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Statutory Declaration

I hereby declare that I have written this master thesis independently, that I have not used other than the declared sources, and I have explicitly marked all material which has been quoted either literally or by content from the used sources.

The following sources were used to ensure accurate spelling and wording: DeepL, Scribbr, and Quillbot.

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Vienna, November 2024

Dorotea Markovska

Preface

We would like to express special gratitude to our mentor ao. Univ.-Prof. Dr. Marion Rauner, who advised and accompanied us during the entire process of the realization of this work. We are also thankful for always responding to our questions and guiding us throughout the process of writing this thesis. We are grateful that through this project we had the opportunity to learn more about the structure, organizations, and institutions of our homeland.

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LIST OF ACRONYMS

5G	Fifth Generation of Wireless Cellular Technology
AD	Joint- Stock Company (Акционерно дружество)
ADM	Archer-Daniels-Midland
AEC	Nuclear power plant (Атомна електрическа централа)
BDZ	Bulgarian State Railways (Български държавни железници)
BEH	Bulgarian Energy Holding (Български енергиен холдинг)
BG	Bulgarian
BHC	Bulgarian Helsinki Committee
BiH	Bosnia and Herzegovina
BNR	Bulgarian National Radio (Българско национално радио)
BNT	Bulgarian National Television (Българска национална телевизия)
BRC	Bulgarian Red Cross (Български червен кръст)
CEZ	Czech Energy Plants
CEM	Council for Electronic Media (Съвет за електронни медии)
COATNET	Christian Organizations against Trafficking Network
COVID-19	Coronavirus Disease 2019
DANS	State Agency “National Security” (Държавна агенция “Национална сигурност“)
DDoS	Distributed Denial of ServiceDDoS
DHL	Dalsey-Hillblom-Lynn
DRM	Disaster Risk Management
DRR	Disaster Risk Reduction
DRPC	Danube River Protection Convention
EAD	Limited Liability Company (Еднолично акционерно дружество)
ECHO	European Community Humanitarian Aid Office
ECURIE	European Community Urgent Radiological Information Exchange Platform
EEA	Energy Efficiency Agency
ENAC	Emergency Notification and Assistance Convention

EOOD	Limited Liability Company (Еднолично Дружество с ограничена отговорност)
EPA	European Protection Agencies
ESO	Electricity System Operator (Електронен системен оператор)
ESTE	Emergency Source Term Evaluation
ERCC	Emergency Response Coordination Centre
EU	European Union
EUR	Euro
EVN	Energy Supply of Lower Austria
ExEA	Executive Environmental Agency (Изпълнителна агенция по околната среда)
FM	Frequency Modulation
FSCP	Fire Safety and Civil Protection (Пожарна безопасност и защита на населението)
GDBOP	Directorate General for Combating Organized Crime (Главна дирекция борба с организираната престъпност)
GDP	Gross Domestic Product
GHG	Green House Gases
GHz	Gigahertz
Ha	Hectare
HF	High Frequency
IARU	International Amateur Radio Union
ICAR	International Commission for Alpine Rescue (Международна комисия по алпийско спасяване)
ICPDR	International Commission for the Protection of the Danube River
IOM	International Organization for Migration
IS	Islamic State
JCRR	Joint Commission for Restoration and Relief (Межведомствена комисия за възстановяване и подпомагане)
km ²	Square Kilometre
km	Kilometre
MHz	Megahertz

Mio	Million
MOEW	Ministry of Environment and Water (Министерство на околната среда и водите)
MoI	Ministry of Interior (Министерство на вътрешните работи)
NATO	North Atlantic Treaty Organization
NBU	New Bulgarian University
NEK	National Electric Company (Национална електрическа компания)
NCZPB	National center of Infectious and Parasitic Diseases (Националният център по заразни и паразитни болести)
NGO	Non-Governmental Organization
NIGGG	National Institute of Geophysics, Geodesy and Geography (Национален институт по геофизика, геодезия и география)
NPP Kozloduy	The Kozloduy Nuclear Power Plant (Атомна електрическа централа “Козлодуй”)
NSBOP	National Office for Combating Organized Crime (Национална Служба за борба с организираната престъпност)
OMV	Austrian Mineral Oil Administration Stock Company
PhD	Doctor of Philosophy
POS	Proof-of-Stake
PSS	Mountain Rescue Service (Планинска спасителна служба)
PVC	Polyvinyl chloride
RHI	Regional Health Inspectorates (Регионален здравен инспекторат)
RODOS	Realtime Onboard Dependable Operating System
RTA	Road Transport Accidents
SEGA	State e-Government Agency (Държавна агенция Електонно управление)
S-HELP	Securing Health Emergency, Learning, Planning
SOF	Sofia International Airport
SOF	Special Operations Forces
TEC	Thermal power station (Топлоелектрическа централа)
TWh	Terawatt hour
UNIVIE	University of Vienna

UNWE	University of National and World Economy
US	United States
USD	United States Dollar
VC	Vinyl-chlorine
VHF	Very High Frequency
ViK	Water Supply and Sewage (Водоснабдяване и канализация)
VOR	Very High Frequency Omni-Directional Range
WP	Work Package

1. INTRODUCTION

Emergencies and disasters often happen without clear warning and could be costly to the affected parties. The impact could result in human, economic, material or environmental losses. The level of exposure and vulnerability of the different parties varies as well as so does the scale and scope of the disaster. Therefore, it is important for the responsible organizations to prepare and establish predefined procedures and response solutions for all types of local or national emergencies (Tagarev, 2015).

In light of that, in 2013 a cooperation project “FP7-SEC-2013-1: S-HELP” (Securing Health Emergency, Learning, Planning) was launched to provide EU-wide (European Union) standardized emergency management (Rauner et al., 2018, pp. 2-8).

This master thesis is based on:

- Section 7 of the deliverable 2.11 “S-HELP Interoperability Standard” (Rauner et al., 2016b), University of Vienna, Austria, part of the S-HELP project.
- Section 3.2 of the deliverable 2.4 “Draft Skills Taxonomy Template“ (Rauner et al., 2015), University of Vienna, Austria, part of the S-HELP project.

The S-HELP project was led by the University College of Cork, Cork, Ireland and includes seven work packages, that were elaborated by the following institutions and companies and described in Figure 1:

- Accelopment AG, Switzerland
- Department of Health Northern Ireland, United Kingdom
- Future Analytics Ltd., Ireland
- Graz University of Technology, Graz, Austria
- Health Services Executive, Ireland
- Lund University, Sweden
- Magen David Adom Israel, Israel
- University of Vienna, Vienna, Austria
- Vector Command Ltd., United Kingdom

The University of Vienna participates in the project, primarily on Work Package 2 under the direction of ao. Univ.-Prof. Dr. Marion S. Rauner. The aim is to develop a comprehensive basis of vocabulary, definitions, standards, and regulations that could support the decision-making process within the emergency response organizations. This should also improve the communication between the organizations that participate in the S-HELP project. The mentioned basis can be accessed under: <https://wiki.univie.ac.at/display/SHelp/>. Additionally, a decision support tool was developed to facilitate the decision-making (Rauner et al., 2016a, pp. 413-416).

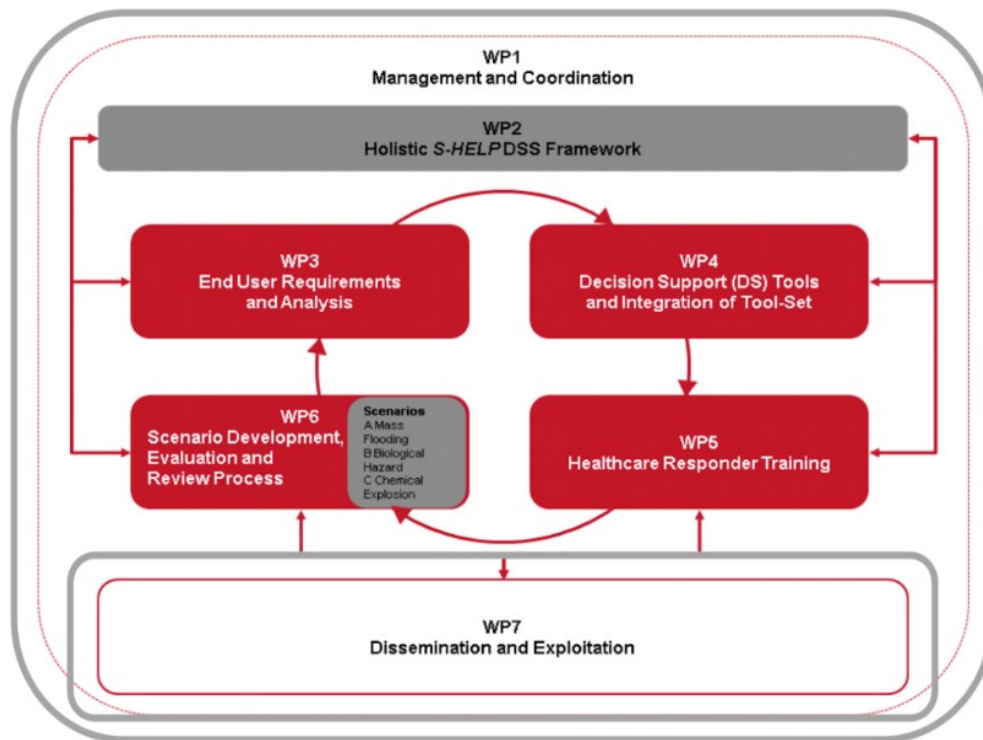


Figure 1: Outline of the seven Work Packages from the S-HELP Project Factsheet

Source: S-HELP (2013, p. 2)

As part of the Work Package 2.11, Section 7 from Rauner et al. (2016a), the emergency management structures of multiple European countries were analyzed through the master theses of students of the University of Vienna (UNIVIE). Those were supervised by ao.Univ.-Prof. Dr. Marion S. Rauner and are as follows:

- England, Ireland, Israel, Northern Ireland, and Austria (Golovescu, 2016)
- Czech Republic and Slovakia (Gullar, 2017)
- Germany and Switzerland (Kirchenpfenig, 2017)
- Bosnia and Herzegovina, Serbia (Predic, 2018)
- Romania (Muqaj, 2018)
- France (Gazarek, 2018)
- Poland (Napieralska, 2018)
- Norway (Holubar, 2018)
- Croatia (Stojcic, 2018)
- Italy (Jank, 2019)
- Sweden (Bubeck, 2019)
- The Netherlands (Bubeck, 2019; Weindorf, 2019)
- Denmark (Ortner, 2020)
- Belgium (Diglio, 2021)
- Finland (Walter, 2022)
- Spain (Heyd, 2023)

Furthermore, at the time of writing of this master thesis, the following works regarding other countries are also in progress (2024):

- Luxembourg (Sokol, 2024)
- Portugal (Ibanez Severo, 2024)
- Hungary (Kovacs, 2024)

The structure of this master thesis follows a similar structure to the other master thesis mentioned before. Section 1 is the introduction to the thesis. Section 2 defines the research questions and the methods on which the thesis is based. Section 3 presents a brief overview of the responsible organizations on the international emergency management level. Section 4 is focused on depicting the structure of the main responding groups: 1) Core Responders, 2) Non-Core Responders, and 3) Co-Operating Bodies and their respective organizations. This section also aims to define the differentiation among those groups. Section 5 is focusing on the country-specific factors and organizations. It gives a broad overview of Bulgaria's characteristics, past disasters, and future risks. In addition, there is a subsection with a critical analysis of the influence of the Russo-Ukrainian conflict on Bulgaria. Furthermore, in this section, there is a comprehensive description of all relevant stakeholders in emergency management in Bulgaria. In the next part, Section 6, there is a critical comparison of the emergency management structures among Bulgaria and other Central and Eastern European countries (Romania, Serbia, and Bosnia and Herzegovina). In the final part, Section 7 provides a summary of the results and the conclusion of this master thesis.

2. RESEARCH QUESTIONS AND METHODS

This thesis is a continuation of the taxonomy by Rauner et al. (2015a) from the S-HELP project. The topic was researched based on literature analysis using databases such as the library of the University of Vienna, UNWE (University of National and World Economy) Library, ResearchGate, ProQuest as well as Central and Eastern European Library. In addition, publications on the official websites of governmental organizations in Bulgaria, the European Commission, as well as Google Scholar were cited. The reference management software Citavi was used to store the information.

The following research questions were defined:

- How is the emergency management structure of Bulgaria characterized in accordance with the defined taxonomy?
- How prepared is Bulgaria to face climate change and the more frequent disasters?
- Which are the main stakeholders in Bulgaria for emergency management on a national and regional level?
- How has the Bulgarian emergency management structure developed compared to other Central and Eastern European countries such as Romania, Serbia as well as Bosnia and Herzegovina?

The presented facts and figures in this master thesis are based on the available information at the time of writing. The most recent information resources were used, with most of the sources being published within the last ten years. The information is available either in English or Bulgarian. Alterations in the structures and stakeholders are possible, as e.g., the responsibilities of the ministries change and the activities of public and private organizations are changing.

3. GENERAL STRUCTURE OF EMERGENCY RESPONDERS

This section depicts the structure of international emergency management explained in chapter 3 of deliverable 2.4 “Draft Skills Taxonomy Template “(Rauner et al., 2015) developed in the course of the “FP7-SEC-2013-1, S-HELP: Securing Health.Emergency.Learning.Planning.” project (Walter, 2022).

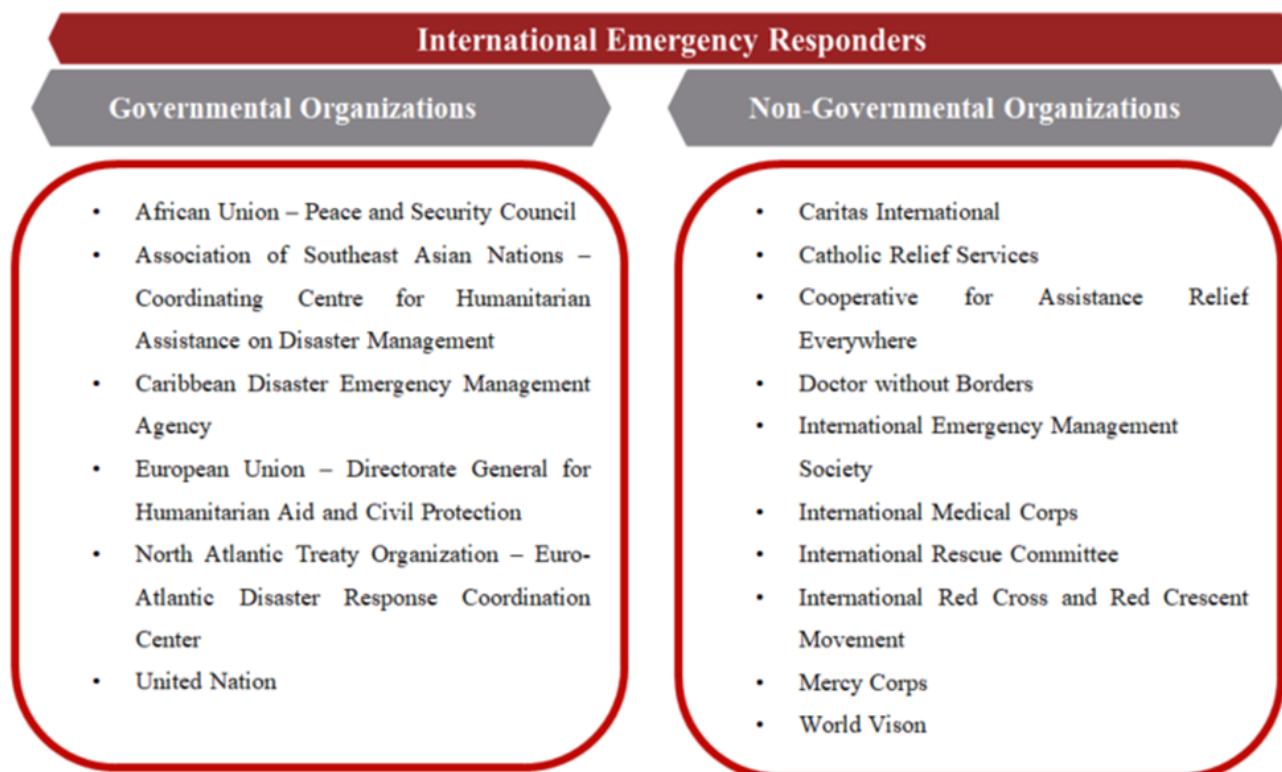


Figure 2: Overview of International Emergency Responders

Source: based on Rauner et al., (2015, p. 16)

Bulgaria has made significant progress in establishing a legal framework for reducing disaster risks; nevertheless, as the environment is constantly changing the country has to be able to respond and adapt accordingly.

4. GENERAL STRUCTURE OF NATIONAL EMERGENCY RESPONDERS

This section is based on a review of the deliverable 2.11 “S-HELP Interoperability Standard“, which was compiled by a workgroup from the University of Vienna, Vienna, Austria for the “FP7-SEC-2013-1, S-HELP: Securing Health.Emergency.Learning.Planning“ project.

The main groups of emergency responders are subdivided into 4.2 Core Emergency Responders, 4.3 Non-Core Emergency Responders, and 4.4 Co-Operating Bodies.

4.1 Revision of Emergency Responders of the Skills Taxonomy

All the adaptations made by the team of the UNIVIE lead by ao. Prof. Dr. Marion Rauner are presented in Table 1. Compare to the Rauner et. al. (2016a), emergency responders can be divided into three main groups: 1) core emergency responder, 2) non-core emergency responders, and 3) co-operation bodies.

Adaptation to Main National Emergency Responders	
Original: Rauner, et al. (2016)	Adaption: Gullar (2017) and Kirchpfening (2017)
Non-Core Responders	
Electricity Providers • Infrastructure • Resource	Electricity Providers • Transmission System Operator • Providers with own Networks • Electricity Producer
Gas Providers • Infrastructure • Recourse	Gas Providers • Transmission System Operators • Distribution Network Operator • Storage Companies
Co-Operating Bodies	
	Cyber-Security was added
	Adaption: Holubar (2018)
Port Operators	Port Operators • Body of Water • Main Port • Operator
Other Transport Operators • Private ○ Bus Service ○ Patient Transport ○ Taxi Service ○ Public Passenger Transport Executives • Public ○ Passenger Transport Executives	Other Transport Operators • Private ○ Bus Service ○ Patient Transport - Organization - Transport Service ○ Taxi Service ○ Public Passenger Transport ○ Executives • Public ○ Passenger Transport Executives

Table 1: Adaptions to Main National Emergency Responders in other Master Theses

Source: Rauner et al. (2016a), adapted by Gullar (2017), Kirchpfening (2017), and Holubar (2018)

4.2 Core Emergency Responders

The category Core Emergency Responders includes the government, the health care organizations, and the emergency services, as illustrated in Table 2. On a strategic level, the people should be protected by the government in case of an emergency. It is important that the potential risks are evaluated and the necessary measures are taken. Also, the government has to timely inform and warn the people about the dangerous situation. On a medical care and medical treatments level, the health care organizations should offer medical services. On an operative, on-site level, the emergency services should offer rapid response to emergencies and be the first responders. Both the health care organizations and the emergency services should have specialized infrastructure, equipment, and trained professionals. All of the emergency services have predefined structures, processes, and decision-making procedures (Coppola, 2015).

• Government ○ National Level ○ Provincial Level ○ Municipal Level ○ Government Agencies • Health Care Organizations ○ Primary Care - Emergency Department - General Practitioners - Primary Care Centres ○ Secondary Care - Hospitals ○ Other Health Care Organizations - Blood banks - Laboratories - Pharmacies • Emergency Services ○ Emergency Medical Services ○ Fire Brigade ○ Police • Search and Rescue Teams
--

Table 2: Taxonomy of Core Emergency Responders

Source: Rauner et al. (2016a)

4.3 Non-Core Emergency Responders

The category Non-Core Emergency Responders includes the organizations, that are not directly responsible for managing disasters, but rather have a supporting and consulting role. Such organizations could be parts of the government, the ministries, and agencies. Other organizations are the strategic health care providers and health authorities. Another type are the critical infrastructure providers such as gas, fuel, electricity, heating, food, water, transportation, information, and communication services. The Non-Core Emergency responders are essential in providing expertise, ensuring of a working government and public safety, as explained in Table 3 (FLOODsite, 2007; Digital Humanitarian Network).

