danger and during the disaster." "First aid, timely reaction to move out of the building to those in danger." **Spain** "We take action in coordination with civil protection, health services, and community public services."
	Subcategory 2 Do not use	**North Macedonia** "CMC does not treat humanitarian measures." **Bulgaria** No

All respondents from Spain noted that they do use humanitarian measures. Twenty-five respondents in total stated that they use humanitarian measures. Only three respondents mentioned that they do not use these measures. Two respondents did not reply.

V Inter-sectoral and inter-institutional cooperation

The answers from the fourth subsection were summarized in the following categories:

- **Partnerships for prevention, preparedness, and response;**
- **Joint risk assessment with other institutions;**
- **Cooperation with other sectors.**

The first category – Partnerships for prevention, preparedness, and response defined two sub-categories (which along with the quotes are shown in table 16).

1. No; and
2. Local partnerships.

Table 17. Partnerships for prevention, preparedness, and response

Category	Subcategories	Quotes
Partnerships for prevention, preparedness, and response	**Subcategory 1** No	**North Macedonia** "No."
	Subcategory 2 Local partnerships	**North Macedonia** "Yes. We cooperate with other schools, primary and secondary. We share the experience and information. We organize common workshops on various topics related to protection and rescue from natural disasters and other accidents." "We cooperate with the Ministry of Education and Science, as a competent Ministry. We act according to their directions." "We cooperate with the Red Cross - Gazi Baba municipality, private companies, and NGOs. We collaborate and exchange data, on a contractual and voluntary basis, in particular with state authorities, public enterprises, and companies." **Bulgaria** "Yes – with local fire nad police services, regional administration, Regional Health Inspection." **Spain** "Civil protection, Fire brigade, police."

Only one respondent from Macedonia stated that they do not have such partnerships. Two respondents from Bulgaria did not reply. All other respondents mentioned that they use partnerships for prevention, preparedness, and response.

The second category – Joint risk assessment with other institutions defined two sub-categories (which along with the quotes are shown in table 17).

1. No; and
2. Yes.

Table 18. Joint risk assessment with other institutions

Category	Subcategories	Quotes
Joint risk assessment with other institutions	**Subcategory 1** No	**North Macedonia** "No, we do it ourselves because of the specifics of the students." "There is a lack of coordination on a high level." **Bulgaria** "No."
	Subcategory 2 Yes	**North Macedonia** "Yes, only with good cooperation, we can come to the right assessment of the danger." "Yes, it is necessary to know exactly who is involved in a crisis situations and with what kind of obligations." **Bulgaria** "With the municipality, as well as various initiatives of fire safety structure." "We follow the instructions sent by other institutions and our plans and activities are verified by them." **Spain** "With the city council and the autonomous community Civil Protection, Local Police, and Fire Department."

Only one respondent from Macedonia stated that they do not have such partnerships. Two respondents from Bulgaria did not reply. All other respondents mentioned that they use partnerships for prevention, preparedness, and response.

The third category within this sub-section – Cooperation with other sectors defined four sub-categories (which along with the quotes are shown in table 18).

1. Cooperation with the health sector;
2. Cooperation with the social sector;
3. Cooperation with the education sector; and
4. Cooperation with the security sector.

Table 19. Cooperation with other sectors

Category	Subcategories	Quotes
Cooperation with other sectors	**Subcategory 1** Cooperation with the health sector	**North Macedonia** "We have a good cooperation with the health sector. They give medical help to our students even though our students come from different municipalities in our country." "We collaborate with many private clinics that provide humanitarian medical help to our students (dental services, eyes examination....)" "We organize workshops on different medical topics of interest to young people - addiction of smoking, alcohol, drugs, etc." "We cooperate with the health sector, so far, especially in terms of expected extremely hot or extremely cold waves." **Bulgaria** "Permanent link at district level - Regional Health Inspectorate." "We follow the instructions sent by them." **Spain** "We participate in student awareness campaigns on health and safety issues developed at a national, regional or local level."
	Subcategory 2 Cooperation with the social sector	**North Macedonia** "We cooperate through the prevention sector; Memorandum with the Chamber of Psychologists was signed." "We have a fruitful cooperation with the civil associations, non-governmental organizations, etc." **Bulgaria** "Joint exercises for reaction in case of disasters." "There is an electronic form for continuous connection between the schools and the Agency for Social Assistance in the regions." **Spain** "This Centre belongs to the Andalusian Network School Space of Peace, a program of educational innovation and projects by which measures are adopted for the promotion of the

		culture of peace and the improvement of coexistence in educational centers." "We participate in student awareness campaigns on social issues developed at a national, regional or local level."
	Subcategory 3 Cooperation with the education sector	**North Macedonia** "For the realization of the overall plans and programs in the educational process, cooperation with the educational sector is unconditional. The education sector also provides material and technical support for the promotion of education of persons with disabilities, as well as professional upgrading of the teaching staff." "The Ministry of Education and Science is the evaluator of the exercises organized by CMC. There are 2 representatives from the education sector in Crisis Management. CMC has signed memorandums of cooperation with the universities in Macedonia." **Bulgaria** "We are an educational structure and are in constant contact with others in the education sector. We are an educational institution and we have a very good cooperation with the education sector." **Spain** "We collaborate and participate with other educational centers in the development of local, regional or national initiatives." "The center participated as a host partner in an Erasmus + project on sustainability in education and training in the personal image sector."
	Subcategory 4 Cooperation with the security sector	**North Macedonia** "We have a perfect cooperation with the Ministry of Interior." "We also participate together with MoI in joint NATO exercises." "We cooperate with the Ministry of Interior at the police station level, on how to comply with the Standard Operating Procedures." **Bulgaria**

		"Permanent cooperation at the district level; Security sector performs external video surveillance." "We collaborate with the local police – organization of education on the following topic: Safety on streets." **Spain** "Coordination with the civil protection and local police."

All the answers of the respondents related to cooperation with other sectors were merged into one table, since all respondents stated that they have good cooperation with all sectors. All thirty respondents from North Macedonia, Spain and Bulgaria stated that they have good cooperation with the health, social, educational and security sector.

VI Raising awareness

The answers from the next subsection were summarized in only one category:

—**Manner of raising awareness.**

In this category – Manner of raising awareness we defined three sub-categories (which along with the quotes are shown in table 19).