- Government
 - National Level
 - Provincial Level
 - Municipal Level
 - Government Agencies
- Strategic Health Authorities
- Health Care Organizations
 - Secondary Care
 - Outpatient Clinics
 - Specialized Doctors
 - Tertiary Care
 - Specialized Care Centres
 - Other Health Care Organizations
- Energy Providers
 - Electricity Providers
 - Transmission System Operator
 - Providers with own Networks
 - Electricity Producers
 - Fuel Providers
 - Infrastructure
 - Resource

- Gas Providers
 - Transmission System Operator
 - Distribution Network Operator
 - Storage Companies
- Heating Providers
 - Infrastructure
 - Resource
- Food and Beverage Providers
 - Producers
 - Wholesalers
 - Retailers
- Information and Communication Services
 - Internet Providers
 - Cable Internet Providers
 - Mobile Internet Providers
 - Postal Service Providers
 - Private
 - Public
 - Radio Providers
 - Infrastructure
 - Telephone Providers
 - Cellphone Providers
 - Landline Telephone Providers
 - Television Providers
 - Digital Video Broadcasting – Cable
 - Digital Video Broadcasting – Satellite
 - Digital Video Broadcasting – Terrestrial
 - Two-Way Radio Providers
 - Digital Radio for Authorities and Organizations with Safety Tasks
 - Amateur Radio and Open Frequencies

- Transport Services
 - Airport Operators
 - Main Civilian Airports and Operator
 - Main Military Airports and Operator
 - Port Operators
 - Body of Water
 - Main Port
 - Operator
 - Railway Operator
 - Infrastructure
 - Resource
 - National Level
 - Provincial Level
 - Road Providers
 - Road Type
 - Operator
 - Other Transport Operator
 - Private
 - Bus Services
 - Patient Transport
 - Organization
 - Transport Service
 - Taxi Service
 - Public
 - Passenger Transport Executives
- Waste Disposal Services
- Water and Sewage Undertakers
 - National Level
 - Provincial and Municipal Level

Table 3: Taxonomy of Non-Core Emergency Responders

Source: Rauner et al. (2016a), Gullar (2017), Kirchpfening (2017), and Holubar (2018)

4.4 Co-Operating Bodies

Co-operating bodies are the final group of national emergency responders. Those are: military, environmental agencies, the media, cyber security, and the voluntary sector, which will be explained in details in the following subsection. The role of the co-operating bodies is to provide relevant information to core emergency responders and offer support and assistance during a crisis situation, such as in the recovery process (Rauner et al., 2016b). The detailed list is provided in the Table 4.

• Military ○ Regional Command Structure ○ Joint Command Structure ○ Agencies • Communities • Environmental Agencies ○ Biological Agencies ○ Cosmological Agencies ○ Geodynamical/Meteorological Agencies • Media ○ Online Media - Blogs - Content Communities - News Sites - Podcast - Videos
○ Print Media ○ Radio Broadcast ○ Social Media ○ Television Broadcast • Cyber Security • Voluntary Sector ○ Donors ○ Humanitarian Organizations ○ Volunteers

Table 4: Taxonomy of Co-Operating Bodies

Source: Rauner et al. (2016a) and Holubar (2018)

5. EMERGENCY MANAGEMENT STRUCTURE IN BULGARIA

This section explains the Bulgarian emergency management structure based on the one described in the previous sections. In subsection 5.1 are the country description and characteristics. The subsection 5.2 reviews the main and most frequent disasters in the past decades in Bulgaria, in subsections 5.3 and 5.4 the core and non-core responders of Bulgaria are presented and in the final 5.5 subsection description of the Bulgarian Co-Operation bodies is detailed.

The importance of study and research of disasters is becoming an increasingly important topic in light of climate change and the intensity of negative natural events affecting individuals and communities (Maeva, 2023).

5.1 General Data about Bulgaria

The Republic of Bulgaria is situated in the Southeast Europe, in the northeastern part of the Balkan Peninsula. South of Danube River and west of the Black Sea. Bulgaria is sharing its borders in the south with Turkey and Greece, in the north with Romanian, Serbia, and Republic of North Macedonia to the West (Eighth National communication on climate change, 2022, p. 34).

The country has a population of 6,445,481 people and the surface of 110,000 square kilometres as of 2023. The population density is 58.1 people/km² (National Statistical Institute, 2023b). The biggest and most populated city is Sofia, the capital with 1,280,334 inhabitants or 19.9% of the population followed by Plovdiv (631,516 inhabitants), Varna (430,847 inhabitants), and Burgas (378,596 inhabitants). The tendency in the last decade is that most of the population is moving from rural to urban areas. About 73.50% of the total country's population resides now in urban areas and 26.5 % in rural ones, respectively leaves these villages depopulated or with just a few inhabitants. Despite the depopulation, the country is facing the problem of an ageing population and negative natural increase which is 6.8‰ as for year 2023 (National Statistical Institute, 2023).

According to the country's administrative-territorial structure, there are six statistical regions in the Republic of Bulgaria, the North Western, North Central, North Eastern, South Western, South Easter, and South Central. Furthermore, there are 28 administrative districts as shown in figure 3 and 265 municipalities (National Statistical Institute, 2023).

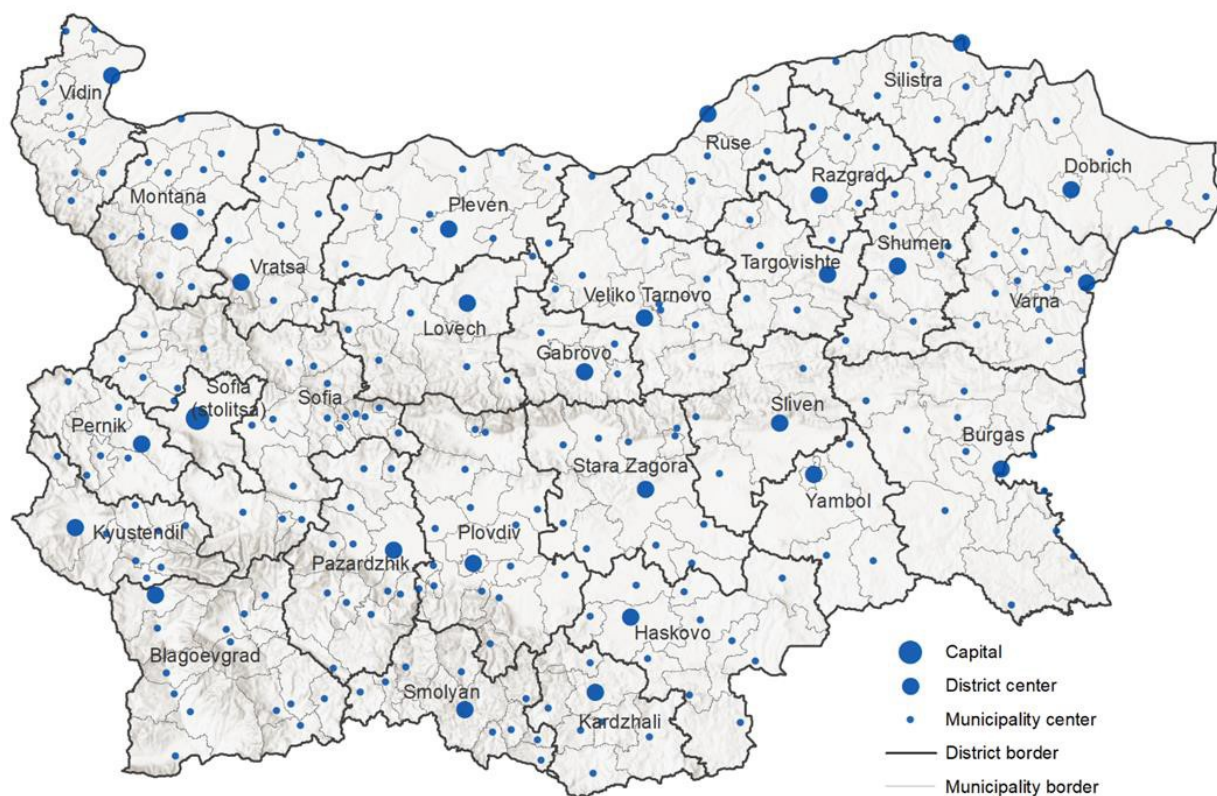


Figure 3: Administrative districts in the Republic of Bulgaria as of December 2023

Source: National Statistical Institute, 2023

Bulgaria is a parliamentary republic. The head of the states is a generally elected President, who is also Supreme Commander of the Armed Forces (Tagarev, 2015, p. 9).

Bulgaria is a member of the European Union since 2007, the United Nations since 1955 and in 2004 Bulgaria became a member of the North Atlantic Treaty Organization (NATO).

Bulgaria has unusually varied climate conditions due to the influence of the strongly different continental and Mediterranean climates as well as diverse landscape. The climate has four distinct seasons and varies with altitude and location (Marinova, 2017, p. 3).

About 60% of the total area is covered with hills and mountains. The mountains are part of the Alpine-Himalayan mountain chain situated on two continents - Europe and Asia. About 34% of the country's territory is covered with forests (Eighth National Communication on Climate Change, 2022, p. 11), which in case of crisis and disasters are seen as an obstacle for the rescue teams to reach the affected territory.

5.2 Disasters in Bulgaria

In the literature, there are different definitions of “disaster”, the use depending on the focus of the research. The definition of the American sociologist Quarantelli is the following:

“When we discuss disasters, we are referring to those crisis occasions generated by the threat of or the actual impact of relatively sudden natural and technological agents (such as earthquakes, floods, hurricanes, volcanic eruptions, tornadoes, and tsunamis as well as toxic chemical spills, radiation fallouts, large-scale explosions and fires, structural failures, massive transportation wrecks and crashes, etc.) that have significant negative social consequences” (Quarantelli, 2001, p. 332).

5.2.1 Natural Disasters

Disasters caused by natural phenomena or human activities often occur in the Republic of Bulgaria. Their social and economic consequences can have a significant adverse effect on the development of the country and its economic growth. Therefore, disaster risk reduction is very important for sustainable development (Simova et al., 2018, p. 1199).

The disasters in Bulgaria can be classified into the following main groups: danger from seismic hazards, danger from floods, danger of landslides and danger from forest fires.

5.2.1.1 Danger from Seismic Hazards

The territory of Bulgaria is characterized by high seismic activity and is among those classified as "second-rank hazardous areas" on earth (National Plan for Disaster Protection, 2010, p. 4).

The National Institute of Geophysics, Geodesy and Geography ("Национален институт по геофизика, геодезия и география", NIGGG) at the Bulgarian Academy of Science (Българска академия на науките) provides real time information about the seismic activity in Bulgaria and surrounding regions. Operational capacity of the NIGGG includes the National Seismological Service - its network includes 14 stations and observatories and two local networks: 1) Provadia and 2) Kozloduy. This is the only system in Bulgaria that determines in real time the earthquake parameters in the country and the neighboring areas. The operative information is immediately submitted to the Council of Ministers, different ministries, the public, mass media, and all other interested institutions (Climate Change Adaptation Strategy, 2018, p. 36). In addition, the Bulgarian Academy of Sciences produced in 2006, a new probabilistic seismic hazard map for Bulgaria to provide a basis for recommendations in Eurocode 8 (Climate Change Adaptation Strategy, 2018, p. 28).

5.2.1.2 Danger from Floods

Floods are common natural disasters in the territory of the Republic of Bulgaria. They can cause enormous damage as they affect urban territories, productive agricultural land and forests (Simova et al., 2018, p. 1199). Crises caused by floods accounted for the largest relative share, up to 56.05% based on the period from 2010-2019 (Berberova, 2021).

The risk of flooding is high along the rivers Danube which is the biggest one with total length of 470 km, following from Iskar with 368 km, Maritsa 321,6 km, Tundja 349,5 km, Kamchia 244,5 km, Arda 241,3 km, Mesta 125,90 km, and others. The most recent experience shows that under certain conditions such as heavy rainfalls in the summer and the fall, even small rivers can cause significant damage and human casualties (Tagarev, 2015, NSI, 2021).

When a devastating flood hit Bulgaria after heavy rain in early July 2005, 57 municipalities suffered considerable material damage in the Rousse, Dve Mogili, Lukovit, Pravetz, Mezdra, Roman and Svoje. Municipalities were declared to be in a "State of Disaster". The population

residing in the affected zones was estimated at about 2,000,000. 62 bridges were destroyed, 48,425 residential and public buildings flooded; 36 water-supply pipes damaged; 68 landslides were activated. These were just some of the damages incurred. The Bulgarian Government estimates the costs of the floods to approximately 150 million Leva (93 million dollars, based on average currency exchange for year 2005) (Exchangerates, 2024; Reliefweb, 2005).

In 2006, exceptional weather conditions caused the springtime floods in part of the Upper Danube (e.g., the Morava River Basin) and, primarily, in the Central Danube (the Tisza and Sava) and Lower Danube (The Analysis of Danube Floods, 2008), as well as many residential areas, especially in the cities of Vidin, Nikopol, Ruse, and Silistra. It was necessary to evacuate over 2,000 people (The Analysis of Danube Floods, 2008). The government had to declare the state of emergency in 21 municipalities.

In recent years, Bulgaria has been pestered by an exceptionally high number of floods. Just in 2014, a total of 602 separate inundations in different locations occurring as a result of heavy rainfalls and breaking of dams, with 18 deaths recorded (Sekulova & van den Bergh, 2016). In Table 5, the major floods in Bulgaria since 2006 are described. The leva to dollar estimations are based on the average yearly exchange rate for each respective year, with the source being “exchangerate.org.uk”.

Floods	Date	Description	Damages
Zar Kaloyan	06.07.2007	Intense rainfall (291 mm in 24 hours, with the highest intensity of 80 mm in 2 hours) caused overflow and dam wall failure of the storage pool Ezerche. The wave reached the town of Tsar Kaloyan, 10 km downstream, claiming 8 lives and causing serious damage to buildings, infrastructure and agricultural land.	Economic damage: 22 mio. Lev (1,022,599 EUR); 8 deaths, 15 buildings destroyed; 70% of infrastructure, including transport damaged.
Bisser demolition of the dam, dam Inovo, Harmanli	06.02.2012	Intense rainfall combined with intense snowmelt caused a sharp rise in water levels, the water surface was covered with ice, which blocked the spillway and causes the dam to overflow and break its wall.	Economic damage: 8 mio. Lev (4,077,887 EUR); 10 deaths; destroyed and damaged buildings, damaged transport infrastructure, flooded industrial and commercial areas in Harmanli.
District Asparuhovo, Varna	19.06.2014	The flooding was caused by a very high intensity rainfall, 382% of the average monthly rainfall fell within 5 days. The main flooding occurred in two small catchments where riverbeds were blocked as a result of human activity, such as illegal buildings and illegal landfills.	Economic damage: 23 mio. Lev (11,732,898 EUR); 13 deaths; 108 buildings collapsed, including 48 residential and 33 commercial buildings; 228 buildings from which 1 275 residents were evacuated.
Miziya	03.08.2014	Intense rainfall after a prolonged wet period caused flooding along the river Scat.	Economic damage: 6 mio. Lev (3,060,756 EUR); 2 deaths, 103 severely damaged and collapsed buildings and over 1200 flooded buildings.
Kameno and Burgas	25.10.2017	Intense rainfall (250 mm in 24 hours) caused the dam to break, combined with the heavily modified agricultural land.	Economic damage: 2 mio. Lev (1,022,600 EUR); 5 deaths, 7 small dams damaged or breached, 9 settlements affected 5 of them seriously.

Table 5: Major floods in Bulgaria since 2006

Source: Technical Annex: Flood risk assessment in Bulgaria 2022; Exchangerate.org.uk, 2024

5.2.1.3 Danger of Landslides

The territory of Bulgaria is affected by almost all unfavorable and destructive geological processes and phenomena. Landslides are one of the main elements of geological hazards. They are widespread in several key regions: the Black Sea coast, the High Danube River Bank, the Rhodope Mountains., Cenozoic grabens in Southern Bulgaria and the Fore-Balkan area (Ivanov et al., 2022, p. 22) and their effect causes human casualties, buildings', facilities' and historical monuments' destruction, decay of environmental conditions, reduced soil fertility, all of them causing adverse environmental changes (Ivanov et al., 2022, p. 21).

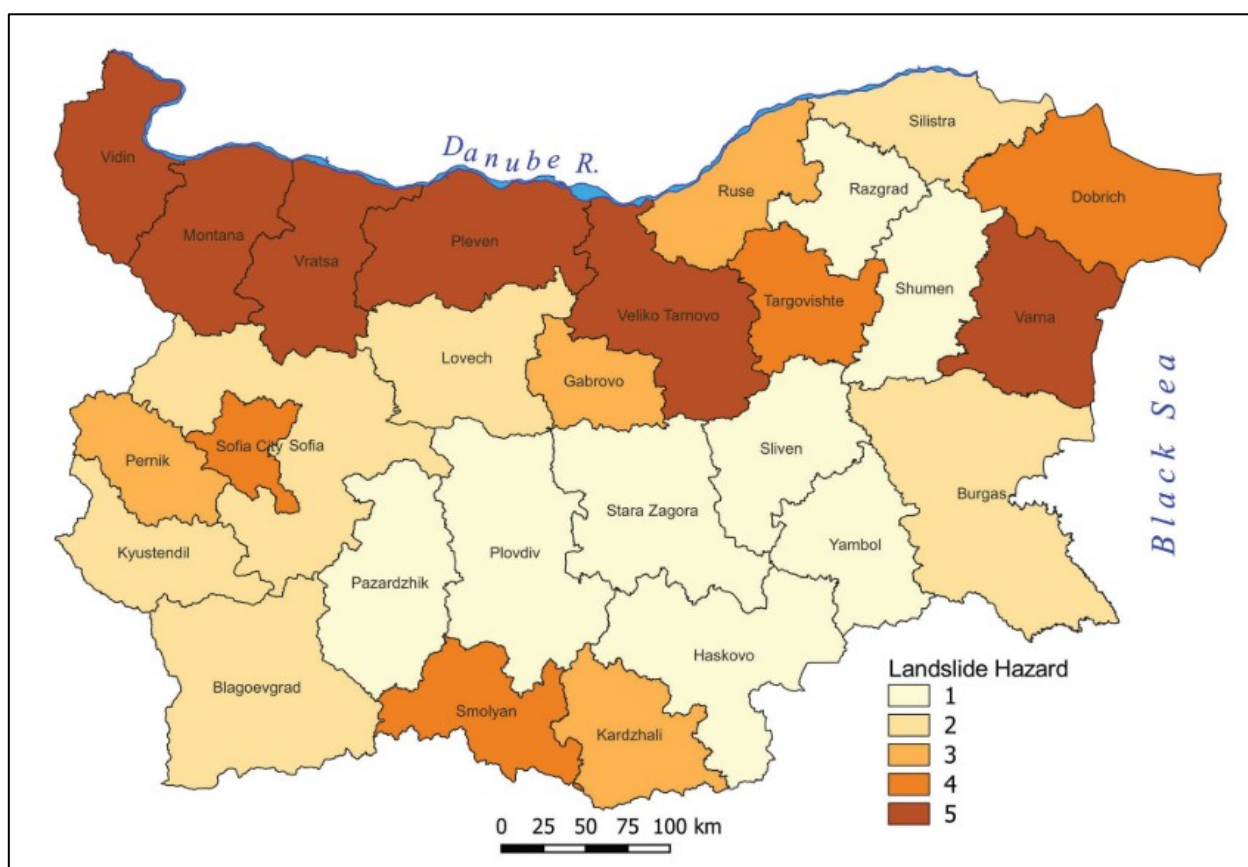


Figure 4: Vulnerability map to hazardous geological processes by districts (Bulgaria)

Source: Landslide risk for the territory of Bulgaria by administrative districts, Ivanov et al, 2022

As of December 31, 2021, a total of 2,207 landslides were registered in the country, of which 829, or 37.6%, were in an active state. Only in the last year, 30 new landslides were registered. The tendency is for their number to grow, while the share of man-made activated landslides also grows (Ivanov et al., 2022, p. 25).

5.2.1.4 Danger from Forest Fires

Base of the analysis of Executive Forest Agency data from 2000 to October 2020 reveals that the majority of forest fires (65%) are up to 40 acres (4 hectare (ha)) in size. Almost a third of fires (27%) are of sizes between 40 and 400 ha (or 4 ha to 40 ha) and 8% are larger. Statistical data show that at the national level there is a 100% probability of a fire of size below 2,000 ha over a 5-year period and an 85% probability of a fire greater than 2,000 ha occurring over a 5-year period (Technical Annex 5, 2021).

Furthermore, according to the Executive Forest Agency database in 2022, the number of forest fires in Bulgaria was 516 and the burnt area is estimated to be 8,126 ha, with 644,6 ha of them burned by crown fires. The direct losses by forest fires in 2022 were estimated at 500,000 Euro, although the average losses for the last 10 years total led to about 1,000,000 Euro (Konstantinov, 2023).

The COVID-19 (Coronavirus disease 2019) crisis is certainly the extraordinary event that affected the entire world including Bulgaria; Bulgarian Parliament declared the state of emergency on 13th of March 2020 (Parliament.bg). As of 12 January 2022, Bulgaria has recorded the world's second highest number of COVID-19 deaths per one million (Stanchev, 2022, p. 5), when daily coronavirus infections in Bulgaria reached a record high of 7,062 and the virus has killed 89 people in the past 24 hours, according to official figures, bringing the total death toll to 31,761. The highest daily records have been reported in Germany with 80,430 new coronavirus infections and 384 deaths (Reuters, 2022). The absolute number of deaths in 2021 (148,000) was the country's second-highest since 1888 (the number of fatalities in 1918 due to war and influenza remains the highest at 151,000) (Stanchev, 2022, p. 5).

5.2.2 Major Accidents

Major industrial and transport accidents in the last 50-60 years are road transport accidents (RTA) and industrial ones (Panteleeva, et al.3719). Data for the period of 1951-2017 indicate that the most common causes of fatal accidents with fatalities in our country were incorrect actions of the driver with 95% and about 2/3 of the RTA were during the day. The number of victims is about 10,000 annually, and about 700 deaths (Dimitrova, 2018, p. 168). According to the national strategy for improving the road safety in Bulgaria for the period 2011-2020, the number of people

killed in road accidents should decrease by 50 per cent and should not exceed 380 people in 2020, and the number of the seriously injured - should not exceed 6,300 people (Dimitrova, 2018, p. 170). Nevertheless, over the period 2012-2021, the number of fatalities in Bulgaria decreased by about 7%, which is much lower than the respective EU decrease as well as the expectations set in the strategic plan (Folla, 2024).