1. Curriculum or another formal manner;
2. Informally; and
3. Social media and campaigns

Table 20. Manner of raising awareness

Category	Subcategories	Quotes
Manner of raising awareness	**Subcategory 1** Curriculum or another formal manner	**North Macedonia** "Through the lectures in vocational subjects, especially through practical work and communication with students." **Bulgaria** "Yes, it is. Our experts educate children from 3rd to 12th grade on how to react in case of disasters." **Spain** "Through information in the classroom."
	Subcategory 2 Informally	**North Macedonia** "Commonly, after the end of the danger, workshops are realized with the students within the nonobligatory activities where they are introduced to the characteristics of the danger type and the possibilities for prevention, help

		and support during risk situation, as well as the behavior during the danger." **Bulgaria** "Only through internal initiatives that happen rarely. Not included in the curriculum." **Spain** "Educational talks are held to raise awareness and sensitize the educational community of the IES Jules Verne about the importance of establishing action protocols and training habits to solve emergencies of various kinds."
	Subcategory 3 Social media and campaigns	**North Macedonia** "Through the CMC website, as well as through hot and cold wave reporting campaigns. There was a campaign with sticking labels in buses for the number 195 which is for citizens to report the need for an assessment of the security of a facility and its functionality." **Bulgaria** "Publishing on the school website and also with messages in an electronic diary."

Eleven respondents from all countries responded that raising awareness is embedded in the curriculum and that it is always done in a formal manner. Two respondents from Bulgaria did not reply to this question. Eleven respondents from all countries responded that they raise awareness informally, while six respondents from North Macedonia and Bulgaria stated that they use social media and campaigns to raise awareness.

VII Including children, youth, and persons with disabilities

The answers from the final subsection were summarized in two categories:

—**Including children, youth, and persons with disabilities in crisis management planning; and**

—**Informing for children, young people, and persons with disabilities.**

In the first category of this final sub-section – Including children, youth, and persons with disabilities we defined three sub-categories (which along with the quotes are shown in table 20).

1. No;
2. Yes; and
3. Yes, except including persons with disabilities.

Table 21. Including children, youth, and persons with disabilities

Category	Subcategories	Quotes
Including children, youth, and persons with disabilities	**Subcategory 1** No	**North Macedonia** "Not enough." "We do not have a good organizational planning for crisis, and we do not have experience of including people with disabilities." **Bulgaria** "Only administrative and teaching staff, taking into account the age of our students – up to 13 years."
	Subcategory 2 Yes	**North Macedonia** "According to the legislation, the school has developed a Crisis Management Plan that includes and envisages the specifics of the school - education and accommodation of students with hearing impairments. That means involvement of students and their parents (deaf people also) in crisis planning and coping." **Bulgaria** "Yes, a student council representative." **Spain** "Yes, an explanatory sheet with pictograms is given to the teaching staff of the centre, and the non-teaching staff, if necessary, with the steps to be taken in the case of an emergency."
	Subcategory 3 Yes, except including persons with disabilities.	**North Macedonia** Children and young people are included in the crisis management planning, but not people with disabilities."

Twelve respondents from North Macedonia and Bulgaria stated that they do not include children, youth, and persons with disabilities in crisis management planning. Fifteen respondents from all countries (among which all respondents from Spain) stated that they do include everyone in the planning process, while two respondents from North Macedonia stated that they include children and young people, but not persons with disabilities in the planning process. One respondent did not reply.

In the second and last category of this final sub-section – Information for children, young people, and persons with disabilities we defined three sub-categories (which along with the quotes are shown in table 21).

1. Social media;
2. Meetings and personal communication; and
3. No information.

Table 22. Information for children, young people, and persons with disabilities

Category	Subcategories	Quotes
Information for children, young people, and persons with disabilities	**Subcategory 1** Social media	**North Macedonia** "The students get most of the information from social media, but that information isn't adjustable to their language skills, age, and educational capabilities. The professional staff from our institution provides some informational help to make this information understandable for them." "Through the PRD's website and social media." **Bulgaria** "Social media (Facebook, website)." **Spain** "The information is offered through the center's website, forums, and social network."
	Subcategory 2 Meetings and personal communication	**North Macedonia** "Through conversation and meetings of the students' community." **Bulgaria** "In school classes, trainings, evacuations, various educational projects and more." "Live training with practical and visual materials and in real situations step-by-step play, involving all groups and generating interest in the subject through drawing contests such as pantomime, skill classes, and other forms." **Spain** "In class activities."
	Subcategory 3 No information	**North Macedonia** "We do not inform them."

Fourteen respondents from all countries stated that they use social media for informing children, young people, and persons with disabilities. Ten respondents from all countries noted that they use meeting and personal communication for this purpose. Only one respondent from North Macedonia mentioned that they do not inform children, young people, and persons with disabilities regarding crisis management planning, prevention, and so on. Five persons did not reply.

3.Conclusions and recommendations

The analysis of the semi-structured interviews gave an in-depth information regarding the inclusion of children, youth, and persons with disabilities in the crisis management process, as well as the current situation of each country in the field. A coherent and comprehensive summarization of the results' analysis is given in the previous chapter.

Based on the responses of the respondents we can give the following recommendations:

—All institutions should have developed measures, standards, and regulations for identification of danger;

—Each institution should have a human, technical, and financial resources for aiding students with disabilities;

—Special platforms and special structures should be developed as a response structure.

—A self-protection plan should be developed for the internal security of each organization;

—The logistical chain of supply should be based on projects and donations apart from the public procurement;

—In case of crisis, there should be standard operating procedures, which should rely on the internal management structure of each institution;

—Notification and response systems should be adjusted for persons with disabilities, youth, and children;

—Domestic and foreign experts should be used as external aid;

—There should be formal staff trainings of the work force for crisis management and preparedness;

— Organizations should use projects for additional funds, if needed;

—A software should be created for identification of risk profiles in a manner suited for people with disabilities as well;

—For risk assessment, humanitarian and technical-technological measures should be used, as well as risk assessment in the workplace;

—Each organization should have an emergency response plan that should contain preventive measures, mobilization, protection, and rescue;

—Each organization should have predetermined procedures for emergencies for persons with disabilities;

—Partnerships should be made for prevention, preparedness, and response;

—There should be joint risk assessments with other institutions;

—The cooperation with the health, education, social, and security sector should be increased;

—Awareness should be raised through curricular activities beside social media and informal raising of awareness;

—Children, youth, and persons with disabilities should be included in crisis management planning;

—Children, youth, and persons with disabilities should be informed and trained with a special software according to their preferences.