Other significant incidents are industrial accidents. Many of the compounds used in the various industries are explosive or easily flammable, and almost all are toxic to a certain degree (Panteleeva et al., 2021, p. 3719). Often, accidents in the chemical, petroleum, and agricultural enterprises cause poisoning of large numbers of people. (Panteleeva et al., 2021, p. 3719). Such accident is the: Explosion and Fire in a Chemical Complex in Devnya on 1986, where Vinyl-chlorine (VC) gas cloud explosion on the territory of the plant for chlorine and polyvinyl chloride (PVC) production no. 2 in Devnya Chemical Complex in 1986 turned out to be one of the deadliest accidents in Bulgaria (Panteleeva et al., 2021, p. 3720). The vinyl chloride plant was completely destroyed. The laboratories housed in a four-story building were flattened to the ground. A crater remained in the place of the blast. An earthquake magnitude 3, according to the Richter scale was registered in Varna, 30 km away. 18 people were killed, another 19 were seriously injured and admitted for treatment in Varna's hospitals, and hundreds were exposed to the gas and have sought medical assistance (Panteleeva et al., 2021, p. 3720).

Another noteworthy incident was the Hitrino accident in 2016. In early December 2016, a freight train accident at Hitrino railway station led to a declaration of a state of emergency in the area. The train composition transporting propylene and propane-butane tanks, according to the initial data, derailed at a higher than the permitted speed, causing the drawbar of one of the tanks to break through another tank. This led to gas leakage, the formation of a poisonous cloud and the subsequent explosion, destruction and fires in the village (Panteleeva et al., 2021, p. 3721). The adequate actions taken by the authorities and rescue teams limited the casualties to only seven out of 37 severely injured. Adequate actions by the authorities and rescue teams limited the death toll to seven. Dozens were injured, and more than 30 people were admitted to medical establishments in Shumen and Varna (Panteleeva et al., 2021, p. 3721). In the Table 6 is the overview of the early industrial and transport accidents in Bulgaria.

Type	Date	Damages /Losses
The Zgorigrad - Tailings Dam Accident	May 1966	The accident caused an earthquake, 118 dead, many injured, and more than 150 destroyed houses.
Explosion and Fire in a Chemical Complex in Devnya	1986	18 people were killed, 19 seriously injured. It caused an earthquake Magnitude 3, according to Richter.
Toxic substance release	July 2011	Styrene contamination was caused to River Belitsa. Between 2,200 and 2,300 inhabitants were evacuated.
Railway Station Accident	August 2013	Propane-butane tank exploded, 12 people were injured and a fire spread on 50 acres.

Table 6: Overview of early industrial and transport accidents in Bulgaria from 1966 – 2013

Source: (Panteleeva et al., 2021)

5.2.3 Malicious Acts

The threat of terrorism in Bulgaria remains low, foreign terrorist groups take advantage of Bulgaria's active illicit smuggling and trafficking networks to attempt to facilitate entry of terrorists into Europe from the Middle East and South Asia (US Department of State, 2024).

Bulgaria is located on an important traffic route, which connects the valley of the river Marica with Central Europe, Asia, and the Middle East (Tomić, 2017 p. 43), which make the country faced with and be affected by numerous new challenges, such as the war in Ukraine, conflict in Afghanistan, and the conflict in the Middle East as well as the rise of an Islamic state (IS) in Syria and Iraq. The refugee wave through the Balkan countries has been identified as the greatest threat to the security of Bulgaria (Tomić, 2017 p. 44).

Throughout 2022, Bulgaria continued to conduct counterterrorism activities at its borders, executing strong migration control programs, and information sharing with the United States and other partners to identify and apprehend terrorist suspects crossing the borders or illegally residing in the country (US Department of State, 2024).

Notable terrorism cases are the following:

- In May 2022, Bulgarian authorities arrested a Norwegian citizen on suspicion of involvement in a terrorist organization. The arrest was made in coordination with Norwegian authorities, and the individual was extradited in June to Norway, where prosecution is ongoing (US Department of State, 2024).
- In November 2022, Bulgarian prosecutors charged five persons for supporting terrorist acts in connection with the November 13 terrorist attack in Istanbul. Prosecutors alleged that the individuals provided logistical and communications assistance to a perpetrator of the attack, smuggling him out of Turkey to evade authorities (US Department of State, 2024).
- In July 2012, the Burgas bombing was terrorist attack carried out by a suicide bomber on a passenger bus transporting Israeli tourists from the Burgas Airport to their hotels in Burgas. The explosion killed the Bulgarian bus driver and five Israelis and injured 32 Israelis (Maria Bordas & Janos Tomolya, 2015).

5.2.4 Future Challenges

The world faces a range of complex and interconnected challenges that require innovative and collaborative solutions. From climate change and societal tensions to economic stress and rapidly evolving, disruptive technology, we are facing a critical period in global history (Thunderbird, 2024).

5.2.4.1 Old and New Challenges for Bulgaria

Undoubtedly, the main challenge for Bulgaria in 2024 is still the ongoing political crisis since 2020 which prevent important projects and laws to be timely completed. Thus forming a regular government and gradually solving all pressing political, economic and social tasks that only a regular government can solve is of high importance (Kandilarov, 2023).

The demographic picture in Bulgaria is unfavorable at the beginning of the 21st century. It ranks the country amongst those in Europe with negative rate of natural increase, low birth rate, high adult mortality, and child death rate, increasing average age of population (Eighth National Communication on Climate Change, p. 38).

Climate change is expected to have a negative impact on human health, biodiversity, and affects a range of economic sectors, most notably agriculture, energy, forestry, tourism, transport, the urban environment as well as water and sanitation (Plan for Disaster Management in Bulgaria, 2022).

Projected trends show that temperatures in Bulgaria will continue to increase. Under a high-emission scenario, the regional climate model used in this profile estimates that monthly temperatures are expected to increase by 2.2°C up to the 2050s, and 4.4°C up to 2090s (World Bank, p. 9).

Furthermore, the primary hazards that Bulgaria is exposed to are including floods, drought, extreme heat, wildfire, storms, as well as earthquakes and landslides. Projected increases in temperatures are likely to exacerbate the existing risks of temperature related hazards such as heat waves, droughts, and fire. Changes in temperature and precipitation could also affect soil fertility, further affecting food systems. Although mortality from cold temperatures is expected to decrease, higher temperatures, increased risk of heat waves, and droughts are likely to have impacts on temperature related mortality (World Bank, p. 12).

5.2.4.2 Russo-Ukrainian war and the impact on Bulgaria

The following subsection provides analyze of the impact of the Russo-Ukrainian war on Bulgaria. Subsection 5.2.4.1.1 will focus on agriculture, tourism, and energy and 5.2.4.1.2 will describe the challenges and problems from migration and humanitarian point of view.

In terms of national security, the war in Ukraine is the next biggest challenge for Bulgaria, that lead in 2023 Bulgaria-Russia relations continued to deteriorate and reached a climax with the inclusion of Russia in the Bulgaria's National Defense Strategy as a major foreign policy threat (Kandilarov, 2023a).

The President of the National Assembly expressed Bulgaria's deep concern after the unprecedented military actions of the Russian Federation in the Black Sea region. Rosen Zhelyazkov noted that to counter the threat of sea mines in the Black Sea, on 11 January 2024, a Trilateral Memorandum was signed in Istanbul between Bulgaria, Romania, and Turkey to establish a joint mission to counter the mines in Black Sea and expressed hope that this mission would meet its humanitarian goals and contribute to the safety of navigation in the Black Sea (parliament.bg).

5.2.4.1.1 Economic Consequences

The Russo-Ukrainian conflict has both economic and political influence on Bulgaria. From an economic perspective, the most affected industries are agriculture, tourism, and energy (Bulgarian National Television, 2023).

Since the beginning of the Russo-Ukrainian war in 2022, there has been a high socio-economic impact on the agriculture sector in Bulgaria and many farms have struggled. The main reason for this has been the rising production costs, which are caused by the soaring electricity and oil prices, as well as by the prices of the soil and the raw materials (Boshkilov, 2023, p. 2). The energy market in Bulgaria in the first quarter of 2022 saw a 400% spike in the prices compared to the previous price record (24chasa.bg).

The import of higher amounts of cheap Ukrainian grain and sunflower seeds caused economic pressure on the local production, because this influenced the market and the prices dropped. This led to issues for many Bulgarian farmers, as they weren't able to sell their harvest and had their storage facilities remain full. The government reacted by temporarily limiting the import of Ukrainian grain and sunflower seeds in order to support the local farming industry (Boshkilov, 2023, p. 2).

Another factor for the issues in the agriculture sector has been the “Green Deal” within the European Union, which requires the produced seeds to have been grown without the use of certain pesticides and herbicides. This causes the local production to be more expensive, but this is not the case in Ukraine and the imported produce from there could contain those chemicals, which are harmful for people (Ivanova, 2024).

The tourism industry has also been highly affected by the Russo-Ukrainian war, as the majority of the tourists in Bulgaria came from these two countries. The Russian tourists have been hindered by the cancellation of the direct flights connecting them with Bulgaria. This meant that they had to fly either to Turkey or the United Arab Emirates in order to have a flight connection to Bulgaria's main Airports. Another issue that arose was the bank card restrictions imposed by the European Union on Russian cards (National Board of Tourism, 2022).

Another factor for the problems in the tourism sector in Bulgaria has been the destruction of a dam wall in Nova Kakhovka, Ukraine. This event caused the cancellation of a high number of hotel bookings on the Bulgarian seashore in 2023. The number of cancellations was 50% higher

compared to the COVID-19 pandemic. All this came in light of fears of contamination of the water in Black Sea with poisonous chemicals and other biohazards (Bulgarian National Television, 2023).

The energy sector was a particularly discussed topic after the start of the Russo-Ukrainian conflict, as it bore high economic risks for both the European Union and Bulgaria. For Bulgaria, the dependency on natural gas imports from Russia is considerably higher (up to 90%) than that of the EU. Between 1974 and 2019, Russia (then Soviet Union) had almost monopolistic control on the Bulgarian gas market. Currently, Bulgaria does not have local gas production and relies only on imports. Although the consumption is relatively low, around two times lower than the EU average in 2020, there is still a need for imports (Dimitrov, 2024, pp. 47).

After the start of the EU sanctions against Russia, Bulgaria was one of the first countries to be contra-sanctioned by Russia with the request to pay for the imports of Russian gas in Russian Rubles and not as contractually negotiated in Euro or Dollars. Bulgaria did not agree to this change and the gas imports in Bulgaria were halted by Russia. Thus, Bulgaria had to diversify the country's gas suppliers in both contractual and supply line aspects. Imports from Azerbaijan and Greece increased (Dimitrov, 2024, pp. 48).

The EU-wide raise in gas prices was not felt in Bulgaria as hard as in the rest of the EU-members due to multiple factors such as the softer winter, slightly different contractual agreements with past and current suppliers and, probably the most, because of the high drop in consumption, caused by fears of high prices (Dimitrov, 2024, p. 50).

5.2.4.1.2 Migration and Humanitarian Consequences

On February 24th in 2022, Russia attacked Ukraine. It represented the most serious escalation of the Russian-Ukrainian war since 2014. The invasion triggered Europe's worst refugee crisis since World War II and significantly worsened the global humanitarian crisis due to food shortages. Massive sanctions have been imposed on Russia by the European Union, the United States, Britain, Canada and other countries, including traditionally neutral ones like Switzerland, because of the attack (Lazarova, 2023).

Public opinion remains unchanged since 2023. Slightly more respondents (46.7%) believe that the West's "provocation" of Russia and Ukraine's so-called suppression of the Russian-speaking population are the cause of the outbreak of war, in contrast to 43.9% who point to the fact that Russia invaded Ukraine. Nevertheless, Bulgarians strongly maintain that by providing military equipment and weapons to Ukraine, Bulgaria is provoking Russia and moving closer to involvement in the war a view shared by 61.1% of respondents (Institute for Global Analytics, 2024).

After the start of the war over 195,000 Ukrainian citizens had entered Bulgaria, in mid – March the “Programme for the Use of Humanitarian Aid for Displaced Persons from Ukraine” entered into force and over 50,000 Ukrainian citizens were accommodated in hotels or state and local departmental buildings (Korouchev, 2022).

To ensure the creation of an optimal organization and effective coordination among responsible institutions, international, and non-governmental organizations in Bulgaria, as well as to provide timely assistance to individuals with temporary protection, the Council of Ministers has established the Operational Coordination Group (Economic and Social Council, 2024).

Before activating the Humanitarian Aid, most people were accommodated in hotels on the Black Sea coast due to the large number of accommodation facilities and the substantial Russian and Ukrainian speaking communities in Varna and Burgas, which provided support. By 15 July 2022, around 7,400 persons who received temporary protection in Bulgaria had started to work, representing 11.4% of all working-age persons who have been granted temporary protection (Korouchev, R. 2022).

The Government of Bulgaria launched a portal “Bulgaria for Ukraine”, where important information and contacts regarding humanitarian assistance with information about all of the

national and international organizations, housing, how and where to register can be found (The Government of Bulgaria, 2024).

Bulgaria has consistently supported Ukraine in all dimensions: political, financial, military and humanitarian and will support Ukraine for as long as necessary. Bulgarian assistance to Ukraine was stipulated at the highest level by seven decisions of the National Assembly. They envisage providing the Ukrainian side with armored transport equipment, ammunition for automatic small arms, training of Ukrainian military orderlies in Bulgaria, etc. The focus of the decisions of the Bulgarian Parliament was also the planned support in the recovery of the economy, infrastructure and energy, strengthening energy cooperation, and humanitarian aid (parliament.bg).

5.2.5 Legal Basis for Emergency and Disasters

In practice, Bulgarian authorities implement an approach to policy making, based on regular reviews of risks, planning, and implementation. The reviews are focused exclusively on “disaster protection” and lead to the consequent five year programs (Tagarev, 2015, p. 24), e.g., National Program for Disaster Protection of Bulgaria was released by the Council of Ministers in 2018, and will be implemented until 2030 .

The central legislative framework for Disaster Risk Management (DRM) in Bulgaria is based on the *Disaster Protection Act* that was adopted in 2006 and most recently amended in 2017/8. This Act includes provisions for disaster risk assessment, preparedness, response and risk reduction, as well as financial and technical support, and clearly defines the roles and responsibilities of relevant authorities at national and sub-national levels (Climate Change Adaptation Strategy, 2018, p. 17). The Act also provides for the development of a National Disaster Risk Reduction Strategy and the respective National Programme for its implementation and outlines their general contents, terms, and conditions for adoption (Climate Change Adaptation Strategy, 2018, p. 17).

The *Ministry of Interior Act* is concerned with the activities of the MoI related to the protection of the citizen's rights and freedoms, protection of national security, protection against crimes, fire safety, and protection of the population. It assigns specific activities to the General Directorate Fire Safety and Civil Protection (Climate Change Adaptation Strategy, 2018, p. 17).

The *Defense and Military Forces of the Republic of Bulgaria Act* stipulates that the Ministry of Defense ensures, among others, the maintenance and utilization of the armed forces in condition of disasters, as well as participation in overtaking and/or remedy of disaster consequences

(Climate Change Adaptation Strategy, 2018, p. 18). The Minister of Defense takes decisions on the participation of military formations based on request from the relevant state body indicated under the plans for implementation of rescue and emergency recovery works. The minister coordinates these activities with state bodies, local authorities, and related organizations (Climate Change Adaptation Strategy, 2018, p. 18).

The *Ordinance on the Terms, Procedures, and Bodies to Perform Disaster Risk Analysis, Assessment and Mapping* stipulates the terms, conditions, and government entities responsible for the analysis, assessment and mapping of disaster risks on the territory of the Republic of Bulgaria. It defines five potential disaster risks: 1) seismic risk, 2) flood risk, 3) nuclear risk, 4) radiation emergency risk, 5) geological risk such as landslides, rock falls, active faults, and other geological processes. The period for analysis, assessment and mapping is six years and the competent bodies to perform these actions (Climate Change Adaptation Strategy, 2018, p. 18).

The *Healthy and Safe Labor Conditions Act* lays down, among others, the tools for prevention and reaction in case of emergency, including coordination with fire safety and civil protection units, and stipulates for the development of related ordinances (Climate Change Adaptation Strategy, 2018, p. 20).

Bulgaria has also enacted the *Climate Change Mitigation Act*, adopted by the parliament in February 2014, which includes a commitment to draw up a National Climate Change Adaptation Strategy for a period running until 2030 (Climate Change Adaptation Strategy, 2018, p. 21). An overview of the legislations is provided in Table 7.

Legislation	Bulgarian
<i>The Constitution of the Republic of Bulgaria</i>	Конституцията на Република България
<i>Disaster Protection Act</i>	Закон за защита при бедствия
<i>Ministry of Interior Act</i>	Закон на Министерството на вътрешните работи
<i>Defense and Military Forces of the Republic of Bulgaria Act</i>	Закон за отбраната и въоръжените сили на Република България
<i>Ordinance on the Terms, Procedures and Bodies to Perform Disaster Risk Analysis, Assessment and Mapping</i>	Наредба за условията, реда и органите за извършване на анализ, оценка и картографиране на риска от бедствия
<i>Healthy and Safe Labor Conditions Act</i>	Закон за здравословни и безопасни условия на труд
<i>Climate Change Mitigation Act</i>	Закон за ограничаване изменението на климата

Table 7: Register of Bulgarian legislation regulating extraordinary situation

5.3 Core Responders in Bulgaria

The Core Responders are organizations that have to ensure public safety and are directly responsible for managing every type of disaster that occurs on the territory of the country or that is endangering national safety from abroad.

The following subsections 5.3.1 to 5.3.3 cover the core responders in case of a national emergency in Bulgaria. Figure 5 provides an overview of the main relevant organizations in the country and how they are structured. The Core Responders are grouped based on their functions in three categories: 1) governmental organisations, 2) health care organisations, and 3) emergency services. Each of these categories is then divided into subsections.

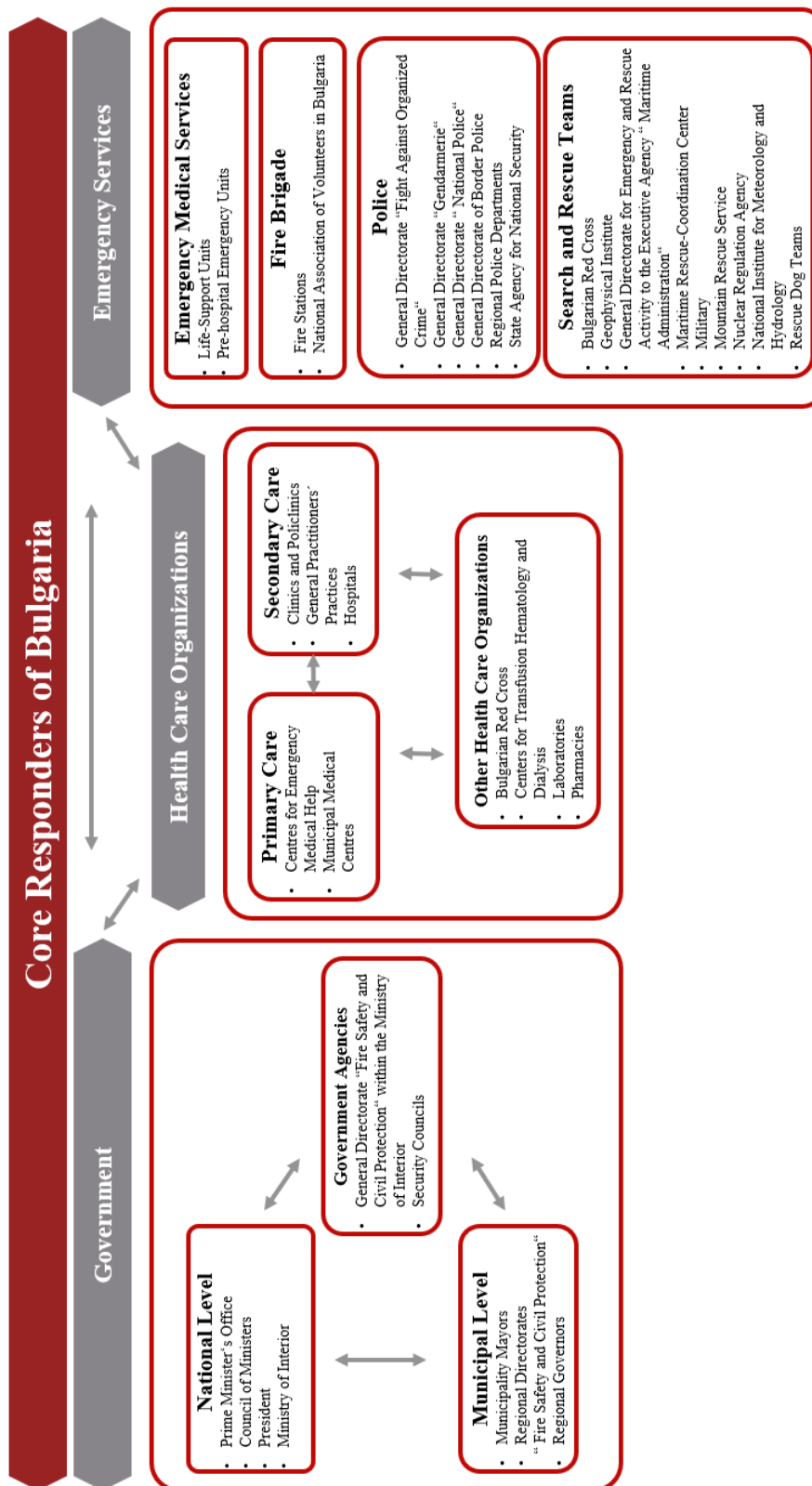


Figure 5: Overview of the Bulgarian Core Responders

Source: Framework adapted from Walter (2020), content created by the author

5.3.1 Government

In case of national emergency in Bulgaria, the “Disaster Protection Law” serves as the main legal act, that defines and regulates the processes and the responsible management bodies. The central organs of the executive power make decisions on a national level, within them, the General Directorate “Fire Safety and Civil Protection” (Главна дирекция “Пожарна безопасност и защита на населението”, FSCP) has a key role. On a municipal level, there are local authorities and FSCP Directorates. Specific government organizations and Security Councils provide further aid in the emergency management process on a governmental level (Tagarev et al., 2015, p. 3).