VI CASE STUDIES

1. Case Study - Public school Clara Campoamor. A pioneering centre in prevention and reaction in disasters and emergencies

The Clara Campoamor School is an infant and primary education centre located in Alcorcón (Madrid) that has become a reference point in the field of prevention and self-protection in emergency and disaster situations.

In the Community of Madrid, following the approval of Royal Decree 89/2014 of 24 July, subjects related to civil protection and emergencies have been included in the infant and primary education curriculum.

The city council of Alcorcon (Madrid) has already been a pioneer in the inclusion of content on prevention and first aid in schools. In 2012, an initiative led by the Platform for Civic Education in Emergencies was approved, called "School Education in Emergencies" to deal with all issues of self-protection, emergencies, first aid, and road safety education through schools, to help prevent emergencies and know how to act in case they occur.

The project is starting to be developed in 36 schools in this municipality.

Thanks also to the voluntary collaboration of members of the Local Police of the municipality, the Fire Service and Civil Protection, the centre becomes a reference point for dealing with those contents that are not yet included in the official curriculum.

In 2014, it achieves the quality seal in child safety, being the first public centre in Spain to achieve it. After passing an audit and carrying out the indicated corrective measures.

In May 2014, evaluating the initiatives of this and other centres, the government of the Community announced the inclusion of emergency and risk prevention education content in the primary school curriculum of the Community of Madrid. All schools in Madrid now teach this content.

This audit has analysed aspects such as the configuration of the school itself, its immediate surroundings, the equipment, the distribution of spaces, as well as the planning and preparation for emergencies, all for preventing and reducing the risks to children in the school environment. Avoiding falls at different levels, trapping, impacts with furniture, electrical contacts, custody, and accessibility to dangerous products, abuses in the nearby urban environment, analyzing the location of pedestrian crossings and the situation of access to the school, are examples of the parameters analyzed by the child safety audit.

This action is in addition to the School's Self-Protection Plan, a plan that is exemplary in its content and especially in its implementation, where training and drills will be given and conducted by members of the Inspection and Prevention Unit of the local Fire Service.

2. Case Study - School Self-Protection Week at the National School of Civil Protection

Almost 1,300 children between 8 and 11 years of age participated in several practical activities regarding prevention and self-protection in emergencies, in the 13th edition of School Self-Protection Week at the National School of Civil Protection.

These activities are organized by the General Directorate of Civil Protection and Emergencies of the Ministry of Interior with the slogan "Educate to prevent".

The aim is to train through games and practical activities pupils from 8 to 11 years of age for six days closely together by teachers and tutors.

The modules and hands-on workshops were related to how to act in emergencies as emergency landings, fires, or school evacuation for diverse reasons.

Children were divided in groups and received a previous informative talk by at least two expert monitors for every emergency case. Then they started the practical activities.

Emergency landing:

It is a module focusing on learning a plane evacuation. An inflatable 20-metre plane with its evacuation ramps was used for practice, and an evacuation drill was held.

Road Safety Education Circuit and Vehicle Rollover Simulator:

Simulating an urban scenario, students ride their bikes around a circuit, where their attitudes, skills and knowledge are put to the test in the face of accidental traffic.

Fire extinction zone:

A fireman explains basic notions to the students to help them to prevent and act in front of a possible fire in their house or in the school.

Simulation of school evacuation:

Through a training video, students will learn the rules and instructions to follow in order to evacuate the school premises where they are. After watching the video, a practical evacuation exercise is performed to end the day.

More than 20,000 young people have received training in disaster prevention and response during the 13 workshops held in recent years.

3. Case study - Fire in a psychiatric hospital in Sofia, Bulgaria

The fire started at 5 a.m., while 51 people were accommodated in the psychiatric hospital, and 7 nurses were on duty in the building. The fire signal was transmitted a little later, at 5:05 a.m. The fire started from huts located near the hospital.

The manager of a pulmonary hospital located a few meters from the psychiatric hospital – is among the first to come to the rescue. The volunteer, together with staff at the psychiatric hospital, began evacuating the patients, placing in groups of 2 or 3 people on beds, so that they would not be cold. The beds used forthe evacuation had wheels, which made it easier for them to move. Later, an elevator and a ramp were used, escaping the building. The volunteer and staff members of the psychiatric hospital managed to evacuate 12 persons with psychological disabilities until an ambulance and fire department arrived. "People sheltered them right away. I personally opened the rooms to them. I put them in two or three beds to keep them warm."

45 firefighters and 10 fire trucks were dispatched to the site.

The evacuation of patients lasted for about an hour, and it took about two hours to locate the fire, but fire crews remained in place.

Doctors examined all 51 people who had been evacuated. No one was hurt. However, the fire spread in seconds. It also reached a neighboring building and two cars.

After several hours of fighting the flames, it was revealed that a serious damage had been done to the psychiatric hospital, and its roof had been completely destroyed.

The patients were later evacuated to other health facilities. After further examinations, it was found that people were not injured. Due to the specificity of their disease, all patients were provided with psychological assistance after the incident. Watching people with mental disabilities for a longer period of time revealed that none of the 51 people had a worse psychological impairment as a result of the fire.

4. Case study - Explosion at the largest medical establishment in Bulgaria

The explosion occurred in the largest hospital in Bulgaria early in the morning. Minutes before 4 a.m., an explosion occurred in the orthopedic department of the hospital, followed by a fire. Two patients died immediately, and dozens needed to be evacuated as a matter of urgency.

The basic version of the explosion is related to the system that supplies oxygen to patients.

The two men, 55 and 68, who died were patients in the hospital. Both were close to the blast.

32 people from the orthopedic department were evacuated by the hospital's team of doctors and nurses on duty. Their evacuation was carried out several times with wheelchairs and movable beds. During the evacuation, the premises were smoky, and towels soaked in water were given to the patients to place on the nose and mouth. Immediately after the evacuation, patients were placed in other departments of the hospital where they were examined. It was later determined that the explosion and fire did not affect their condition.

Patients from other departments evacuated themselves by leaving the building.

Within minutes, 12 firefighters, over 30 police officers, several ambulances came to the scene. Half an hour later, the fire was extinguished.

The swift response of the hospital team, the staff on duty, especially the doctors and everyone else, should be noted. The medical staff is familiar with the situation of the building and how to evacuate in the event of fire, floods, earthquakes, accidents, etc.

Without the courageous intervention of the medical staff and, later, the firefighters, we could later speak of a national tragedy.

5. Case study - fire protection training DUPOR "Partenija Zografski" – Skopje

Various types of trainings in primary and secondary schools are conducted across the whole territory of North Macedonia in order to raise the level of coordination and joint action in case of accidents, organized by the “Crisis Management Center”, the “Protection and Rescue Directorate”, “Emergency Medical Services”, and the “Red Cross”.

One of the trainings in primary and secondary schools is the fire protection training. The training consists of integration of a theoretical and practical part.

In the theoretical part, students are introduced to the risks and causes of fires, the dangers of fire in public buildings and homes, their form, as well as the means used to extinguish them. The theoretical part comprises interactive lectures during which students ask

questions, most of them related to home fires and give examples of being directly or indirectly involved in such instances. They are also given tips on how to prevent fire in a timely manner.

The practical part consists of exercises and simulations.

The exercises include a fire extinguisher presentation with the use of a fire extinguisher - PP S9 in which students are actively involved. They are learnining and practicing how to put out a fire.

According to the law on protection and rescue, all schools in North Macedonia have school evacuation plans. The fire simulation with the evacuation of students and teachers is carried out according to previously planned scenarios, in accordance with the developed school evacuation plans.

The simulation starts after the sound of the school`s bell. Students are organized in small units led by responsible people outside the school building through an evacuation route in the event of an accident.

In addition to rescuing and evacuating students and staff from the building and locating sites at a safe location, this rescue simulation also includes first aid for captured injured people (eg. one with fractures, one with an unconsciousness or disoriented one) - task of the Red Cross units.

6. Case study -School Traffic Units DUCOR "Partenija Zografski" – Skopje

The project for establishment of School Traffic Units supported by the Ministry of Interior of the Republic of North Macedonia and the City of Skopje enables active involvement of students from ASUC "Boro Petrusevski" - Skopje and DUCOR "Partenija Zografski" - Skopje in traffic related activities.

The students were attending a training, which consisted from a theoretical and practical part.

The objective of this training was to enable the students to assist all traffic participants (pedestrians, cyclists, and other traffic participants).

The theoretical part of the training was conducted by a professor from the school ASUC "Boro Petrusevski" - Skopje - graduated traffic engineer.

The practical part was carried out by authorized officials from the Ministry of Interior of the Republic of North Macedonia. The practical part of the training was conducted at the school`s autodrome.

During all sessions (24 teoretical lessons and 12 practical exercices) a sign language interpretator was present,a teacher in DUCOR Partenija Zografski Skopje, responsible for helping deaf students understand what is being said during the training.

The students, along with the professor, the head of the school traffic unit, and the sign language interpretator, were carrying out the planned activities in the field, for a period of four months, along with authorized officials from the Ministry of Interior of the Republic of North Macedonia.

It was a very good and new experience for all students, because they were working together (deaf students and students without hearing problems). Working in such teams contributed to the development of inclusive awareness and broke down all the prejudices and

stereotypes. Their work and friendship greatly contributed to meeting the social and cultural dimension of this project.

This school traffic unit was promoted by the Mayor of the City of Skopje, where numerous television stations, print and electronic media were present, following the promotion in the City Park in Skopje. Many other eminent guests were invited and present at the promotion, including the Republic Council on Road Traffic Safety in the Republic of North Macedonia.

7. Case study -Education on natural disasters in elementary school "Stiv Naumov"– Skopje

Curricula in certain subjects in primary school deal with the terms: natural disasters, disasters, earthquakes, volcanoes, tsunamis, etc., the causes of their occurrence, and their consequences. The disadvantage of the curricula and plans for primary education is the lack of content related to the acquisition of knowledge, skills, and techniques for prevention and rescue in case of some kind of natural disaster.

According to the Law on Protection and Rescue, the school's obligation is training, teaching and practice in protection, rescue and assistance; organizational, technical and other measures and use of technical and other means for immediate personal and collective protection of people. The series of earthquakes that hit Skopje and several other cities in Republic of North Macedonia in August and September in 2016, inevitably imposed the need to raise awareness among the students about the risk of natural disasters and conduct comprehensive education to reduce the risk of natural disasters in schools, especially preparation to reduce the risk of earthquakes. Due to the fact that most of the teachers do not have experience with earthquakes, the education conducted in the school was intended for both the teaching staff and administrative-technical staff.

In cooperation with the Red Cross of City of Skopje, in the period from September-November 2017, an Exercise Plan was prepared with a scenario for a natural disaster- earthquake and an evacuation exercise. The school was also supported by the Police, Fire Service, and First Aid Service.

The Exercise was preceded by theoretical preparations of students and employees.

The theoretical part: the education for students and employees, in order to gain knowledge and skills on how to conduct safe evacuation with the least possible number of victims, was realized through training "General information for disasters", display of photos and videos of real earthquakes, simulation games for extinguishing fire with fire extinguisher devices and instructions for action (individual activities) during the tremor, during the evacuation, and immediately after it.

All the involved participants (students and employees) were familiarized in detail with the Exercise Plan and the Evacuation Plan, with their roles and activities, in order to successfully implement and realize the Exercise Plan. The employees provided guidance and safety instructions to students, while students followed the given rules and guidelines.

Practical part: on 9th December, a general rehearsal was conducted in order to determine the weaknesses and shortcomings in the organization and implementation of the

Plan; and the Rescue Team from the CC of the City of Skopje immediately pointed out the shortcomings in order to overcome them.

On 17th December 2017, the school bell marked the start of the evacuation exercise which lasted for 40min, during which, in addition to practicing the process of safely leaving the school building, the participants (870 students and 78 staff) also, observed extinguishing fire and giving first aid to andtreating the injuries of two injured people.

The experience from the successfully conducted exercise pointed out the importance of the cooperation between different sectors, and the regular practice of the methods for reducing the risk of natural disasters, which should be an integral part of the educational programs for the youth.

The result of the Exercise is a Natural Disaster Management Manual- earthquake, which was prepared by the students and which contains students' activities during the tremor, during the evacuation, and after it.