The President, as the Head of State, is entrusted in case of a national emergency to lead the Supreme Command of the Armed Forces and/or to chair the Consultative Council on National Security (Constitution of the Republic of Bulgaria, Article 100). The Supreme Command is needed in case of a military situation, military conflict, or military-political crisis (Constitution of the Republic of Bulgaria, Article 122(1)). The Consultative Council on National Security prepares statements and proposes solutions related to the issues regarding national security (Law on the Consultative Council on National Security, Articles 1 and 4).

The Council of Ministers has to work according to the Disaster Protection Law and to elaborate it (Disaster Protection Act, Article 62(1)). The Council of Ministers is supported by the following councils and formations:

- Security Council to the Council of Ministers: it is summoned in cases of danger to national security, such as terrorism threats. It coordinates the security, defence, and intelligence services. It is chaired by the Prime Minister. The President may participate personally or through a representative, as the work of the council is closely related to the President’s Consultative Council on National Security and the Supreme Command (Tagarev et al., 2015, pp. 44).
- Consultative Council on Disaster Protection: it is organized on a national level and provides solutions to limit the risks of disasters (Disaster Protection Act, Article 62(3)).

- The National Programme for Disaster Protection: it is a cooperative work of the Ministry of Interior together with other relevant ministries, national agencies, the municipalities, and the Bulgarian Red Cross (Disaster Protection Act, Article 18(5)).
- The Joint Commission for Restoration and Relief (Междуправителствена комисия за възстановяване и подпомагане, JCRR): its main focus is to allocate resources for both recovery activities and prevention investments. It is chaired by the Minister of the Interior (Disaster Protection Act, Article 54).

Tables 8 and 9 provide an overview of the responsibilities of the main relevant ministries in Bulgaria.

Responsible Ministry	Main Responsibilities
Ministry of Foreign Affairs	• Providing official information to other countries and international organizations • Coordinating the interaction between the national and international agencies • Ensuring necessary international aid is given or received
Ministry of Regional Development and Public Works	• Ensuring the water sources and water supply systems are secure • Providing drinking water, fire-fighting water, and water for decontamination • Coordinating the supply of building materials and building teams
Ministry of Health	• Evaluating the medical situation and preparing the health institutions and medical emergency teams • Predicting the medical loss within the population • Evaluating the risk of exposure to radiation
Ministry of Defence	• Ensuring public safety and public order in case of a military or national security emergency • Providing support teams in case additional aid is necessary in natural emergencies

Table 8: Overview of Responsibilities of the Bulgarian Ministries (1/2)

Source: National Plan for Disaster Protection, 2010, subsections 7.2 to 7.10

Responsible Ministry	Main Responsibilities
Ministry of Transport and Communications	• Ensuring the functioning of the land, air, and sea transport • Ensuring the functioning of the communication and information systems • Taking care of issues with the national railway system
Ministry of Economy and Industry	• Ensuring the functioning of the national electrical power system • Ensuring the continuation of the functioning of the markets and tourism • Providing the necessary energy and other essential products from the national reserve
Ministry of Environment and Water	• Protecting the environment and providing current status of the affected environment • Ensuring stable river levels and limiting risk of flows
Ministry of Labor and Social Policy	• Providing social welfare and performing social activities • Opening of new jobs in aid of the emergency
Ministry of Agriculture and Food	• Ensuring fire safety in the forest • Providing the necessary food and grain products from the national reserve • Controlling and protecting the soil, plants, water, and animals for risks of radioactivity, chemical, or biological contamination

Table 9: Overview of Responsibilities of the Bulgarian Ministries (2/2)

Source: National Plan for Disaster Protection, 2010, subsections 7.2 to 7.10

The Minister of the Interior has, in case of a national emergency, a specific list of responsibilities, that are comprehensively listed in the National Programme for Disaster Protection (National Plan for Disaster Protection, 2010). Among those are the execution of the national policies; ensuring the cooperation between the core responders; organizing the data collection, analysis and evaluation process; providing necessary resources; securing public safety and order; informing the public about the situation and the undertaken measures; and instructing the public how to act further (National Plan for Disaster Protection, 2010, p. 26, section 7.1). Within the Ministry of the Interior, the General Directorate FSCP has the main responsibilities on an operational level for managing the national emergencies. It works together with the Regional Governors and Municipality Mayors (Tagarev et al., 2015, p. 51).

The Regional Governor leads and organizes the disaster response on a regional level and is responsible for the control and coordination of the teams and processes on that level. The Regional Governor has to define the risks and solutions for the region and to report regularly to the Ministry of the Interior (National Plan for Disaster Protection, 2010, p. 37, subsection 7.19). The Municipality Mayor leads and organizes the disaster response on a municipality level and is responsible for the control and coordination of the teams and processes on that level. The Municipality Mayor has to, if necessary, organize transportation; provide drinking water, water for firefighting, water for decontamination; organize restoration aid; create voluntary groups, and inform the Regional Governor (National Plan for Disaster Protection, 2010, pp. 37, subsection 7.20).

5.3.2 Health Care Organizations

The health care system in Bulgaria is highly centralized and financed by an obligatory social health insurance mechanism, where the only client of services is the National Health Insurance Fund. This Fund has 28 branches - one in every regional city. The optional voluntary health insurance is unpopular and rarely considered. The director of the National Health Insurance Fund is elected by the National Assembly. This assembly also decides on the National Health Strategy and approves the budgets. The national health policy is steered by the Council of Ministers. The responsibility to govern the functioning of this whole system lies within the Ministry of Health. On a more local level, there are regional health inspectorates, municipal health commissions, and

local bodies of the Ministry of Health. A high number of the health care providers are owned by the municipalities (Bulgaria: health system summary, 2022, p. 3).

In 2021 in Bulgaria, there were 319 hospitals, with over one third of them (115 hospitals) being private. The outpatient health facilities amounted to 2,133 (Bulgaria: health system summary, 2022, p. 9). In 2019, Bulgaria had the highest number of acute hospital beds per person in the EU (641 beds per 100,000 people), with 66% more than the EU average and, for example, 156% more than Denmark. There are also more than two times more computed tomography scanners per population compared to the EU average rate (4.05 scanners versus 2.0 per 100,000 people), but the magnetic resonance imaging units per population are 43% lower than the EU average rate (1.64 versus 1.15 per 100,000) (Bulgaria: health system summary, 2022, p. 9).

The compulsory insurance is required by law for all Bulgarian citizens, permanent residents, and individuals with humanitarian status. The state budget contributes for the payments of children, university students, pensioners, and certain types of unemployed individuals. The health care insurance covers a wide range of primary, secondary, and tertiary health services. Some of the services are also fully covered by the state budget. User fees are often applied and paid by the people. The pharmaceuticals account for high values of out-of-pocket payments, as they are in most cases not covered by the health insurance, with exceptions of e.g., medicines for chronic disease treatment. They are either fully or partially covered (Bulgaria: health system summary, 2022, pp. 6).

According to the law, emergency medical help includes all medical activities, that could aid against acutely occurring life-threatening disorders and to support the vital functions of the body (Regulation No. 25 on the Provision of Emergency Medical Aid, 2001, Article 2). Such help is provided to all people, independently of citizenship, residence, and health insurance status, by all medical institutions on the territory of Bulgaria (Regulation No. 25 on the Provision of Emergency Medical Aid, 2001, Article 3).

The number of physicians per population in Bulgaria is higher than the EU average rate with 428 per 100,000 people. Despite that, shortages in certain positions can be noticed, as it is mentioned in subsection 5.3.3. Overall, the number of physicians has been growing in the last three decades as more positions have been opened and in addition to that the population is in decline. The number of nurses, however, is second-lowest in the EU with 421 nurses per 100,000 people. This is caused by low salaries and unsatisfactory working conditions, which in turn drag down the

number of nursing graduates. Another important factors for the condition of the Bulgarian health workforce are on the one side the aging professionals; on the other side the emigration of young professionals in the EU; and lastly, the uneven distribution of professionals in the different regions (Bulgaria: health system summary, 2022, p. 8).

The social health insurance is funded by taxes and financial contributions, but those public sources accounted, e.g., in 2019, for only 60% of the health expenditure, with the rest covered either by the municipal, regional, and state budget or by private payments, corporate payments, and donations. As previously mentioned, the voluntary health insurance is very low and accounts for a very minimal share (under 1%) (Bulgaria: health system summary, 2022, p. 4).

The Law on Blood, Blood Donation and Blood Transfusion defines all relevant steps regarding blood draw, transportation, cost coverage, donation, etc. (Law on Blood, Blood Donation, and Blood Transfusion, 2020). The collection of blood or blood components is carried out by the centers for transfusion hematology; the multi-profile hospitals for active treatment, in whose structure there is a department of transfusion hematology; the Military Medical Academy (Law on Blood, Blood Donation, and Blood Transfusion, 2020, Article 15).

The retail of medicines, that require prescription, is done exclusively in pharmacies. The over-the-counter products are sold in both pharmacies and drugstores. The number of pharmacies in Bulgaria in 2022 was 3,072, whereas the drugstores were over 900. This created one of the highest densities of pharmacies per capita in Europe. 2,255 of the mentioned pharmacies were under contract with the National Health Insurance Fund. Most of the pharmacies are privately owned. Some of the pharmaceuticals, that are being dispensed by the physicians, are fully covered by the National Health Insurance Fund, but the remainder must be co-paid by the patients (Bulgaria: health system summary, 2022, p. 11).

The health care providers in Bulgaria are autonomous and self-governed. The ownership is allocated as of Table 10.

Owned by the State:	Owned by the Municipalities:
The national health centres	Share of specialized outpatient care and hospitals
The specialized hospitals at national level	The specialized hospitals on municipal level
The centres for emergency medical care	Share of multi-profile hospitals
The psychiatric hospitals	Owned by the Private Sector:
The centres for transfusion hematology and dialysis	Share of specialized outpatient care and hospitals
Share of the university hospitals	All general practitioners' practices
Share of the district hospitals	Primary dental care and pharmaceuticals

Table 10: Ownership of the Health Care Providers in Bulgaria

Source: Bulgaria: health system summary, 2022, p. 4

5.3.3 Emergency Service Providers

The following sub sections will focus on the different emergency service providers in Bulgaria. Those are grouped in subsets: 1) emergency medical services; 2) fire safety; 3) police; 4) search and rescue teams, and 5) other institutions.

5.3.3.1 Emergency Medical Services

The responsibility for providing emergency medical services lies within the Centres for Emergency Medical Help. They prepare units, that consist of both medical and support staff, which provide emergency medical care to those in need either at the location of the accident and/or during the transportation to the hospital. The centres work non-stop and the emergency medical services are free. There are 27 centres - one in each regional city, whereas the centres Sofia City and Sofia Region were merged into one centre. Each centre provides emergency transportation not only to patients, but also to donors, organs, blood, equipment, and professional consultants (Centre for Emergency Medical Aid Sofia, 2024).

Currently, there are 350 mobile emergency units on the territory of the country. They are connected in a system that ensures that those in need of medical help can be transferred to emergency medical facilities within 30 minutes and to an emergency medical room in a hospital within 60 minutes. There are over 8,000 workers in the emergency medical services (National Centre for Training and Qualification in the Emergency Medical Care System, 2024).

There is a constant shortage of emergency medical personnel, as there are more than 500 unoccupied positions throughout the country (news.bg, 2024). Since February 2024, there is again medical emergency service by air, after five years, and it is performed by six helicopters and six pilots. Two more helicopters and the further development of helipads in the hospitals are planned (Doikova, 2024). Since June 2024, the first specialized ambulance for children in Bulgaria has been in use (Mladjova, 2024).

5.3.3.2 Fire Safety

The General Directorate “Fire Safety and Civil Protection” has multiple responsibilities in case of an emergency, as it is the main response institution in Bulgaria. It is also the national point of contact with the European Union, NATO, and other international organizations in case of disaster. This directorate has to provide information for the disaster as well as require or provide international support and timely reaction with the necessary measures (National Plan for Disaster Protection, 2010, p. 24). The directorate has 28 operative centres - each in every regional city in the country. There are around 7,000 fire-fighters in those structures, which means that there is one fire-fighter per 1,000 population. Those centres have to coordinate the response teams and their actions (National Plan for Disaster Protection, 2010, p. 42).

Another responsibility of the General Directorate “Fire Safety and Civil Protection” is to perform firefighting activities, such as responding to signals for fires, evacuating people and buildings, limiting, and extinguishing fires. Furthermore, this directorate has to ensure the safety of the people in all other cases of emergency, to provide response units and means, to rescue and evacuate people and movable property, to provide emergency medical assistance, to organize the transport of the injured people to the medical facilities, and lastly, to limit the damage (Ministry of Interior, 2024).

5.3.3.3 Police

The General Directorate “National Police” is the main specialized national police organization in Bulgaria. The main objectives of the organization are to protect and inform the population, to prevent and investigate crimes, and to provide control if necessary (Ministry of Interior, 2024). In case of emergency, it can be contacted either on the European emergency number 112 or on the national emergency number 166, with an average time to answer of 7 seconds (compared to Sweden (13 seconds), Belgium (11 seconds), Austria (9 seconds)) (112 Emergency, 2024).

The Regional Police Directorates in Bulgaria are 28 - one in every regional city and each of them has a Head of Directorate, similarly structured departments, and subdivisions (District Administrations). There are 28,742 policemen in those structures, which means that the police officers are 407.7 per 100.000 population (Ministry of Interior, 2024).

The General Directorate “Gendarmerie, Special Operations, and Fight against Terrorism” is a specialized, national organization, that provides services in emergency cases, which include highly dangerous individuals or groups. The organization’s special units prevent terrorist attacks, perform rescue activities for hostages, and find and neutralize explosive devices. Furthermore, the organization provides safety units that guard special cargo vehicles, high-risk buildings, and diplomatic agencies. Additionally, the directorate can ensure public safety in cases of mass events and mass riots and can also provide safety zones with the help of snipers. Moreover, the organization provides assistance to the other General Directorates, and participates in joint operations (General Directorate “Gendarmerie, Special Operations, and Fight Against Terrorism”, 2024).

The General Directorate “Border Police” is a specialized, national organization that ensures the safety and control of the country’s borders. The organization has a centralized structure and is divided into three levels of management. The first level is the general governing body, which coordinates the structure on a national, regional, and local level. The second level are the Regional Directorates - there are seven of them, located on the main strategic locations. The third level are the Border-police Departments and the Border-police Ship Bases. There is also a special unit “Air Surveillance”, that is functioning according to Schengen’s best practices. The main focus of the General Directorate is to provide stable and secure external border control for the country and for Europe. Furthermore, it prevents the illegal immigration and the entry of

dangerous items, individuals, or organizations in Bulgaria (General Directorate “Border Police”, 2024).

The General Directorate “Fight Against Organized Crime” is the main organization in Bulgaria, that aims to limit organized crime in the economic, financial, and credit sectors. Additionally, the directorate prevents human trafficking, contraband goods, weapons, and ammunition. Another aspect of the organization’s objectives is to uncover the manufacturing and trade of narcotic substances, counterfeit money, and securities. The fight against cybercrime is also part of the directorate’s responsibilities (General Directorate “Fight Against Organized Crime”, 2024).

The State Agency for National Security is a specialized organization, that performs intelligence activities in order to ensure, that the national security policies are implemented and followed. The agency monitors, detects, and neutralizes planned or performed activities, that pose danger to the national interests, the independence of the country or the territorial integrity. Furthermore, the organization regulates, that the state and civil institutions function in a democratic way and that the citizens’ rights are not harmed (State Agency for National Security, 2024).

5.3.3.4 Search and Rescue Teams and other Institutions

The Bulgarian Red Cross (Български червен кръст, BRC) is part of the International Red Cross Movement and operates autonomously, aiming to support the country with humanitarian help in cases of military conflicts or national disasters. Furthermore, the organization performs and promotes, in this relation, socio-cultural, and charitable activities (Law for Bulgarian Red Cross, Article 1.3). The BCR has a complex organizational structure, consisting of four levels: 1) social, 2) municipal, 3) regional, and 4) national. There are a total of 28 regional organizations - one in each regional city (Bulgarian Red Cross, 2024).

The Mountain Rescue Service (Планинска спасителна служба, PSS) is a specialized voluntary organization that is part of the Bulgarian Red Cross. It is the only mountain rescue organization in the country and is also part of the International Commission for Alpine Rescue (Международна комисия по алпийско спасяване, ICAR). The PSS has 32 rescue teams, consisting of over 530 active members, strategically allocated in the mountainous regions (Mountain Rescue Service, 2024).

The Rescue Dog Team is part of the Mountain Rescue Service and is voluntary. There are six instructors and 23 trained dogs. The team supports other organizations at the disaster location in

substantially reducing the necessary time to find lost or covered people (Mountain Rescue Service, 2024).

The Military of Bulgaria is part of the Ministry of Defence and has several teams that can support the other civilian emergency services in cases of necessity. The military can provide aerial search and rescue support, aerial surveillance, heavy transport vehicles, and nuclear disaster management (ITsec4, pp. 47). Furthermore, the Military Medical Academy has specialized teams, vehicles, and rooms in military hospitals. There are Rapid Reaction Military Medical Teams in Sofia (with fifteen teams and eleven vehicles) and in Varna, Plovdiv, and Pleven (with three teams each and specialized vehicles). Additionally, the Military Police is ready to offer protection and escort to the people and to respectively manage the traffic. There are 76 prepared military personnel and 28 vehicles available (Tagarev et. al., 2015, pp. 47).

The Nuclear Regulation Agency is the central responsible institution for the nuclear preparedness of the country. This agency constantly provides information on the nuclear and radiation situation on the territory of the country and regarding risks from abroad. Furthermore, it observes the nuclear facilities such as the “Kozloduy” Nuclear Power Plant (National Plan for Disaster Protection, 2010, p. 24, subsection 6.2.1). In case of a nuclear disaster, the Agency informs the Bulgarian government throughout the ENAC (Emergency Notification and Assistance Convention) system, the European Union throughout the ECURIE (European Community Urgent Radiological Information Exchange Platform) system and the other relevant countries according to the established agreements (National Plan for Disaster Protection, 2010, p. 36, subsection 7.15).

The Geophysical Institute to the Bulgarian Academy of Science registers and documents earthquakes and provides information regarding the consequences on the territory of the country (National Plan for Disaster Protection, 2010, p. 36, subsection 7.16).

The National Institute for Meteorology and Hydrology to the Bulgarian Academy of Science provides weather forecasts for the area of the disaster. Furthermore, it evaluates the transmission of radioactive substances in the air and shares the data through the RODOS (Realtime Onboard Dependable Operating System) and ESTE (Emergency Source Term Evaluation) systems with the national and foreign governments (National Plan for Disaster Protection, 2010, p. 36, subsection 7.17).

The General Directorate for Emergency and Rescue Activity to the Executive Agency “Maritime Administration” is the national responsible institution in cases of maritime disasters. Together with the General Directorate Civil Aviation Administration, it performs search and rescue activities for people, ships or planes in the Bulgarian sea territories in the Black Sea (Executive Agency “Maritime Administration”, 2024).

The Maritime Rescue-Coordination Center is part of the General Directorate for Emergency and Rescue Activity to the Executive Agency “Maritime Administration” and provides non-stop support in cases of accidents, emergencies, sea pollution, search and rescue in the Bulgarian sea territory in Black Sea. The center is the single point of contact for ships, that are in need of help (Executive Agency “Maritime Administration”, 2024).

5.4 Non-Core Responders in Bulgaria

The non-core responders are organizations that support the core responders in ensuring public safety, but are not directly responsible for managing disasters. The non-core responders have to provide consultancy and expertise and to manage the critical infrastructure in the country.

The following subsections 5.4.1 to 5.4.9 will cover the non-core responders in Bulgaria. Figure 6 provides an overview of the main relevant organizations in the country and how they are structured. The non-core responders are grouped based on their functions in categories - government, strategic health authorities, health care organizations, energy providers, food and beverage providers, information and communication service providers, transportation services, waste disposal services, water and sewerage undertakers.