In each classroom there is one Manual visible to everyone.

8. Case study -Internal organizational structure for emergency preparedness plan "Stiv Naumov" – Skopje

Students safety has been a priority in the school and a key factor in achieving the educational function. The 1989 UN Convention on Rights of the Child guarantees inalienable rights to children in all circumstances. During natural disasters, when children are most vulnarable, their rights need to be maintained and respected by the state and all the other parties involved in case of emergency.

In order to strengthen the capacity of the school and the personal capacities for the welfare of the population, especially the children, the school "Stiv Naumov" has started cooperation with the First Children's Embassy in the world "Megjashi" and the associate partner "Save the children" within the project "Let's take our own rights in our own hands".

The project was implemented in two phases:

The first phase (July-December 2018) consisted of a three-day training, where two teachers and one associate from the school participated, as well as members from the Local Self-Government. There were also participants from Debar and Vinica. The training was conducted by experts in the field of crisis management, disasters, disaster risk, disaster risk management, emergency services, preparedness, and disaster risk reduction plan. The emphasis of the training was on introducing the participants with children's rights in conditions of emergency, inclusive disaster risk reduction and implementing disaster risk reduction into the education system. After the training, the school representatives conducted dissemination, attended by 10 teachers and three expert associates, as well as training for 15 students. In accordance with the training, the trained students formed school units for civil protection-Young Rescuers, who were given tasks to prepare checklists in order to identify all the urban-technical shortcomings of the school that could pose potential health and safety hazard to all the students in the school.

In December 2018, the experts conducted a supervision of the already existing elaborations, plans, regulations, and procedures for disaster preparedness in schools, whereby weaknesses were identified, and guidelines and recommendations were given in order to

improve them. The next activity was a workshop "Emergency preparedness plan –EPP", where one expert associate and two teachers participated, and the acquired knowledge was practically applied through preparing EPP. At the same time, the Team of Young Rescuers was divided in five groups of three students, and they detected all the hazards in the school and submitted a report to the principal with all the suggestions for the school infrastructure development. The trained students shared the knowledge and information with their classmates, which is a step forward to including the youth in the process of preparing, updating, and implementing the plans.

The second phase (January-June 2019) was implementation of the acquired knowledge from the training, which resulted practically in improvement of the internal structure for conducting the EPP documents and defining the roles and competencies through identifying the employees' skills and knowledge, as well as acting in accordance with the given guidelines and recommendations. The project activities were completed in June 2019, with an insight into the manner and dynamics of the implementing the recommendations from the experts who conducted the supervision.

Raising public awareness about children's needs in case of emergency becomes part of the Annual Curriculum of the school, and taking into consideration that children and youth can significantly contribute to the process of disaster prevention, response and recovery, it is necessarily for them to be encouraged about that.

The participation of the youth with special needs, as well as parents/guardians in the disaster risk reduction education becomes a vision of the school which has been, literally, inclusively oriented.

VII PARAMETERS FOR DEVELOPMENT OF AN OER WITH DISASTER RISK MANAGEMENT PROCEDURES FOR CHILDREN, YOUTH, AND PERSONS WITH DISABILITIES

IT tools for a disaster risk management training document need to be developed and used as a guideline by local authorities, regular schools, institutions for persons with disabilities-special schools, CSO's & NGO's, education ministries, and communities in Europe. Devoting IT tools to a certain topic is very important these days, taking into consideration that we live in the digital era. Making those tools accessible for persons with disabilities is another challenge that needs to be faced.

On figure 20 below it is shown that 71 or 82.6% of the respondents in North Macedonia have Internet access very often; 65 or 75.6% of the respondents have a personal computer or laptop very often; 73 or 84.9% of the respondents use a smart phone very often.

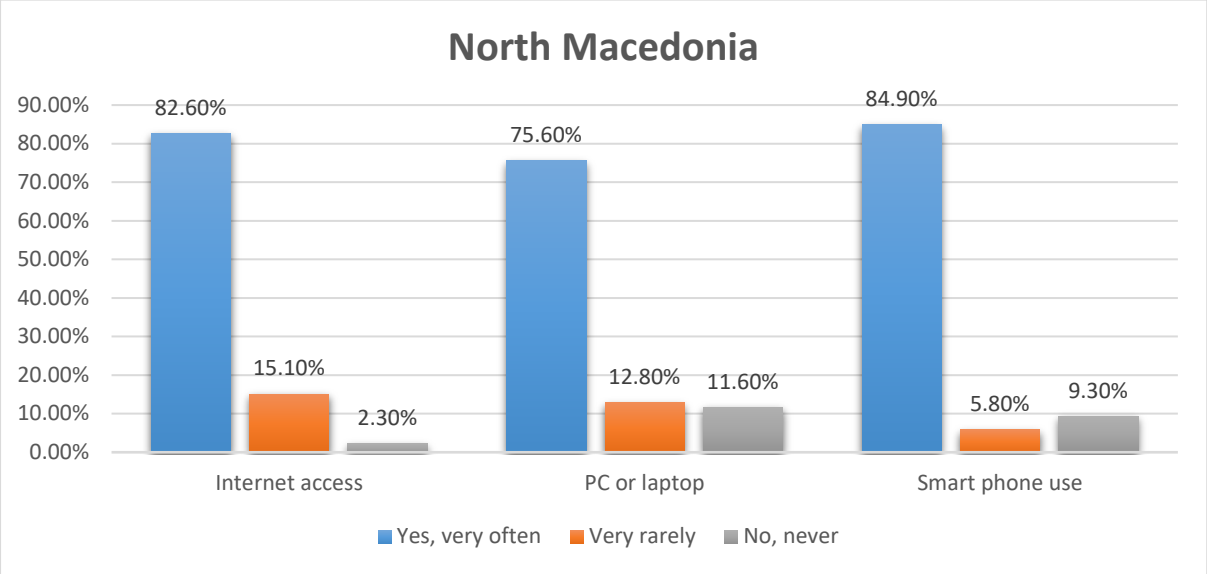

Figure 20. Use of Internet, PC or laptop, and smart phones in North Macedonia

On figure 21 below it is shown that 22 or 64.7% of the respondents in Bulgaria have Internet access very often; 13 or 38.2% of the respondents have a personal computer or laptop very often; 17 or 50% of the respondents use a smart phone very often.

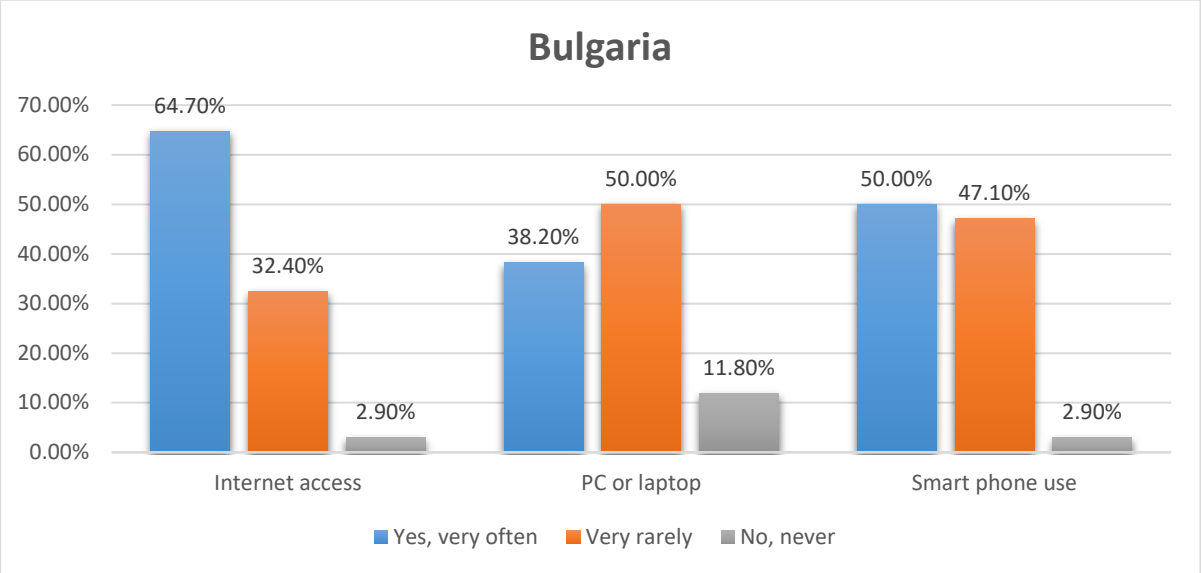

Figure 21. Use of Internet, PC or laptop, and smart phones in Bulgaria

On figure 22 below it is shown that 100% of the respondents in Spain have Internet access very often; 18 or 80% of the respondents have a personal computer or laptop very often; 19 or 95% of the respondents use a smart phone very often.

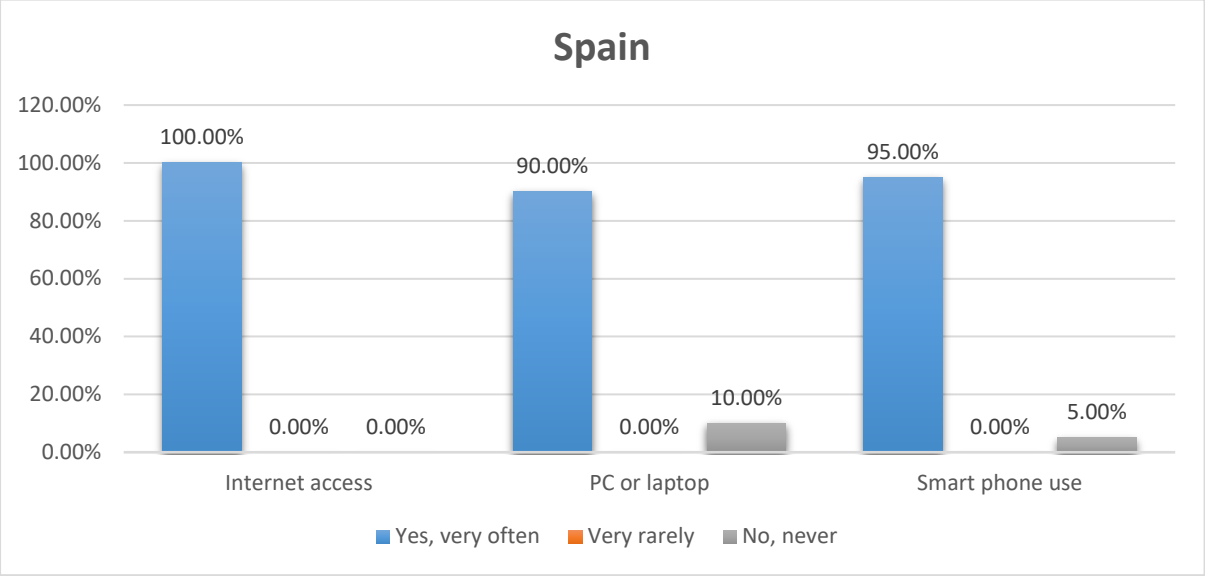

Figure 22. Use of Internet, PC or laptop, and smart phones in Spain

On figure 23&24 below it is shown that 31 or 29.1% of the respondents in North Macedonia find video games as an appropriate way to learn and prepare themselves to respond appropriately to natural disasters; 47 or 55.7% find a mobile app as an appropriate tool to prepare them to respond appropriately to natural disasters.

14 or 41.2% of the respondents in Bulgaria find exercises as an appropriate way to learn and prepare themselves to respond appropriately to natural disasters; 27 or 79.4% find a mobile app as an appropriate tool to prepare themselves to respond appropriately to natural disasters.

12 or 60% of the respondents in Spain find video games as an appropriate way to learn and prepare themselves to respond appropriately to natural disasters; 15 or 75% find a mobile app as an appropriate tool to prepare themselves to respond appropriately to natural disaster.