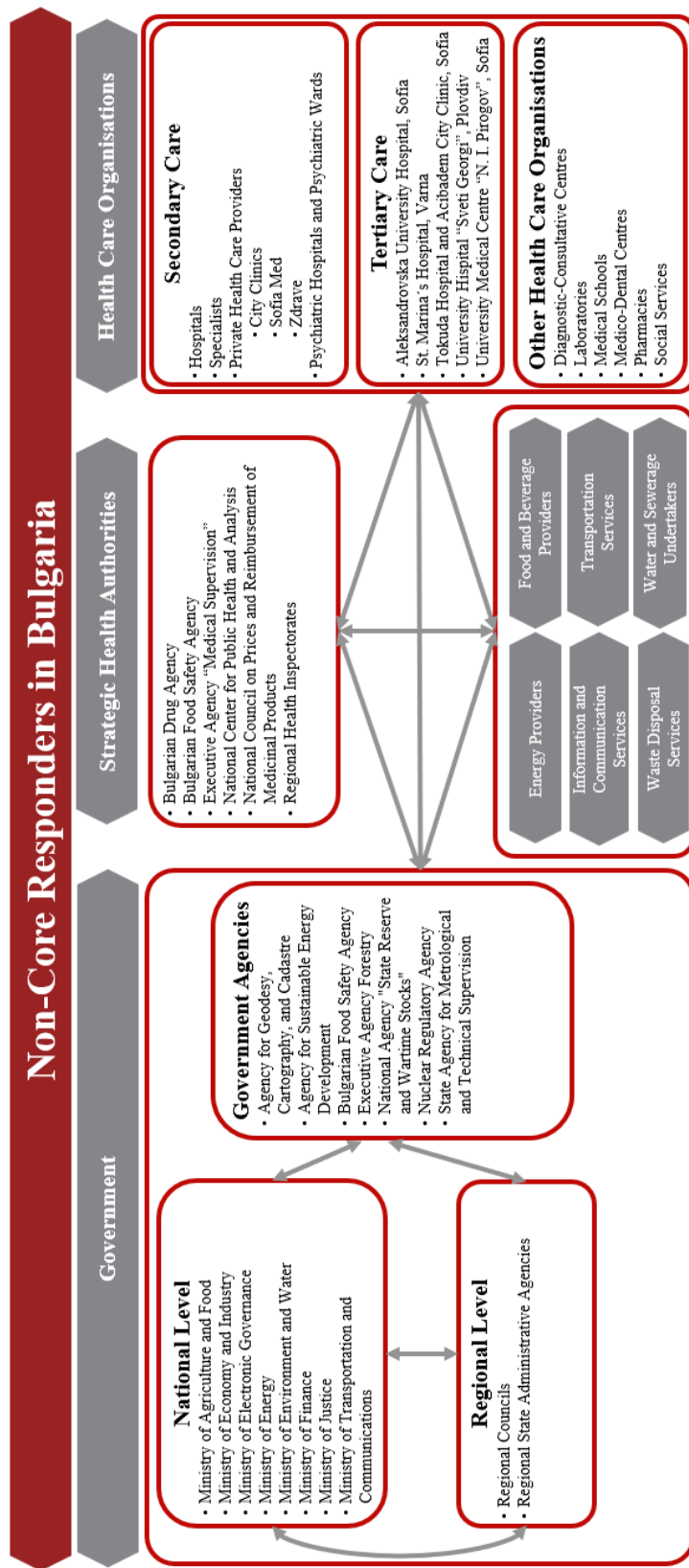


Figure 6: Overview of the Bulgarian Non-Core Responders (1/5)

Source: Framework adapted from Walter (2020), content created by the author

5.4.1 Government

The Ministry of Economy and Industry is responsible for targeting economic growth, while keeping the country financially stable. The growth should be sustainable and innovation-driven. Therefore, the ministry focuses on providing competitive business conditions, while limiting the administrative burden and stimulating further investments (Ministry of Economy and Industry, 2024).

The Ministry of Finance is focused on developing the national policies on public finance, tax, national debt, and financial markets. Then it coordinates and controls the execution of the policies with the aim to create an effective public sector, transparency, and economic growth (Ministry of Finance, 2024).

The Ministry of Agriculture and Food supervises the food production system and supports the agriculture industry. The ministry defines the national food standards and regulates the food markets. All types of food are controlled to comply with safety standards for consumers and with sustainability standards for nature, soil, and waters (Ministry of Agriculture and Food, 2024).

The Ministry of Justice ensures internal juridical control and coordination. It is the bridge between the executive power and the judiciary and guarantees equal rights for all people. Furthermore, the ministry assures the execution of the criminal law, provides prison facilities as well as collaborates and cooperates on international law topics (Ministry of Justice, 2024).

The Ministry of Transportation and Communications is responsible for developing a sustainable transportation system and functioning postal system. Additionally, the relevant national policies are adjusted to stimulate technological progress and innovation in the sectors that are covered by the ministry (Ministry of Electronic Governance, 2024).

The Ministry of Energy's main responsibility is to guarantee the country's energy independence by, on the one hand, developing national energy resources and, on the other hand, by diversifying the foreign sources. The ministry also has to provide fair and competitive market conditions in the energy sector (Ministry of Electronic Governance, 2024).

The Ministry of Electronic Governance conducts the national policy in the information technology area, provides secured electronic identification and authentication services, and forms a safe electronic information network. In addition to that, the ministry controls and coordinates

the information systems and the electronic administration services (Ministry of Electronic Governance, 2024).

The Ministry of Environment and Water is responsible for the protection of the environment and the ecological balance in the country. This is further extended by the protection of the waters and water sources and their regulated usage. The ministry develops and executes plans for the sustainable management of the natural resources and the protection of biological diversity. In addition to that, the ministry manages the activities related to waste and hazardous materials as well as limits the harmful physical factors. The conservation of the protected areas and zones, the protected species of plants and animals, and the management of the national parks also lie within the responsibilities of the ministry (Ministry of Electronic Governance, 2024).

The Bulgarian Food Safety Agency controls food safety and quality, food additives and beverages, veterinary medicine and animal welfare, plant protection and fertilizers, phytosanitary measures, feed, and related border control. The agency follows the best European practices and applies high standards in the control procedures (Ministry of Electronic Governance, 2024).

The State Agency for Metrological and Technical Supervision is a state organization that implements the national policies in the field of metrological and technical supervision. The supervision covers construction products placed on the market; products related to energy consumption in relation to eco-design requirements; electrical and electronic equipment in relation to restrictions on the use of certain hazardous substances and their waste. Furthermore, the agency executes technical supervision of facilities with increased danger and performs quality control of liquid fuels (Ministry of Electronic Governance, 2024).

Other important agencies are the Nuclear Regulatory Agency, State Agency "State Reserve and Wartime Stocks" and the Agency for Sustainable Energy Development, which are covered later in this master thesis (Ministry of Electronic Governance, 2024).

The Executive Agency Forestry and the Agency for Geodesy, Cartography, and Cadaster are other relevant agencies. (Ministry of Electronic Governance, 2024).

5.4.2 Strategic Health Authorities

The health care system on a regional level is divided into 28 Regional Health Inspectorates (Регионален здравен инспекторат, RHI) - one for each region and those inspectorates have to follow the national health policy. Another aspect of their responsibilities is to enhance the efficiency in the health control and to elevate the quality of the medical services (Ministry of Health, 2024).

The Bulgarian Drug Agency has regulatory responsibilities, that include controlling the evaluation and supervision of the medical products in the country, controlling the transfusion system according to the law on blood, and coordinating the Regional Health Inspectorates regarding the control of medical products (Ministry of Health, 2024).

The National Center for Public Health and Analysis is an organization, that is part of the national health care system and supports the Minister of Health regarding public health policies. The main objectives of the centre include scientific, analytic, consultative and educational activities in the area of protection of public health. Another focus point of the centre is to evaluate the health risks of the adverse impact of the living environment of the population. This also includes the risk factors of the way of living and the consumption of harmful substances (Ministry of Health, 2024).

The National Council on Prices and Reimbursement of Medicinal Products not only regulates the pricing and reimbursement of medicinal products, but is also responsible for adding, adjusting, and removing medical products from the list of accepted products on the territory of the country. The council also maintains and regularly updates the public registers regarding the medical products (Ministry of Health, 2024).

The Executive Agency “Medical Supervision” has a wide range of responsibilities. On one hand, the agency has to ensure that the patients’ rights in the medical facilities are not violated; that the medical standards are kept and that the financial activities of the state-owned medical facilities are compliant with the established standards. On the other hand, the agency ensures that the structure, organization, and management of the medical help in the medical facilities on the territory of the country are corresponding to the national standards and that the activities of the medical facilities, that track the effects and duration of medical products are compliant with the

rules. Another activity of the agency is to coordinate and control the transplantation activities in Bulgaria (Ministry of Health, 2024).

The Bulgarian Food Safety Agency has the responsibility to control the food network in the country on all process levels. Thus, on one hand, the agency has to prevent incidents with foods and to ensure the safe quality of the foods. On the other hand, it has to ensure the humane treatment of the animals according to EU laws, to limit the animal diseases, to regulate the veterinary medical products, to control the farms, and to identify the animals. Additionally, the agency has to regulate the usage of chemicals on the plants and the soil and to ensure that the animal feed standards are kept (Bulgarian Food Safety Agency, 2023).

5.4.3 Health Care Organizations

In Bulgaria, there are 341 hospitals, both public and private. 63 of the public hospitals are state-owned, 120 are owned by the municipalities, and the remaining 158 are private. Although the number of private hospitals is higher, they acquire just one-third of the market share, which shows that they are smaller in volume (akcent.bg, 2022).

Irrelevant of the type of ownership, there are mainly multi-profile and specialized hospitals. As of December 2023, the multi-profile hospitals amount for 181, whereas the specialized hospitals are 138. Other types of hospitals comprise the centres for skin-venereal diseases (3 medical facilities), the complex oncological centres (7 medical facilities), and the centres for mental health (12 medical facilities) (National Statistical Institute, 2023).

Some hospitals have been granted the statute of a university hospital by the Council of Ministers. The network of public hospitals in the country ensures that there is a wide-range multi-profile hospital with 24-hour emergency wards and clinical pathology in each region (Health System, p. 11).

The pharmaceutical market in Bulgaria is relatively big, with over two billion euros in sales in 2019. The biggest companies by sales were Novartis, Roche, Actavis, and Pfizer (Nikolova, 2020). Actavis is the biggest producer of pharmaceuticals in Bulgaria, has international sales and is in the top five of the world's generic producers. Another company in Bulgaria's top ten is Sopharma - considered the most successful Bulgarian pharmaceuticals company. Both of them have production facilities not only in Bulgaria, but worldwide. Currently, there is only one pharmaceutical company, that is still owned by the state - Bul Bio – NCZPB (Националният

център по заразни и паразитни болести, National Center of Infectious and Parasitic Diseases), which specializes in the production of vaccines and immunostimulants. One of the newest companies in the sector is Chaikafarma (Pharma Bulgaria, 2024).

Bulgaria has a national reserve of medical supplies, equipment, and pharmaceuticals. There is also preparedness to organize field hospitals as well as emergency and operating rooms in case of emergency (State Agency "State Reserve and Wartime Stocks", 2024).

Non-Core Responders of Bulgaria

Energy Providers

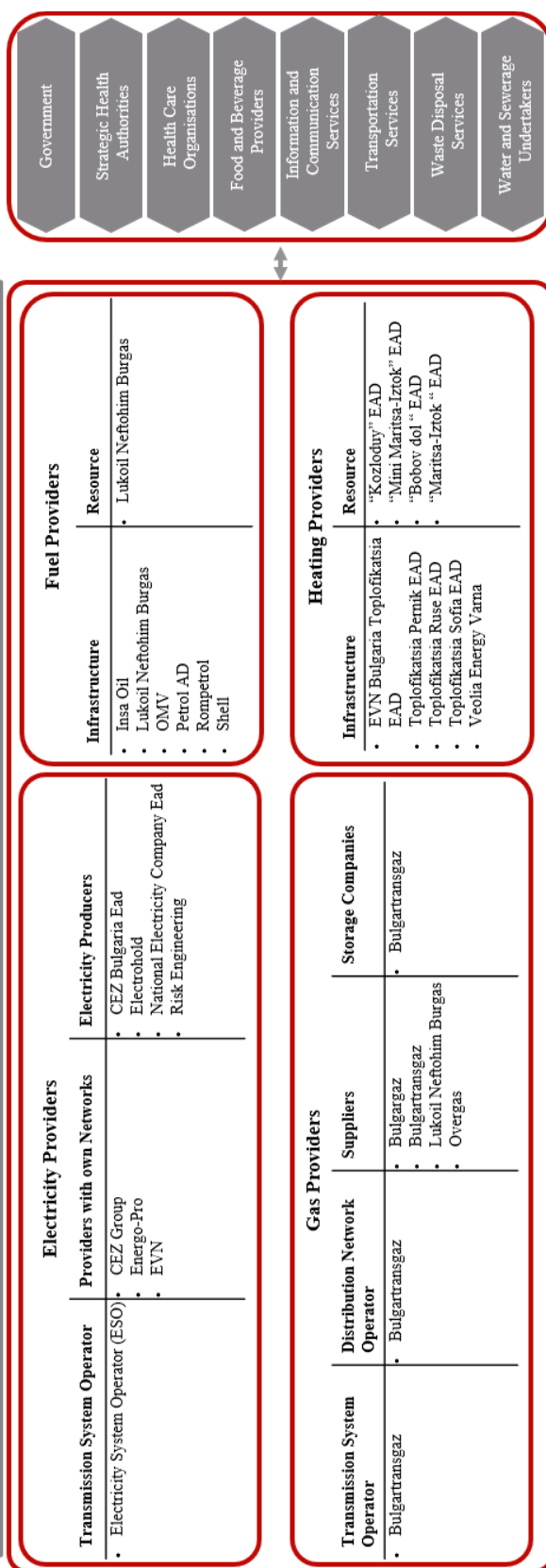


Figure 7: Overview of the Bulgarian Non-Core Responders (2/5)

Source: Framework adapted from Walter (2020), content created by the author

5.4.4 Energy Providers

The energy dependency defines how dependent the country is on the import of energy and energy resources. Bulgaria's energy dependency between 2016 and 2020 was considerably lower than the EU average. In these five years, Bulgaria's dependency averaged 38%, whereas the EU average amounted to 58%. Considerable influence for this have been the local resources, such as lignite coal and the nuclear energy. Figure 7 gives an overview of the providers of electricity, gas, oil, and heating (Ministry of Energy, 2021, p. 3).

The national policy on the energy topic is specified in the Law on Energy. The policy is defined by the Ministry Council and the Minister of Energy executes it. Thus, the Ministry of Energy is the main responsible body on energy-related topics. Another important organization is the Commission for Energy and Water Regulation, which is an independent state body, that regulates the activities in the sector according to the Law on Energy, the Law on Energy from Renewable Sources, and the Law on Regulation of Water Supply Services (Ministry of Energy, 2023, p. 2).

Other relevant organizations are the Agency for Nuclear Regulation and the Agency for Sustainable Energy Development. The first being responsible for the safe use of nuclear energy and the safe management of nuclear waste. The second one is responsible for improving the energy efficiency of the country and for stimulating the production and consumption of energy from renewable or sustainable sources such as electricity, biogas, green hydrogen, fuel from non-biological origin, and recycled fuels (Ministry of Energy, 2023, p. 2).

The Bulgarian Energy Holding (Български енергиен холдинг, БЕХ) is a holding association, which combines companies, that produce and transmit electric power, store and transfer natural gas, and mine lignite coal. The holding is 100% owned by the state and is the biggest such based on assets owned. It owns the main electricity production companies, the electricity network, and the network for natural gas transfers (Ministry of Energy, 2023, p. 3).

Furthermore, the holding is the state provider of electricity and natural gas in the country and has more than 30 years of experience in the energy sector, thus providing a safe and stable energy system. The Holding completely owns: "Mini Maritsa-Iztok" EAD (Еднолично акционерно дружество, Limited liability company), ТЕС (Топлоелектрическа централа, Thermal power station) "Maritsa-Iztok" EAD, АЕС (Атомна електрическа централа, Nuclear power plant) "Kozloduy" EAD, "NEK" (Национална електрическа компания, National electric company)

EAD, “ESO” (Електронен системен оператор, Electricity system operator) EAD, “Bulgargaz” EAD, and “Bulgartransgaz” EAD (Ministry of Energy, 2023, p. 3).

The electricity production in Bulgaria is highly diversified through nuclear power plants, thermal power plants, and power plants using renewable sources (e.g., water, wind, solar, biomass) (Ministry of Energy, 2023, p. 8). But, similarly to the other types of energy, electricity production fell in 2023 by 21% compared to the previous year. The produced electricity amounted to 40 TWh (terawatt hour). The production was mainly done by the nuclear power plant “Kozloduy” and the thermal power plants, which use coal. Three of the main electricity producers with own networks are Energo-Pro, EVN (Energy supply of Lower Austria), and CEZ Group (Czech energy plants) (Ministry of Energy, 2023, p. 17).

The coal mining in Bulgaria operates to maximum ecological extent and the plants using local coal created almost 30% of the electrical energy in 2023 (Ministry of Energy, 2023, p. 3). In 2023, there was a high drop (42%) of the amount of mined coal compared to 2022. The total being 21 million tons, consisting of 20 million tons of lignite coal and one million tons of brown coal. The reason for the decline being the smaller amount of available coal (Ministry of Energy, 2023, pp. 12).

The distribution network for natural gas in Bulgaria is still being developed. The import of natural gas fell in 2023 by 32% compared to the previous year, whereas the consumption fell in 2023 by 23% compared to 2022. The natural gas production on the territory of Bulgaria amounted to nine million cubic meters in 2023, which is 46% less than in 2022. (Ministry of Energy, 2023, pp. 14).

The oil and oil products market is completely free in Bulgaria, with both local and international companies such as OMV (Austrian Mineral Oil Administration Stock Company), Shell, Rompetrol, and Lukoil Bulgaria EOOD (Еднолично Дружество с ограничена отговорност, Limited liability company). The latter distributes the products of Lukoil Neftohim Burgas AD (Акционерно дружество, Joint-stock company), which is the biggest oil refinery on the Balkan peninsula and operates in Bulgaria (Ministry of Energy, 2023, p. 7). The oil production on the territory of the country is small and does not cover the needs of the national market. In 2023, 21 million tons of oil were produced in Bulgaria (Ministry of Energy, 2023, p. 16).

The heating energy is another popular type of energy in Bulgaria. All heating companies, that perform centralized heating distribution, are privately owned, except “Toplofikatsia Sofia” EAD. The last, being completely owned by the municipality of Sofia, serves over 70% of all heating energy customers (Ministry of Energy, 2023, p. 12). The produced amount of heating energy in 2023 is equal to 13 TWh, which is 7% less than in 2022 (Ministry of Energy, 2023, p. 19).

The National Agency “State Reserve and Wartime Stock” has the essential task to ensure the provision of the nation and the national economy with energy reserves for a minimum period of 90 days. This is in accordance with the national energy and economic security of the country and the European Union (State Reserve and Wartime Stocks, 2024).

5.4.5 Food and Beverage Providers

The food and beverage industry occupies an important place in the structure of the Bulgarian economy, as it is one of the main contributors (Pelovska, 2015, p. 1). In 2020, agricultural holdings included 31,425 cattle farms, 25,075 poultry farms, 22,350 sheep farms, as well as goat, pig, and bee farms (Ministry of Agriculture, 2022, p. 6). There are around 60,000 farms dealing with field crops and other perennial crops (Ministry of Agriculture, 2022, p. 1).

The main food-producing companies are Oliva, ADM (Archer-Daniels-Midland) Razgrad, and Bella Bulgaria. Devin, Gorna Banya, and Kamenitsa are the major beverage producers (Marinova, 2022).

The largest grocery retail stores in the country are Kaufland, Lidl, Billa, and Metro Cash and Carry. Fantastico is the biggest Bulgarian grocery chain (Ministry of Economy, 2020, pp. 19).

Figure 8 provides an overview of the main producers, wholesalers and retailers in Bulgaria.