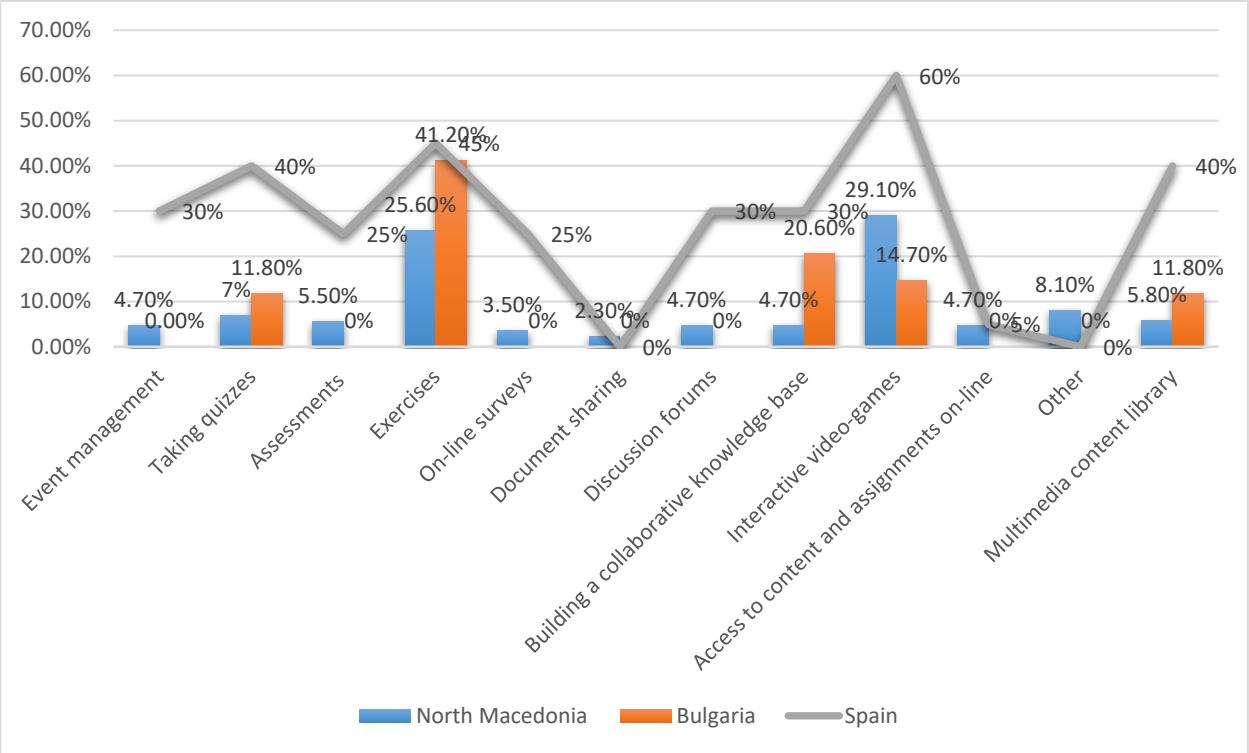

Figure 23. Use of video-games and mobile apps in learning about natural disasters in North Macedonia, Bulgaria, and Spain

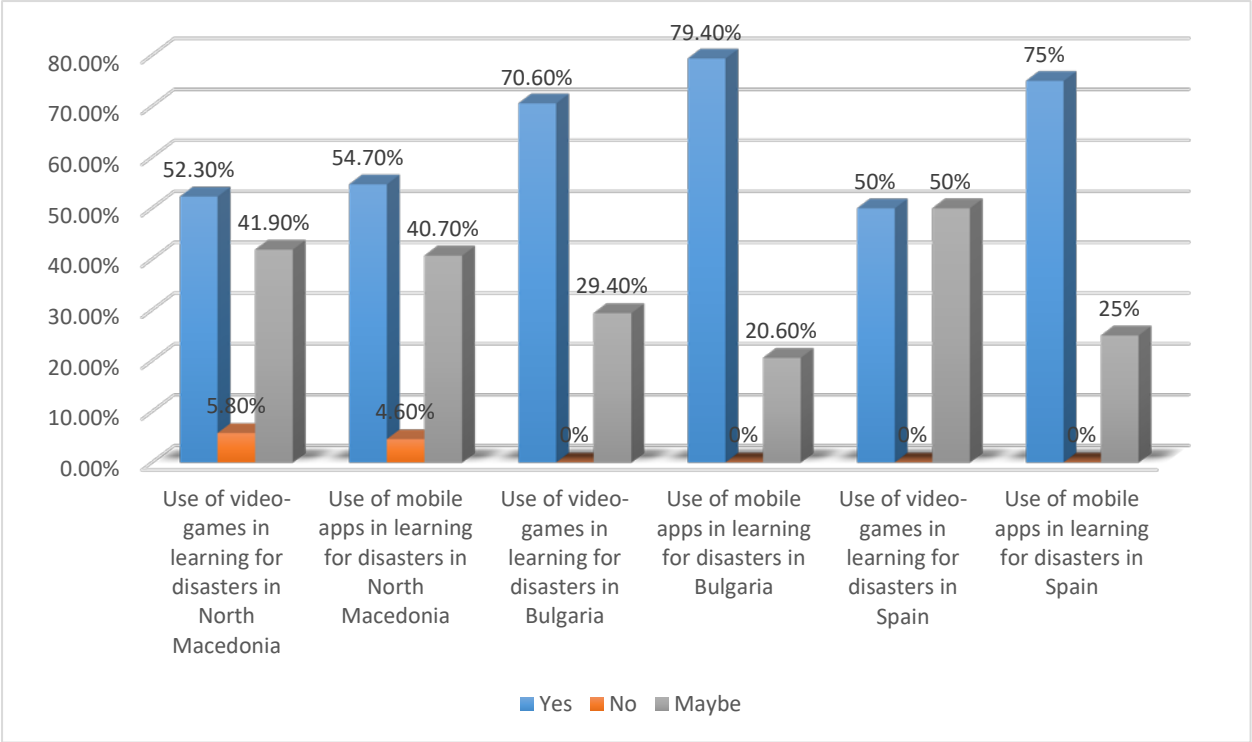

Figure 24. Features a mobile app should include (according to respondents in North Macedonia, Bulgaria, and Spain)

Conclusions:

—Most of the respondents have Internet access, and use their own computers or laptops and smart phones.

—Most of the respondents find video games and exercises as an appropriate way to learn and prepare themselves to respond appropriately to natural disasters.

Recomendations:

—There is a need to develop a video game and mobile app for our target group as an appropriate way to learn and prepare themselves to respond appropriately to natural disasters.

—The OER should contain information, procedures, and documentation for teaching children and youth how to respond properly in a case of natural disasters (fire, earthquakes, floods). It needs be adapted for use by children and youth with disabilities (impaired hearing and impaired vision)..