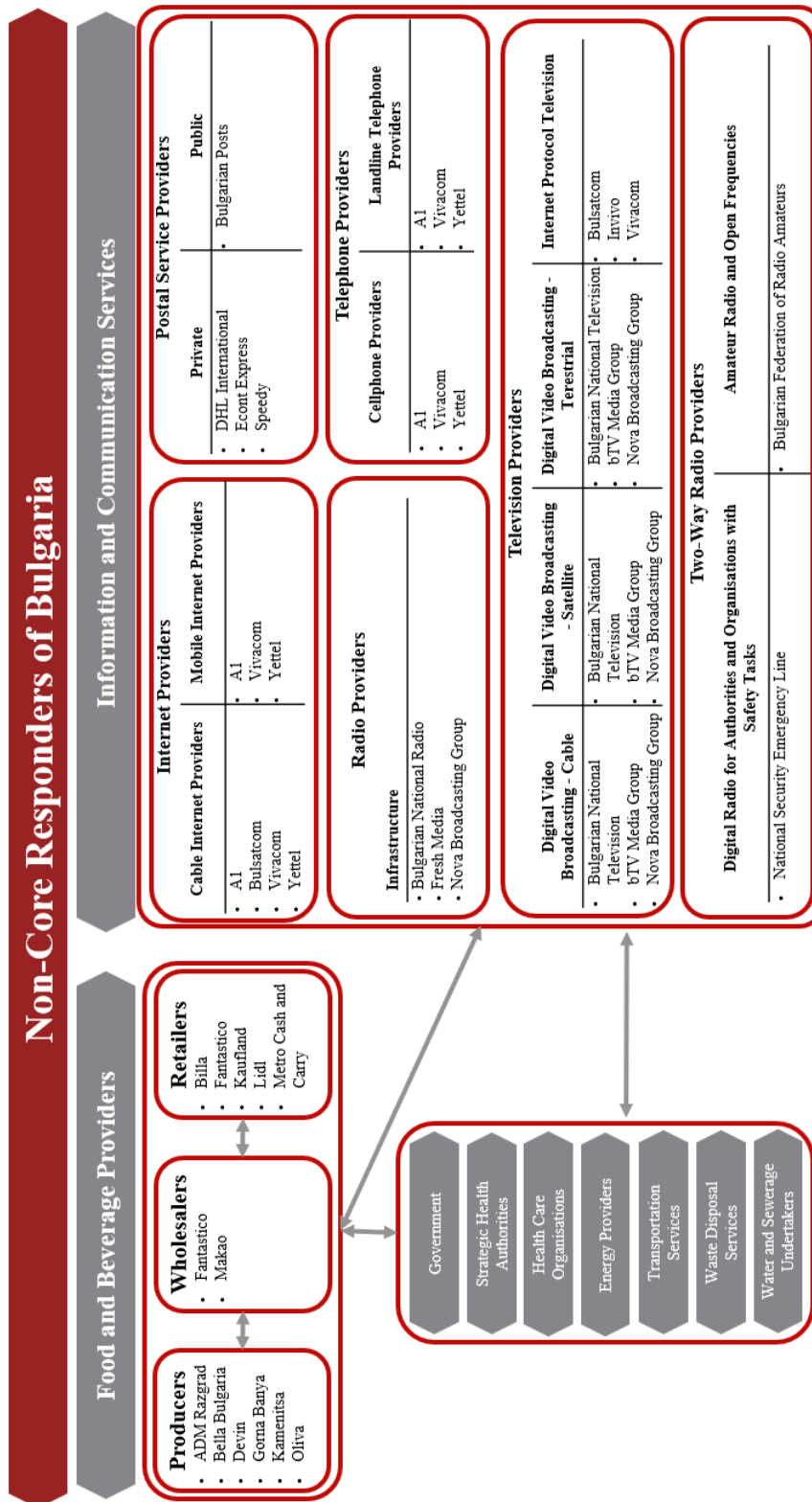


Figure 8: Overview of the Bulgarian Non-Core Responders (3/5)

Source: Framework adapted from Walter (2020), content created by the author

5.4.6 Information and Communication Service Providers

The television system in Bulgaria has, on one hand, national broadcasting channels, that are funded by the state budget, such as the Bulgarian National Television (Българска национална телевизия, BNT) group of channels. On the other hand, there are multiple privately owned national broadcasting channels, that rely on commercial funding and private investors, such as bTV Media Group and Nova Broadcasting Group. Besides the national level, there are also regional, local, and international channels. Currently, two types of connection are most used - satellite and cable, whereas some of the networks offer both (Council for Electronic Media, 2024). Figure 8 provides an overview over the main information and communication service providers in the country.

The signals for early warning and informing of the population are two types - start or end of national warning and start or end of air danger. They are broadcast through (Ministry of Interior, General Directorate “Fire Safety and Civil Protection”, 2024):

- The acoustic sirens of the national system for early warning and informing in case of emergency
- The electromechanical sirens of the informing system of the General Directorate FSCP
- The networks of BNT and Bulgarian National Radio (Българско национално радио, BNR) and, if necessary, the other national or regional television and radio channels
- The radio broadcasting units, that are installed in the populated areas
- The special warning systems, that are installed in potentially dangerous locations.

There are three main mobile operators on the territory of Bulgaria - A1, Yettel, and Vivacom (Communications Regulatory Commission, 2024). They use the radio frequency spectrum in the 3.6 GHz (Gigahertz) range with national coverage since May 2021. The permit was issued by the Communications Regulatory Commission and has a term of 20 years. This enabled all three of the mobile operators to successfully provide their own 5G (Fifth generation of wireless cellular technology) networks (5gbg.bg, 2024).

Regarding radio services, there are in Bulgaria again both private and publicly funded providers. The biggest companies based on the share of the audience are Fresh Media and Nova Broadcasting Group, which together accumulate almost half of the listeners. Fresh Media is represented by BG (Bulgarian) Radio, Radio 1, and City radio stations, besides others, and Nova

Broadcasting Group is known by The Voice, Vitosha, and Magic FM (frequency modulation) radio stations. The third most popular radio provider is BNR, which is publicly funded (Penkova, 2021).

Airport control towers, air traffic control services, automatic radio direction finders and the VHF (Very high frequency) omnidirectional radio beacons (VOR) broadcast in the bands between 108,000-117,975 and 117,975-137,000 MHz (Megahertz) (predavatel.com, 2024).

The Bulgarian Federation of Radio Amateurs is part of the IARU (International Amateur Radio Union) and actively supports the radio activities in the country (Bulgarian Federation of Radio Amateurs, 2024). In cases of emergency, the participating radio enthusiasts are prepared to follow the established standards for providing emergency signals and timely information. For emergency communication within the country, they use VHF frequencies 145,025/145,625 MHz and 145,050/145,650 MHz and for international signals, they use HF (high frequency) frequencies 3,760; 7,110; 14,300; 18,160; 21,360 MHz (Bulgarian Federation of Radio Amateurs, 2024).

The postal services in Bulgaria are provided by both private and publicly funded companies. The biggest postal firms based on income for 2023 are Econt Express and Speedy. Both are privately owned (money.bg, 2023). The third company on that list is Bulgarian Posts, which is completely owned by the state. DHL International (Dalsey-Hillblom-Lynn) is the biggest foreign postal services provider in the country (Ministry of Transport and Communication, 2024).

Non-Core Responders of Bulgaria

Transportation Services

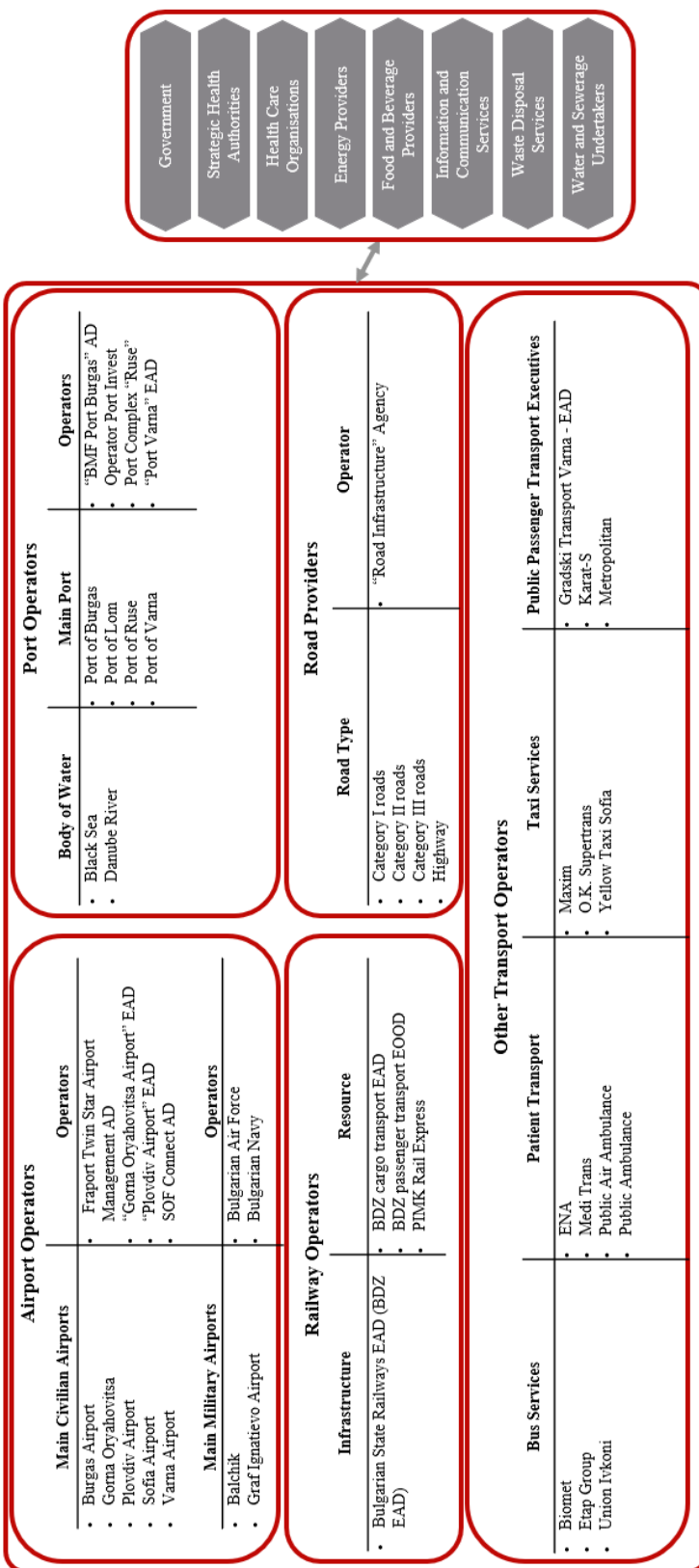


Figure 9: Overview of the Bulgarian Non-Core Responders (4/5)

Source: Framework adapted from Walter (2020), content created by the author

5.4.7 Transportation Services

The main organizations providing transportation services in Bulgaria are listed in figure 9. They have been grouped in following categories: airport operators; port operators; railway operators; road providers; and other transport operators.

There are five international airports for civil use on the territory of Bulgaria. Those are distributed relatively evenly near the biggest cities. The biggest one, based on the number of passengers, is Sofia Airport. It is followed by Burgas Airport and Varna Airport. The least used are Plovdiv Airport and Gorna Oryahovitsa Airport (Stancheva, 2018, p. 88).

In 2018, just under twelve million travelers used the airport network in Bulgaria. More than half of them (55%) flew to or from Sofia Airport. The next two combined provided services to other 44% of travelers (27% through Burgas Airport and 17% through Varna Airport). The last two airports combined were visited by just 1% of all travelers (Bulgarian Airline Association, 2024, p. 1). The combined number of passengers using the airport network in Bulgaria dropped in 2023 to 10.8 million (National Statistical Institute, 2024). The military airports are eleven and these do not offer any public air services (General Directorate “Civil Aviation Administration”, 2024).

The airport network in Bulgaria is not run by a single company, but there are different firms that operate the different airports. Sofia Airport has been operated by “SOF (Sofia international airport) Connect AD” since 2021 for a period of 35 years. The investment fund Meridiam owns 100% of “SOF Connect AD” and is developing the airport based on the data from Munich Airport (Sofia Airport, 2024). Both Burgas Airport and Varna Airport are operated by “Fraport Twin Star Airport Management AD”, which also has 35-year concession rights (Fraport Bulgaria, 2024).

The main national public airline in Bulgaria is Bulgaria Air. Other public carriers are European Air Charter and Electra Airways, which offer charter, on-demand and cargo services. Cargo Air provides freight traffic services (Bulgarian Airline Association, 2024).

The ground transportation is almost completely operated by the national railway company BDZ EAD (Български държавни железници ЕАД, Bulgarian State Railways EAD). BDZ EAD is 100% owned by the state and holds licenses for both public and cargo transportation. It is divided into three companies - BDZ Passenger Transport EOOD, BDZ Cargo Transport EAD, and BDZ Traction Rolling Stock (locomotives) EOOD (Dimitrov, 2019, p. 117). Since 2024, there is also a privately owned company - Pimk Rail Express, which used to offer only cargo transport, but

currently aims to offer additionally public transportation services (Goranova, 2024). The total length of the railway lines in Bulgaria is 4,274 km (Kazalov, 2016).

The “Road Infrastructure” Agency is a specialized agency, that is responsible for managing and developing of the highways and the roads from first, second, and third class. The agency operates under the Ministry of Regional Development and Public Works. The roads managed by the agency form the national road network of Bulgaria. Furthermore, the agency coordinates and executes the projects and plans for the construction of both republican and local roads and organizes the distribution of the necessary funds. Additionally, the minister of Regional Development and Public Works receives suggestions by the agency for the further maintenance and development of the road network and the normative acts in this relation (Ministry of Electronic Governance., 2024).

The national road network of Bulgaria is 20,000 km long, 840 km of which are highways (National Statistical Institute, 2024).

Maritime transportation is managed by the Executive Agency “Maritime Administration”. The agency regulates the four directorates - Maritime Administration Varna, Maritime Administration Burgas, River Supervision Ruse, and River Supervision Lom. There are nine main ports in Bulgaria - two at sea (Varna and Burgas) and seven river ports along the river Danube (Ruse, Lom, Vidin etc.). The cargo with the largest volume passing through the Bulgarian ports are products of agriculture, hunting, and forestry, as well as fish and other fish products (Executive Agency “Maritime Administration”, 2024).

There is no governmental regulation on the companies that provide private ambulance transportation services, without being part of the medical emergency care network. These companies do not have the right to provide medical emergency help, but rather provide medical transport without liability (National Assembly of the Republic of Bulgaria, 2020, pp. 6). Such companies are Higia (lineika-higia.com, 2024) and Ena (ena1111.bg, 2024).

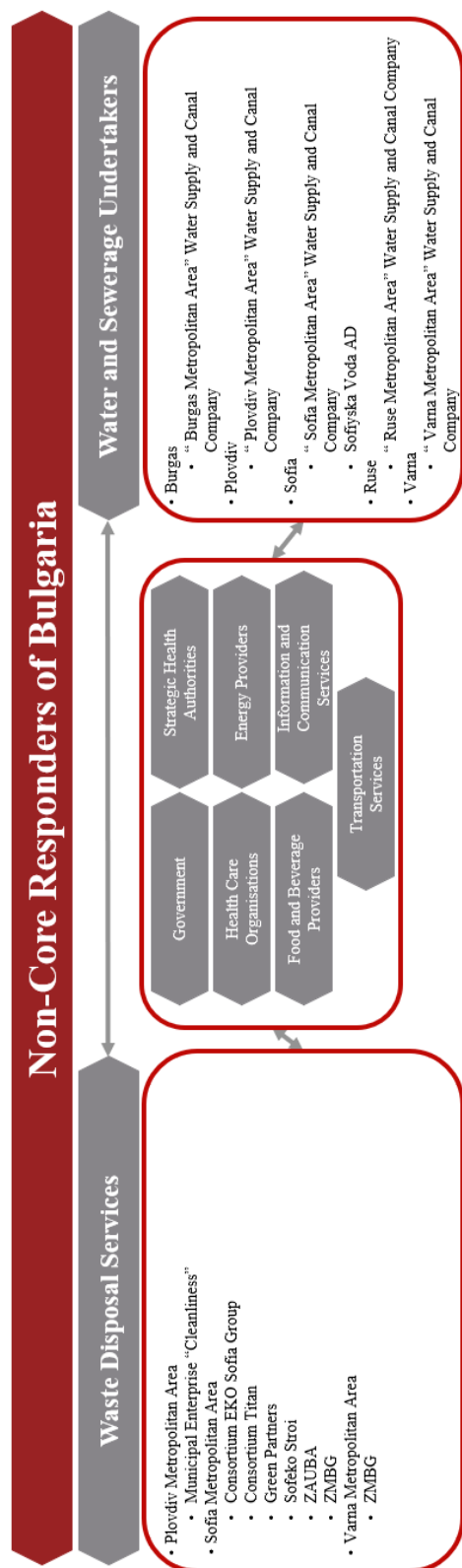


Figure 10: Overview of Bulgarian Non-Core Responders (5/5)

Source: Framework adapted from Walter (2020), content created by the author

5.4.8 Waste Disposal Services

In Bulgaria, the waste disposal is regulated in the Law on Waste Management (Law on Waste Management, 2014). The Ministry of the Environment and Water is responsible for regulating the waste management in the country and is supported by the Directorate Waste Management and Soil Protection (Ministry of Environment, 2024). The policies of the ministry are in accordance with EU policies and strive to achieve by 2030: 65% recycling of household waste, 75% recycling of packaging waste, and 10% maximum landfill disposal (Ministry of Environment, 2024).

The municipal waste generation in the last 20 years in Bulgaria has been generally decreasing and in 2020 it was 444 kg per capita, which is below the EU average of 517 kg. The generated industrial waste between 2008 and 2018 increased heavily, which is a result of multiple large economic activities such as building the infrastructure for energy, fuel, water supply, sewerage, and waste management services. This is in trend with the steadily increasing GDP (gross domestic product) of Bulgaria, which still remains below the EU standards (European Environment Agency, 2023, p. 3).

The priority types of waste according to the National Waste Management Plan are: food and household waste; industrial waste; construction waste; hazardous waste. The targeted groups are public institutions; households; municipalities; businesses; schools; and NGOs (Non-Governmental Organisations) (European Environment Agency, 2023, p. 5).

There are 53 Regional Associations for Waste Management in Bulgaria and their function is to support the municipalities in managing household waste and to develop and operate facilities for household waste management. Only municipalities can participate in the associations and the aim is to jointly tackle potential issues, thus minimizing costs. Another aspect is to jointly reach objectives regarding efficiently collecting, transporting, and treating of the waste (Ministry of Environment and Water, 2024, p. 235).

The Ministry of Environment and Water has fifteen Regional Inspections for Environment and Water, which ensure that the national policy on environmental protection is followed at the regional level. The inspections perform informative, regulatory, and control functions. An important aspect of their work is to ensure that the national resources are sustainably used (Ministry of Environment and Water, 2024).

On the territory of the capital, Sofia, there are six companies, that collect and transport general waste; clear the streets and the public spaces (Capital Inspectorate, 2024). The Municipality of Sofia has contracts with three firms for the organization and maintenance of a system for the separate collection of waste from packaging. Figure 10 provides an overview of the waste disposal services in the three largest cities (Capital Inspectorate, 2024).

5.4.9 Water and Sewerage Undertakers

The water services and systems in Bulgaria are regulated by the Law on Water (Law on Water, 2020). On a national level, control over water is the responsibility of the Ministry of Environment and Water (Law on Water, 2020, Article 9(2)). The Council of Ministries defines the National Policy on Water Supply and Sewage (Водоснабдяване и канализация, ViK) and the policy is then executed by the Ministry of Regional Development and Public Works, the municipalities, and the city mayors (Law on Water, 2020, Article 10(a)). The Ministry of Health regulates the quality of the water through the regional health inspectorates in order to protect public health (Executive Environmental Agency, 2024).

There are 66 companies that provide services regarding water supply, sewage maintenance, and wastewater treatment, the main ones are illustrated in figure 10 (Ministry of Environment and Water, 2024, point 5, p. 83). Around 21% of them are state-owned, around 39% are owned by the municipalities, whereas 24% are co-owned by the state and the municipalities. 12% are completely private organizations and the rest, around 3%, are co-owned by private companies and the municipalities (Ministry of Environment and Water, 2024, point 5, p. 91).

5.5 Bulgarian Co-Operating Bodies

In the following section are described in details the co-operating bodies in emergency management, which are: 1) the military, 2) environmental agencies, 3) the media, 4) cyber security and the 5) voluntary sector, illustrated in Figure 11 and 12.

5.5.1 Military

The role of Bulgarian Army in the contemporary society is complex and multi-layered. On the one hand the military forces “guarantee the sovereignty and independence of the country and protect its territorial integrity” (Valev, 2022) on the other hand in peaceful time take an active part in assisting crisis and emergency situations. Furthermore, recognizing the security implications of climate change, the Ministry of Defense is developing a strategy to prepare the Armed Forces for its future effect and ensure that they have the knowledge and capability necessary to adapt and deal with those changes (Ministry of Defense, 2024).

The total number of peacetime armed forces personnel as of 2015 was 38,988; and according to the organizational chart, there were 10,687 civilians in the armed forces (State Gazette, issue 26). Bulgarian army maintains an Armed Forces Voluntary Reserve of 3,000 people, which are part of peacetime/war time structure (Ministry of Defense, 2024).

The structure of the Bulgarian Military can be defined as follows:

Joint Forces Command - is a functionally integrated Command at operational level, for joint operations planning and execution within the three main missions of the Bulgarian Armed Forces and for administration and national control over the assigned national military forces deployed for mission and operations abroad (Ministry of Defence, 2024). The three main missions are the following:

- Defence
- Support the international peace and security
- Contribution to the national security in peacetime

Land Forces - which are the basic type of service of the Bulgarian army, and its task is to guarantee the sovereignty and independence of the country, and to protect its territorial integrity in interaction with the other services, and there approximately 20,080 soldiers (Ministry of Defence, 2024).

Air Forces – Organizationally construction of Bulgarian aerial navigation began in 1903 and on October 1912, the first combat mission with the participation of an aircraft was accomplished as a result of which this date is considered to be the birthday of the military aviation of Bulgaria (Ministry of Defence, 2024). The primary mission of the Air Force is to guarantee the air sovereignty and security of the country, and jointly with the other services, to protect its territorial integrity, the active personnel is approximately 7,993 soldiers. Some of the basic missions and tasks of the Bulgarian Army are (Ministry of Defence, 2024):

- “Defense” (under Article 5 of Washington Treaty), includes defence of the country in the system of collective defence, and participation of the military airborne component in collective defence activities outside the territory of the country;
- “Support for the international peace and security”
- “Contribution to the national security in peacetime”, includes: surveillance, control and protection of the air space, and jointly with the other services – protection of the national territory and maritime spaces;
- support and protection of the population at times of natural disasters, industrial breakdowns, and catastrophes and;
- participation in the preservation of natural environment.

Navy – consist of navy training, preparation headquarters and two military naval bases in Varna and Burgas with roughly 4,288 people (Ministry of Defence, 2024). Functionally, the Navy is divided into deployment forces and territorial forces:

- **Deployment forces** - formations with a high and low degree of readiness, capable of conducting the whole spectrum of NATO missions on the territory of the Alliance or outside it in the sense of Article 5 of the Washington Treaty, or in response to crises of a military or non-military nature. The deployment forces of the navy are fully manned and equipped with the necessary arms and equipment (Ministry of Defence, 2024).
- **Territorial forces** – formations with a high and low degree of readiness capable of fulfilling operations related to the protection of the territorial integrity (independently and/or in the system of collective security and defence), the maritime sovereignty of the country with integrated systems in NATO’s shared system that guarantee contribution to the national security in peacetime and counteraction against potential asymmetric threats (Ministry of Defence, 2024).

Joint Special Operations Command (SOF) - provide unique capabilities to achieve influence over the planned objectives by conducting strictly defined tasks in order to create strategic and operational level effects (Ministry of Defence, 2024).

Logistics Support Command - is an operational level structure providing logistics support to the Bulgarian Armed Forces in peacetime, crisis and conflict, as well as to NATO forces deployed in the territory of Bulgaria. The Logistics Support Command's Level of Ambition is to achieve capabilities for planning and providing logistics support for a limited-scale operation as well as to implement the relevant military commitments related to providing effective Host Nation Support (Ministry of Defence, 2024). The structure was established within the Bulgarian Army on 1st of September 2021 and has been operational since then.

Communications and Information Support and Cyber Defence Command - is the legal successor of the Stationary Communications and Information System, which was directly subordinated to the Minister of Defense. The unit was established on 1st September 2021 (Ministry of Defence, 2024). More about the tasks and missions will be discussed in subsection 5.5.5 Cybersecurity.

As has been already mention it, in peaceful times Bulgarian Army take an active role in the crisis management, for this purpose there are 93 module formations specialized on dealing with crisis and disasters as on afterwards support and recovery. They are divided as follow: 14 module formations are dealing with floods, nine module formations with earthquakes, 23 module formations for operations in bad winter conditions, 17 module formations for extinguishing forest and field fires, and 16 module formations are dealing with demining and removal of unexploded ordinance. In addition to the above mentioned modules, the Army maintains additionally two formations. The first one with eight module formations is prepared to intervene in the elimination of consequences of industrial accidents with the release of highly toxic chemical substances, biological microorganisms, and radioactive substances. The second one is a six module formation specialized exclusively on dealing with accident in NPP "Kozloduy" (Council of Ministers of the Republic of Bulgaria 2012).

The Executive Agency "Military Clubs and Recreation" (*Изпълнителна агенция "Военни клубове и военно-почевно дело"*) with a staff of 355 people, maintain 2,800 beds and can host affected groups of the population (Tagarev, 2015). The agency is directly subordinate to the Ministry of Defence (The government services, 2024).

The oldest military university in Bulgaria “Rakovski National Defence College” was established by law on March 1, 1912. The college is a leader in the sphere of national security and defence. It conducts training and the acquisition of higher education and a Bachelor’s Degree in specialties from the accredited professional fields of “National Security”, Master’s Degrees in specialties from the accredited professional fields of “National Security”, “Psychology”, and “Warfare” as well as Doctor of Philosophy (PhD) in accredited science specialties (Military University, 2024).

The Nikola Vaptsarov Naval Academy Varna, is the oldest technical educational institution in Bulgaria, the academy was founded on 1881. It has contributed not only to the development of the Bulgarian Navy, but also to the growth of this country’s technical intelligentsia and the establishment of Bulgarian maritime industry. The academy offers twelve undergraduate, thirteen masters and nine doctoral programs. The number of cadets, students, and doctoral students exceeds 2,000 (Naval Academy, 2024).

Bulgarian National Assembly released a statement on the 5th of June 2024, that Republic of Bulgaria will not participate in any way with troops on the territory of Ukraine. Nevertheless, Bulgaria has declared its participation in the EU training mission to assist Ukraine. The training of the personnel takes place on the territory of the Federal Republic of Germany, the Republic of Poland, and other EU Member States. Within the framework of this mission, it is also envisaged to train up to 60 combat medics in Bulgaria for one year (Ministry of Defense, 2024).

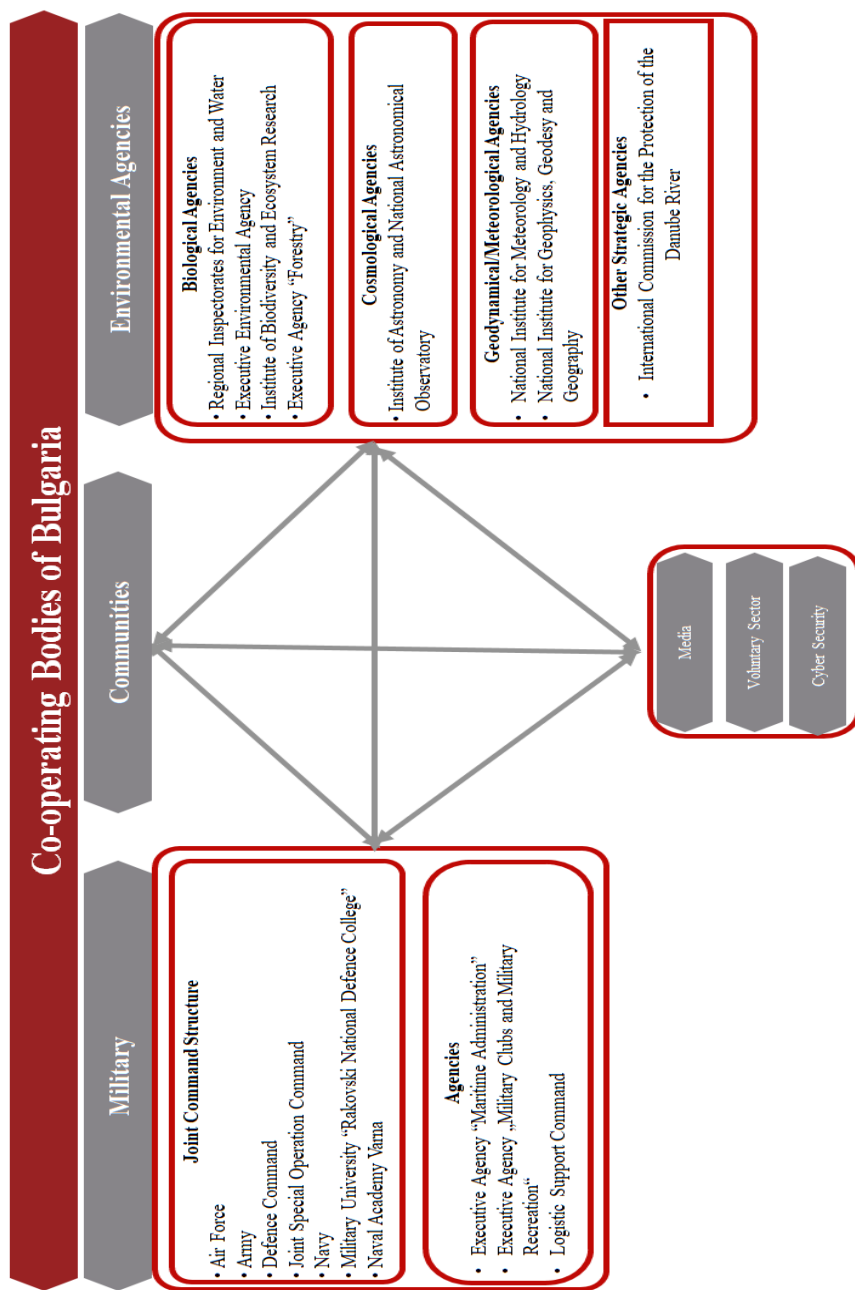


Figure 11: Overview of Bulgarian Co-Operating Bodies (1/2)

Source: Framework adapted from Walter (2020), content created by the author

5.5.2 Communities

As part of the co-operation bodies, communities are playing an important part of the communication about the crisis. Furthermore, the community members have always served as volunteers (Collins, 2016, p. 162).

An analysis conducted by the Economic and Social Council of Republic of Bulgaria (Икономически и социален съвет на Република България), shows that the number of non-government organizations and civil organizations for the period 2022-2023 amounted to 25,769, with the major density in big cities. This is an important factor, because in times of disasters and crises, existing networks of civil organizations and NGO's are more prepared to reach out to affected groups, communities and regions and respond accordingly to their needs (Economic and social council, 2024).

The Constitution of the Republic of Bulgaria guarantees the freedom of religion and prohibits discrimination based on religious affiliation; however, the Eastern Orthodox religion is the traditional religion in the Republic of Bulgaria (Constitution of Republic of Bulgaria art. 13, art. 37).

The trends in demographic processes determining the changes in the number and structures of the population affect all ethnic groups in the country. Based on the Census of the National Statistical Institute from 7th of September 2021, the biggest ethnical group is Bulgarian with 5,118,494 people, or 84.6% of persons responding to the ethnicity question. Following is the Turkish ethnic group 508,378 people, or 8.4% of the respondents, the Roma ethnic group count of 266,720 people or 4.4% respectively. Finally, 79,006 people, or 1.3%, identified themselves as belonging to other ethnic groups (National Statistical Institute, 2021).

Regarding religious belonging, people who self-identified as Christian were 4,219,270, or 71.5% of those who answered the question. Among them, Eastern Orthodox Christians predominated - 4,091,780, or 97.0%, followed by persons with a Protestant denomination - 69,852 (1.7%), Catholic - 38,709 (0.9%), and 5,002 (0.1%) indicated an Armenian Apostolic denomination. The answer "other Christian" was chosen by 13,927, or 0.3%. Muslim denomination was indicated by 638,708 persons, or 10.8%, Jewish – 1,736, and 6,451 persons professed other denominations (National Statistical Institute, 2021).

5.5.3 Environmental Authorities

The Ministry of Environment and Water (MOEW) conducts the overall state policy on climate change mitigation, assisted by the National Expert Committee on Climate Change as an advisory body. For the purpose of application and implementation of the country's commitments under international, European and national legislation on climate change, Directorate Policy on Climate Change is structured within the ministry (Ministry of Environment and Water, 2024).

The MOEW has the following subsidiary bodies: Executive Environmental Agency, fifteen Regional Inspectorates for Environment and Water, three National Parks, and four Basin Directorates (Eighth National communication on climate change, p. 16). The four Basin Directorates are “Eastern Aegean Region”, “Danube Region”, “Black Sea Region”, and “West Aegean Region”, their main task is to inspecting the facilities and the conductivity of rivers and other water basins on the territory of the country that fall within the scope of their responsibilities (Ministry of Environment and Water, 2024).

The Executive Environmental Agency (ExEA) within MOEW performs monitoring of the implementation of climate change related measures. This agency is responsible for the preparation of the Green House Gases (GHG) inventories (Eighth National communication on climate change, p. 16) and a National Reference Center within the European Environmental Agency (EEA) and a member of European Protection Agencies (EPA) Network (Executive Environmental Agency, 2024).

A number of agencies with key disaster management capabilities are also financed through the state budget. Among them are the Executive Agency “Forestry”, the National Centre of Radiology and Radiation protection, and others (Tagarev, 2015).

Several research institutes of the Bulgarian Academy of Science, most notably National Institute for Meteorology and Hydrology and the National Institute for Geophysics, Geodesy and Geography, performs operational activities such as 24/7 monitoring, early warning, and forecasting (Tagarev, 2015). The Institute of Astronomy and National Astronomical Observatory conducts research in astronomy and astrophysics (Institute of Astronomy, 2024).

The Institute of Biodiversity and Ecosystem Research was founded on 1st July 2010. The institute carries out research in pure and applied aspects of ecology, biodiversity, nature conservation, and sustainable use of biological resources. It provides scientific service and methodological support

to the state institutions and non-governmental structures. The institute also represents Bulgaria in the European Research Area in the directions corresponding to its research profile (Institute of Biodiversity and Ecosystem Research, 2024).

The International Commission for the Protection of the Danube River (ICPDR) works to ensure the sustainable and equitable use of waters in the Danube River Basin. The work of the ICPDR is based on the Danube River Protection Convention (DRPC), the major legal instrument for cooperation and transboundary water management in the Danube River Basin. The ICPDR has been established at 1998 and has promoted policy agreements and the setting of joint priorities and strategies for improving the state of the Danube and its tributaries (International Commission for the Protection of the Danube River, 2024). This includes improving the tools used to manage environmental issues in the Danube basin, such as:

- the Accident Emergency Warning System,
- the Trans-National Monitoring Network for water quality, and
- the Information System for the Danube (Danubis).

5.5.4 Media

The media, as a part of co-operating bodies, act as a helping hand during an emergency situation (Rauner et al., p. 498). Through the media, the population is informed about the development of the disaster, measures for its mitigation and containment, and the precautions (Tagarev, 2015). Figure 12 depict the final part of the co-operating bodies in Bulgaria, consisting of the media, voluntary sector, and cyber security.

The main source of information for the majority of Bulgarians is still television. For the oldest respondents, the share of television as a main source of information even reaches over 80% (Petkova, 2022). Television broadcasts are mostly privately owned, where the most watched channels are Nova News (60%), BTV News (54%), BNT (Bulgarian National Television) (35 %) (Antonov, 2024). Among youngest respondents, however, television has been replaced by social networks and other websites (Petkova, 2022).

Social media platforms are becoming increasingly important among all age groups in society. The most used are Facebook (71%), Instagram (30%), and TikTok (29%) following by instant messengers WhatsApp, Viber, and Facebook Messenger (Antonov, 2024).

The Bulgarian press market is characterized by a high number of daylies per capita and low newspaper circulation (Ruzha Smilova, Daniel Smilov, Georgi Ganev, 2010, p. 45). With the exception of a few local newspapers and the official State Gazette, all print media in Bulgaria are privately owned, including foreign ownership (Ruzha Smilova, Daniel Smilov, Georgi Ganev, 2010, p. 45). The most popular print media are “24 Chasa” (“24 Часа“), “Trud” (“Труд”), “Standart” (“Стандарт”), “Telegraf” (“Телеграф”), “Monitor” (“Монитор”), “Sega” (“Сегга”), “Duma” (“Дума”), and “Zemya” (“Земя”) (Assoc. dr. Cankova, 2018).

Favorite podcast topics among Bulgarians are inspirational stories, health, sports, humorous topics, politics, etc. The most common reason for listening to podcasts is the provision of useful information (Zaprynov, 2022). One of the leading podcasts is Capital newspaper – “Politika I ikonomika” (Политика и икономика, Politics and economics). “Translation on-air” (“Превод в ефир”), is a podcast for analyzing the political life of the country over the past week and is one of the most popular podcasts in Bulgaria. Journalist Paunova provides commentary on politicians and events. A few academic podcasts as the podcast “4 Corps - Virtual Student Society” are made by the students of the Mass Communication Department at New Bulgarian University (NBU).

The “BG Nauka” (Bulgarian science) podcast is oriented – as it is a podcast from the Bulgarian Science Magazine. “Comedy Club” („Комеди Клуб“) is an example of a comedy show broadcast (Mavrodieva, 2021, p. 11-12).

As for the blogs, there are no reliable data.

Radio broadcasting in Bulgaria is mostly private, except for the public service media (Verza, 2024), Bulgarian national radio (BNR). The most popular radio stations are Veselina, “Horizont” BNR, Radio 1, Fresh and Darik Radio (Hristova, 2022).

Regarding the state administration’s own communication channels, the organization’s website (96.2%), e-mail (90.1%), and hotline (46.2%) are prioritized, which in their technical nature are mostly used for one-way communication and are partially asynchronous (Valchanov et al., 2022, p. 58). Furthermore, of the most popular social media in Bulgaria, communication specialists in institutions use Facebook (54.9%) (Valchanov et al., 2022, p. 58).

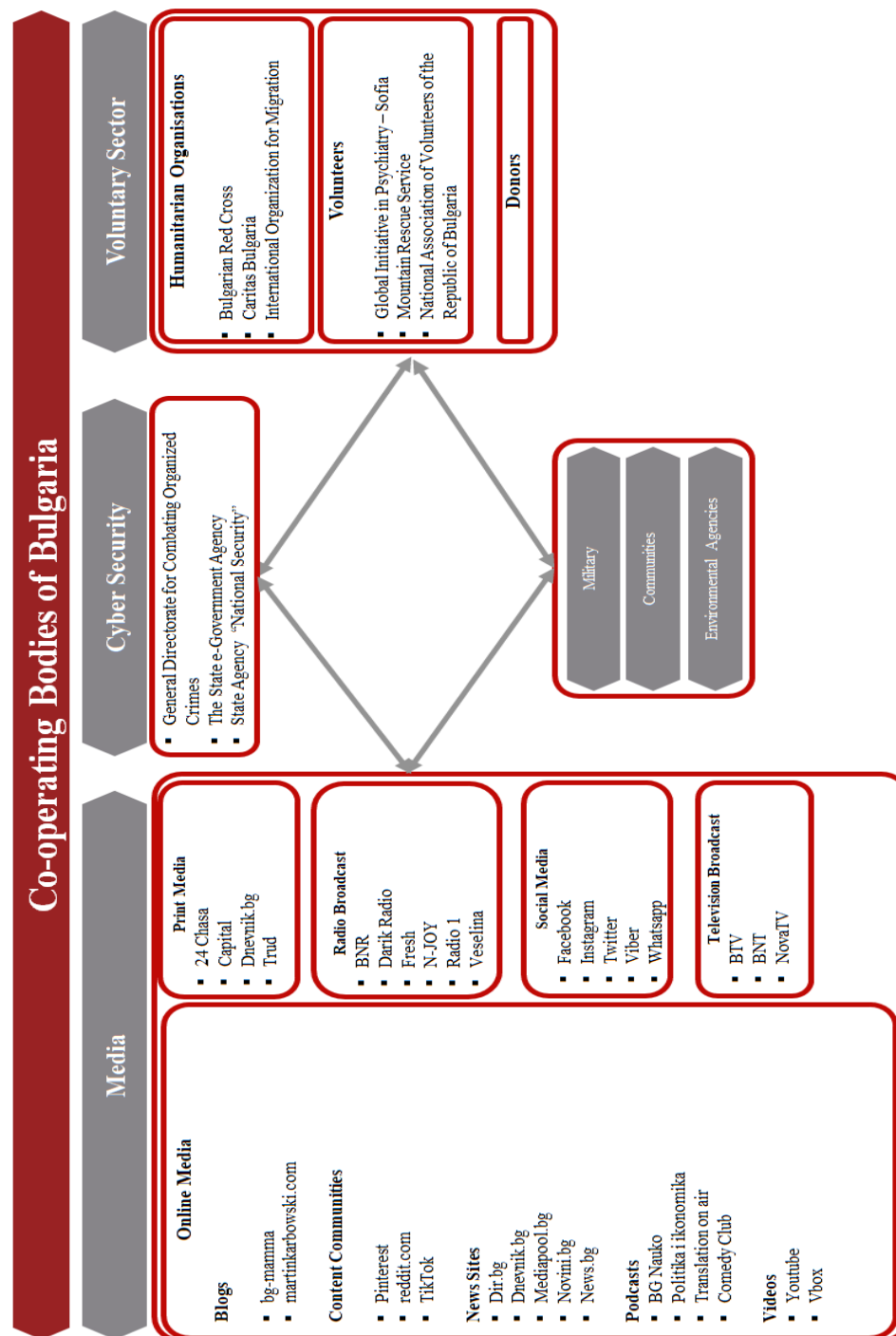


Figure 12: Overview of Bulgarian Co-Operating Bodies (2/2)

Source: Framework adapted from Walter (2020), content created by the author

5.5.5 Cyber Security

With the digitalization of services and the growing role of technologies, cyber security has become more and more important (Nikolova, 2017). According to the Global Risk Report 2024 in collaboration (Zaprynov, 2022) with the World Economic Forum, in the short time the cyber insecurity is placed in the 4th place (Global Risks Report 2024).

Since 1998 there is a department for cybercrimes in Bulgaria as part of the “National Bureau for Combating Organized Crimes” (Национална служба “Борба с организираната престъпност” ,NSBOP) until 2008 and today “General Directorate for Combating Organized Crimes” (Главна дирекция борба с организираната престъпност, GDPOB) who is engaged and collaborates with government organizations, private companies, foundation, and citizens for the purpose of timely countermeasure against cyber-attacks and crimes that use high-tech tools and techniques (Ministry of Interior, 2024).

The cyber security in Bulgaria is regulated by the Cyber security Law, which was adopted by the 44th National Assembly on 31 October 2018 and was promulgated in issue 94 of the State Gazette on 13 November 2018. At its core, transposes the Directive (EU) 2016/1148 of the European Parliament (Electronic Governance Infrastructure, 2024).