The e-learning platform (OER) will provide accessibility and easy use by:

—Part of general information related to the project and the institutions participating in the project;

—Part of the data for the coordinators from the institutions participating in the project;

—Translation of all OER content in English, Macedonian, Bulgarian, and Spanish, ensuring that the platform can be also used by other participant organizations and other relevant stakeholders, all over the world;

—Creating a simple but very effective and easy-to-use menu structure;

—Each item, inserted in the OER platform is accessible for visually impaired and hearing impaired;

—Making all results of the field and desk research publicly available;

—The OER platform is tested during a short staff training course and the resulting feedback will be used to make improvements, if necessary.

—The OER will contain the following sections regarding the part connected to the fires, floods & earthquakes:

- Set of documents and information in PDF and Word format required for education and learning of children, youth, and adults, including children, youth, and adults with disabilities (impaired hearing and impaired vision) how to respond properly in case of natural disaster testing for dealing with fires;
- Open database with web interface for data collection that will be used for statistics and evaluation of the success of the training, using a mobile interactive training game in case of fire;
- PPT presentations
- YouTube video
- Have the opportunity to conduct interactive tests with predefined answers that will change with each repetition of the testing of theknowledge gained from documents, interactive games;
- Link to download the mobile interactive game.

VIII CONCLUSION AND RECOMMENDATIONS

1. Conclusions and recommendations from the curriculum analysis

In primary schools in North Macedonia, in most of the grades there are subjects that contain topics regarding natural disasters and other accidents.

In primary schools in Spain, the topics related to natural disasters contain basic features, prevention and protection measures, response protocols, first aid, road education, as well as prevention of traffic accidents.

In primary schools in Bulgaria, the content of the curriculum includes the basic ideas, main characteristics, consequences, protection and rescue measures.

In this regard recommendations for institutions are to improve the formal education system in each of the countries regarding protection and self-protection, particularly through expanding the current curriculum with subjects and topics related to trainings in situations of disasters, separately for fires, earthquakes, and floods.

In secondary schools in North Macedonia, the curricula contain several topics regarding basic features of different disasters, prevention, and protection of disasters.

In secondary schools in Spain, there are dispersed elements mainly of a preventive nature that are included among the contents of several subjects.

In secondary schools in Bulgaria, the content of the curriculum related to natural disasters is included in several subjects where the textbooks have sections or separate lessons for different natural disasters.

Recommendations for relevant stakeholders are to expand curricula with compulsory subjects that provide teaching and learning of strict and precise procedures for protection and self-protection in case of fires, earthquakes, and floods as natural disasters.

Regarding persons with disabilities, in North Macedonia, there are different curricula for special high schools according to which, among other topics and activities, students learn how to apply collective protective measures and how to use personal protective equipment and necessary security measures for personal protection.

On the other hand, in Spain and Bulgaria, there are no separate curricula for students with disabilities, and consequently these students get familiarized with the different kinds of disasters and with self-protection in situations of disasters through the current subjects within the curricula.

Recommendations for institutions refer to improving the formal education system regarding self-protection, by expanding curricula with compulsory subjects that provide teaching and learning of the procedures for self-protection particularly in case of fires, earthquakes, and floods. There is a need to be provide inclusive access and non-discriminatory participation of pupils and students with disabilities in disaster prevention, preparedness, and response in accordance with their abilities and their special needs.

2. Conclusions and recommendations from the quantitative analysis

—Most of the participants are not familiar with the possible ways that will give alerts for the dangers and the instructions for protection, rescue, and assistance.

—Most of the partitcipants need trainings about possible ways to report and warn about dangers and give instructions on protection, rescue, and assistance.

—Most of the participants have been in some natural danger so far.

—Most of the participants do not have experience and knowledge regarding evacuation plans.

—Most of the respondents have Internet access, and use their own computers or laptops and smart phones.

—Most of the respondents find video games and exersices as an appropriate way to learn and prepare themselves to respond appropriately to natural disasters.

Recommendations:

Relevant stakeholders need to produce a document that will give more information to our target group or the professionals who are working with them regarding:

- protection and rescue system;
- possible ways that will give alerts for the dangers and the instructions for protection, rescue, and assistance.

Relevant stakeholders need to develop a training content for disaster protection and other accidents, because it is needed for our target group;

The Red cross provides trainings on certain topics related to our project activities, posible future conection, collaboration, and consultance with them in line with good practices experience exchange.

Relevant stakeholders need to develop materials with basic information about earthquakes, floods, and fires.

3. Conclusions and recommendations from the semi-structured interviews

The largest number of respondents noted that they notice danger through observation of abnormal behaviour. The largest number of respondents from North Macedonia and Bulgaria use security guards and video-surveillance in order to maintain the internal security of the organization. All ten respondents from Spain noted that they use a self-protection plan in which the internal security parameters for the organization are defined.

Almost all respondents from all countries responded that their organizations organize formal staff trainings. Most respondents from all countries stated that they use internal plans, life safety as a priority; and secondly stabilization of the incident.

Almost all respondents from all project countries stated that they use humanitarian measures. All thirty respondents from North Macedonia, Spain, and Bulgaria stated that they have good cooperation with the health, social, educational, and security sector.

One third of all respondents from all countries responded that raising awareness is embedded in the curriculum and that it is always done in a formal manner. A large number of

respondents from North Macedonia and Bulgaria stated that they do not include children, youth, and persons with disabilities in crisis management planning.

Recommendations:

—All institutions should have human, technical, and financial resources for aiding students with disabilities.

—Special platforms and special structures, as well as a self-protection plan should be developed as a response structure.

—The logistical chain of supply should be based on projects and donations apart from the public procurement and in case of crisis, there should be standard operating procedures which should rely on the internal management structure of each institution;

—Notification and response systems should be adjusted for persons with disabilities, youth, and children and there should be formal staff trainings of the workforce for crisis management and preparedness;

—A software should be created for identification of risk profiles in a manner suited for people with disabilities as well;

—Each organization should have an emergency response plan that should contain preventive measures, mobilization, protection and rescue, and predetermined procedures for emergencies for persons with disabilities;

—There should be joint risk assessments with other institutions;

—The cooperation with the health, education, social, and security sector should be increased;

—Awareness should be raised through curricular activities beside social media and informal raising of awareness, and children, youth, and persons with disabilities should be included in crisis management planning;

—Children, youth, and persons with disabilities should be informed and trained with a special software according to their preferences.

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