The State e-Government Agency (“Държавна агенция Електонно управление“, SEGA) has the lead responsibility for network and information security (Tagarev, T., & Rizov, V., 2022, p. 7). State e-Government Agency perform activities related to issuing and introducing control-related policies, rules, regulations, and good practices in the field of electronic governance, strategic planning and initiatives, budget planning, as well as control and coordinating sector-related policies (State e-Government Agency, 2024) and the protection of classified information (Tagarev, T., & Rizov, V., 2022 p. 6).

The State Agency “National Security” (Държавна агенция “Национална сигурност“, DANS) is the national counterintelligence organization tasked to counter cyber espionage and threats to “strategic assets” (Tagarev, T., & Rizov, V., 2022, p. 7).

The most common cyber security threats for the government agencies are theft of sensitive information, cyber vandalism, phishing, POS (Proof-of-Stake) and DDoS (Distributed Denial-of-Services) (Nikolova, 2017).

5.5.6 Volunteering

Volunteers and volunteer organizations are essential to the public rescue services as they are offering assistance at different levels of impact response (Rauner, 2018).

The National Association of Volunteers of the Republic of Bulgaria was founded in 2014 in Sofia and within its organizational structure brings together all stakeholders in the crisis management process – volunteers, professional firefighters, rescue and local government (National Association of Volunteers in the Republic of Bulgaria, 2024). The organization is constantly increasing its membership across the country and is in the process of building a national volunteer network (DAREnet, 2024).

For “The Earth” (“За Земята”) is a Bulgarian environmental non-governmental organization determined to work for self-sustainable lifestyles, for responsible personal and political decisions for our planet, while combating exploitation of people and nature. Founded in 1991, it is among the oldest environmental NGOs in Bulgaria (Friends of the Earth International, 2024).

The Bulgarian Red Cross, which is part of the International Red Cross Movement and has already been mentioned, takes an active part in supporting national volunteer organizations in emergency situations.

Bulgarian Helsinki Committee (BHC) is an independent, non-governmental, not-for-profit civil society organization for defending fundamental human rights in the Republic of Bulgaria, that has been established in 1992. The focus of BHS is protecting minorities and the vulnerable groups of the society (Bulgarian Helsinki Committee, 2024).

Caritas Bulgaria is a member of Caritas Internationalis and Caritas Europa as well as other relevant organizations such as: the Bulgarian Council on Refugees and Migrants, Bulgarian Platform for International Development, National Council on Social Inclusion Issues at the Council of Minister, and Christian Organizations against Trafficking Network (COATNET) (Caritas.org, 2024).

The Caritas organization has been founded on 1993 deploys 632 staff and volunteers and 5,702 beneficiaries and consists of three dioceses: 1) Caritas Sofia, 2) Caritas Ruse, and 3) Caritas Vitania. The main areas of operations are the following:

- Providing social, health, and educational care and services;

- Responding to emergency situations, and;
- Advocacy activities before the Bulgarian government to develop and implement long-term and effective social policies that leads to sustainable improvement of the quality of life of people in vulnerable situations.

The International Organization for Migration (IOM) is part of United Nation system and the Republic of Bulgaria has been a member since 1994. The Mission of IOM Bulgaria consists of a head office in Sofia and a regional Migrant Information Center for legally residing migrants in Burgas. Another field office is present in the Harmanli. IOM Bulgaria seeks to assist the government in the development and implementation of migration policies that effectively address modern migration realities and challenges, as well as help building a stable migration management structures responsive to the increasing external migration flows (International Organization for Migration, 2024).

6 CRITICAL COMPARISON WITH OTHER COUNTRIES

The following section will critically compare the emergency management structures in Bulgaria with those of Romania, Serbia, and Bosnia and Herzegovina. The four countries have been selected, because they share similar geographical characteristics and are exposed to similar risks for disasters. The analysis is based on the master thesis works of Muqai (2018) for Romania, Predic (2018) for Serbia and Bosnia and Herzegovina, as well as the content from the previous sections of this work for Bulgaria.

6.1 General Information

Bulgaria, Romania, and Serbia are neighboring countries, while Bosnia and Herzegovina is part of the Balkan Peninsula and shares borders and common history with Serbia. The territory of all is covered by mountains, hills, coastal areas, forests and full-flowing rivers, which make them, deal with the same natural risks, such as floods, fires, and storms. Nevertheless, as territory and population Romania is the biggest one (Muqai (2018), Predic (2018)).

On the Government level, Serbia and Bulgaria are parliamentary republics; however Romania is a semi-presidential republic. Bosnia and Herzegovina strongly differ with a complex structure. The country is divided into two entities: 1) the Federation of Bosnia and Herzegovina and 2) the Republika Srpska, as well as the Brčko District (Muqai (2018), Predic (2018)).

6.2 Core Responders

The following subsection will depict an analysis of the core responders in Bulgaria compared to these in Romania, Serbia, and Bosnia and Herzegovina. The main groups - government, health care organizations, and emergency services and the corresponding subsets are reviewed, while focusing on similarities and differences.

From governmental perspective, Bulgaria and Serbia have relatively similar response institutions. In Bulgaria, within the Ministry of the Interior, the General Directorate “Fire Safety and Civil Protection” is the main response institution and has responsibilities on an operational level for managing the national emergencies. In Serbia, within the Ministry of the Interior, there is the Department for Emergency Situations and while it is a specific department, the operational core of it is composed of professional firefighting teams. In both countries, these organizations have between 27 and 28 local representative units. From the Ministry of Defence and military

involvement point of view, both countries have very similar practices and procedures (Predic, 2018).

But when comparing Bulgaria and Bosnia and Herzegovina on governmental level, there are notable differences. In Bosnia and Herzegovina, the Ministry of the Interior (Federal Ministry of Internal Affairs) has a decentralized organizational structure and operates at federal level, while there are additional cantonal Ministries of Interior (Ministries of Internal Affairs), which are responsible for their respective cantons. The Council of Ministers plays a leading role in disaster management in Bosnia and Herzegovina, as it is responsible for establishing the coordinating body for protection and rescue. This organization then directs protection and rescue activities of all entities within the country (Predic, 2018).

Also, when comparing Bulgaria and Romania from governmental perspective, there are some differences. In Romania, the Ministry of Interior has the substructure General Inspection for Emergency Situations, which together with the Committees for Emergency Situations; the Public, professional Services for Emergency Situations; the Operative Centers for Emergency Situations, and the Commander of the Actions form the disaster management system. Although similar organizations are present in Bulgaria, there is not such an explicit system (Muqai, 2018).

Next, the national health care organizations in the four countries will be critically analyzed. Based on the number of hospitals, there were 319 in 2021 in Bulgaria. In Serbia, the number was more than four times lower - at 77 in 2015. Considering that the two countries have a very similar population - between 6.5 and 6.6 million people, this is a notable difference (Predic, 2018).

When comparing the number of private hospitals, there were 115 in 2021 in Bulgaria. In Romania the number was just 40% more - at 161 in 2016. Considering that the population of Romania is around 300% more, this shows that there are a lot more private hospitals in Bulgaria per capita (Muqai, 2018).

Unlike in Bulgaria and Serbia, where the healthcare system is centralized and the hospitals fall under administration of the Ministry of Health, in Bosnia and Herzegovina, it is highly decentralized. There are multiple cantonal and federal Ministries of Health, Health Insurance Institutes and Public Health Institutes (Predic, 2018).

Following the national health care organizations, as next step the various emergency services is discussed.

From the fire safety point of view, there are very similar numbers of operative centers in Bulgaria and Serbia. The professional organizational units consist of 27 units in Serbia and 28 in Bulgaria. In Bosnia and Herzegovina the fire safety structure is complex. In the Federation of Bosnia and Herzegovina, unlike in Bulgaria and Serbia, the professional fire safety organizations aren't part of the Ministry of Interior, but are organized within the fire and rescue sector of the Federal Department for Civil Protection. In the Republic of Srpska, there is a Firefighting Association of Republic of Srpska and special municipal fire brigade units (Predic, 2018). In Romania, the firefighting organization is similar to Bulgaria and Serbia subpart of the Ministry of Interior, more specifically under the General Inspection for Emergency Situations (Muqai, 2018).

6.3 Non-Core Responders

The following subsection will depict an analysis of the non-core responders in Bulgaria compared to these in Romania, Serbia, and Bosnia and Herzegovina. The main groups - government, strategic health authorities, health care organizations, and the critical infrastructure providers and the corresponding subsets are reviewed, while focusing on similarities and differences.

From a government perspective, all four countries have very similar competent ministries, that have emergency management responsibilities (e.g., Ministry of Finance, Ministry of Transportation and Communication, etc.). Additionally, specialized agencies are also present such as the Food and Safety Agency (Predic, 2018; Muqai, 2018).

The strategic health authorities are also similarly organized in all four of the countries. There are on one hand state organizations, which manage and improve the health insurance system and on the other hand state organizations, which are focused on the development and execution of the national health policies (Predic, 2018; Muqai, 2018).

All the four countries provide comprehensive health care services with general hospitals, university hospitals, and regional health care centers. One difference in the management approach can be seen in Bosnia and Herzegovina, where there is a separate Ministry of Health for each canton within the country, whereas in Bulgaria, Romania, and Serbia, there is only one Ministry of Health, which manages all hospitals on a national level (Predic, 2018; Muqai, 2018).

From the perspective of the pharmaceutical market, the sales of pharmaceutical products per capita in Bulgaria are a lot higher than in Romania. This can be seen when comparing the 2.8 billion Euro in total sales in Romania in 2016 with the two billion Euro in total sales in Bulgaria in 2019, because, although there is some percentage to be considered in inflation of the prices, Bulgaria's population is 6.5 million, whereas Romania's population is three times more. There are similarities between the two countries, when analyzing the biggest pharmaceutical companies by sales - Novartis and Pfizer have high market shares (Muqai, 2018).

Regarding the electricity infrastructure and transmission grid, there is a difference between Bulgaria and Serbia, and Bosnia and Herzegovina. In Bulgaria there is the Bulgarian Energy Holding EAD (BEH), which is an association of companies, whereas in Serbia and Bosnia and Herzegovina there is respectively only one company - Serbian Power Transmission Company and The Power Transmission Company of BiH (Bosnia and Herzegovina) (Predic, 2018).

Regarding electricity production, there are also differences between Bulgaria and Serbia, and Bosnia and Herzegovina. In Bulgaria, the production is highly diversified through various plants and predominantly done by a nuclear power plant followed by thermal power plants. In Serbia and in Bosnia and Herzegovina, on the other hand, most of the electricity is produced by hydro power plants, followed by thermal power plants (Predic, 2018).

Another difference between Bulgaria and Bosnia and Herzegovina can be seen in the heating energy sector. While heating energy is a popular type of energy in Bulgaria, in Bosnia and Herzegovina, only 8% of all households have central heating from heating plants (Predic, 2018). To provide also a comparison with Romania, there this type of heating is covering just under 15% of the total demand and has been experiencing a steep decline in the last three decades (Muqai, 2018).

The food and beverage providers are another aspect that can be compared. The largest grocery retail stores in Bulgaria and Romania are the same - Kaufland and Lidl, both German companies (Muqai, 2018). In Serbia and Bosnia and Herzegovina, on the other hand, the biggest grocery retailers are local and from Bosnia and Herzegovina (Predic, 2018).

6.4 Co-Operating Bodies

The following subsection depicts an analysis of the co-operation bodies in Bulgaria compared to those in Romania, Serbia and Bosnia and Herzegovina. The three countries, Romania, Serbia and BiH have relatively similar military structures and in all of them the military plays an important role in emergency situations as in Bulgaria. Bulgaria and Romania are both members of NATO and EU, where Serbia and Bosnia and Herzegovina have been members of the Partnership for Peace programme since 2006 (NATO, 2024).

Comparing the communities in the four countries can be summarized that, in BiH and Serbia there are close relationship between state and church, in contrast to Bulgaria in Romania, where the constitutions of both countries recognize the freedom of religion, but the religion is not a part of the institutional landscape of the countries. In Romania on the other hand, the church plays a pivot role in communities' life with strong presence on the territory, 27,384 churches, chapels, and houses of worship, synagogues, and mosques (Muqai, 2018; Predic, 2018)

Bulgaria, Serbia, and Romania have the majority Orthodox Christian, where in BiH are more mixed religious, with Islam being the dominant (Muqai, 2018; Predic, 2018).

The environmental organizations and authorities have a strong presence in all four countries and do not differ. Their main tasks are conducting research, developing new environment strategy and providing information to authorities (Muqai, 2018; Predic, 2018).

In all comparing countries, the voluntary sector play an important role, where in Serbia are predominantly branches of international organizations and in the Brčko District is observed strong religious influence (Muqai, 2018; Predic, 2018).

Cyber security is becoming an increasingly important and essential in today's world and all four countries are in a process of incorporating into national and international legislation as well as improving strategies and analyzing risks (Muqai, 2018; Predic, 2018).

7. CONCLUSION

The disaster management strategy in Bulgaria has been long developed and timely updated, based on the changes in both the natural and human environment. The successful execution of the strategy requires constant cooperation of multiple stakeholders, their preparedness, resilience, and diligence.

This master thesis presented an effort to provide useful answers to the previously defined research questions. The geographical and geopolitical location of Bulgaria, between two continents, faces the country with various emergency risks. Natural disasters such as floods and fires have been a constant threat throughout the years. But there is also the danger from illegal human activities such as terrorist attacks, drugs, and people trafficking.

Multiple laws, acts, plans, and programmes have been developed and continuously adapted to provide a basis for the emergency management stakeholders to be able to react and coordinate timely responses. The processes and practices are set up in a way to provide fast safety and security measures. Certain organizations, both public and private are considered part of the critical infrastructure and are required to have preparedness plans and provide the required support based on the situation.

The emergency management structure in Bulgaria is characterized by a centralized approach, where the responsibilities of the various stakeholders are clearly defined both on national and local level. Bulgaria's preparedness to face disasters, although well developed, could be further improved. The core and non-core responders, and the co-operating bodies are mostly organized by having decision-making authorities in the capital city and in addition to that regional entities in every regional city.

The main stakeholders in Bulgaria for emergency management on national level are the Council of Ministries, led by the Ministry of Interior, and its subdivision the General Directorate "Fire Safety and Civil Protection" and the National and Executive Agencies. On a local level the regional governors and municipality mayors have respective authorities with the support of the local agency units. There are also voluntary organizations, that support the efforts of the professionals.

When comparing Bulgaria to countries with similar emergency risks such as Romania, Serbia, and Bosnia and Herzegovina, there can be seen both similarities and strong differences. The

organizations, structures, and practices vary, but operationally, Bulgaria has with Serbia most similarities, which given the similar size, location, population, and history is understandable. The cooperation with Romania is fostered further because of the EU-membership of both countries. Cross-border emergency response collaborations are present and developing.

The Russo-Ukrainian conflict has had considerable influence on Bulgaria. From an economic perspective, many industries were affected by rising costs and prices. The financial impact was worst in the agriculture, tourism, and energy sectors. But there was also a notable impact in the social, political, and military aspects.

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Abstract (German)

Katastrophen sind zerstörerische, schwere und meist unerwartete Ereignisse, die erhebliche Auswirkungen auf die Wirtschaft, die Umwelt und die Lebensbedingungen der Menschen haben können. Die Herausforderung, in einem derart risikoreichen Umfeld zu leben, macht es erforderlich, die bisherigen Ansichten über Naturkrisen und die damit verbundenen Krisensituationen zu überdenken. Daher spielt die Entwicklung eines widerstandsfähigen und fortschrittlichen Krisenmanagementsystems eine wichtige Rolle für die nachhaltige Entwicklung des Landes.

In dieser Masterarbeit wird eine eingehende Analyse der wichtigsten am Notfallmanagementprozess auf nationaler Ebene beteiligten Akteure vorgenommen. Die Struktur der Hauptentscheidungsträger basiert auf dem Projekt Securing Health.Emergency.Learning.Planning (S-HELP) European fp7-Project an der Universität Wien unter der Leitung von ao. Univ.-Prof. Dr. Marion Rauner. Die Stakeholder sind in drei Hauptgruppen unterteilt: 1) Core Emergency Responders, 2) Non-Core Emergency Responders und 3) Co-Operating Bodies.

Die Struktur wurde auf Bulgarien angewandt, die drei Hauptgruppen analysiert und näher erläutert. Außerdem wird der Einfluss des russisch-ukrainischen Konflikts auf Bulgarien beleuchtet. Schließlich wird eine vergleichende Analyse mit drei anderen Ländern durchgeführt: Rumänien, Serbien und Bosnien und Herzegowina.

Abstract (English)

Disasters are destructive, severe and mostly unexpected, that can significantly impact the economy, environment, and people's living conditions. The challenge of living in such a risky environment determines the need to rethink the existing views on the natural crisis and crisis situation related to them. Therefore, the development of resilient and advanced crisis management system plays an important role in the sustainable development of the country.

This master thesis provides an in-depth analysis of main stakeholders involved in the emergency management process on national level. The structure of the key decision makers is based on the project Securing Health.Emergency.Learning.Planning (S-HELP) European fp7-Project at the University of Vienna under the supervision of ao. Univ.-Prof. Dr. Marion Rauner. The stakeholders are subdivided in three main groups: 1) Core Emergency Responders, 2) Non-Core Emergency Responders, and 3) Co-operating Bodies.

The structure has been applied to Bulgaria and the three main groups' analyzed and explained in more details. Additionally, the influence of the Russo-Ukrainian conflict on Bulgaria has been examined. Finally, comparative analysis is conducted with three other countries: Romania, Serbia, and Bosnia and Herzegovina.

Appendix: Translation of Stakeholders in English, Bulgarian, and German

English	Bulgarian	German
Agency “Road Infrastructure”	Агенция “Пътна инфраструктура”	Agentur für Straßeninfrastruktur
Agency for Geodesy, Cartography, and Cadaster	Агенция по геодезия, картография и кадастър	Agentur für Geodäsie, Kartographie und Kataster
Agency for Nuclear Regulation	Агенция за ядрено регулиране	Agentur für Atomregulierung
Agency for Sustainable Energy Development	Агенция за устойчиво енергийно развитие	Agentur für nachhaltige Energieentwicklung
Border-police Department	Служба “Гранична полиция”	Grenzpolizeibehörde
Bulgarian Drug Agency	Изпълнителна агенция по лекарствата	Bulgarische Arzneimittelagentur
Bulgarian Energy Holding	Български енергиен холдинг	Bulgarische Energieholding
Bulgarian Federation of Radio Amateurs	Българска федерация на радиолюбителите	Bulgarischer Funkamateurverband
Bulgarian Food Safety Agency	Българска агенция по безопасност на храните	Bulgarische Agentur für Lebensmittelsicherheit
Bulgarian Red Cross	Български червен кръст	Bulgarisches Rotes Kreuz
Centers for Emergency Medical Help	Цетрове за спешна медицинска помощ	Zentren für Notfallmedizin
Commission for Energy and Water Regulation	Комисия за енергийно и водно регулиране	Kommission zur Regulierung von Energie und Wasser
Consultative Council on National Institute of Geophysics Security	Консултативен съвет за национална сигурност	Beirat für nationale Sicherheit
Council of Ministers	Министерски съвет	Ministerrat
Directorate “Waste Management and Soil Protection”	Дирекция “Управление на отпадъците и опазване на почвите”	Direktion “Abfallmanagement und Bodenschutz”
Executive Agency “Medical Supervision”	Изпълнителна агенция “Медицински надзор”	Exekutivagentur “Medizinische Aufsicht”
Executive Agency Forestry	Изпълнителна агенция по горите	Exekutivagentur Forstwirtschaft
Executive Environmental Agency	Изпълнителна агенция по околна среда	Exekutivagentur für Umwelt
General Directorate “Fire Safety and Civil Protection”	Главна дирекция “Пожарна безопасност и защита на населението”	Generaldirektion “Brandschutz und Zivilschutz”

English	Bulgarian	German
General Directorate “Border Police”	Главна дирекция “Транична полиция”	Generaldirektion “Grenzpolizei”
General Directorate “Civil Aviation Administration”	Главна дирекция “Гражданска въздухоплавателна администрация”	Generaldirektion “Zivilluftfahrtverwaltung”
General Directorate “Fight Against Organized Crime”	Главна дирекция “Борба с организираната престъпност”	Generaldirektion “Kampf gegen die organisierte Kriminalität”
General Directorate for Emergency and Rescue Activity to the Executive Agency “Maritime Administration”	Главна дирекция “Аварийно спасителна дейност” към Морска Администрация	Generaldirektion für Notfall- und Rettungsaktivitäten an die Exekutivagentur “Seeverwaltung”
General Directorate “Gendarmerie, Special Operations, and Fight against Terrorism”	Главна дирекция “Жандармерия, специални операции и борба с тероризма”	Generaldirektion “Gendarmerie, Spezialoperationen und Terrorismusbekämpfung”
General Directorate “National Police”	Главна дирекция “Национална полиция”	Generaldirektion Landespolizei”
Geophysical Institute to the Bulgarian Academy of Science	Геофизичен институт на БАН	Geophysisches Institut der Bulgarischen Akademie der Wissenschaften
International Commission for Alpine Rescue	Международна комисия по алпийско спасяване	Internationale Kommission für alpine Rettung
Joint Commission for Restoration and Relief	Междуетовствена комисия за възстановяване и подпомагане	Gemeinsame Kommission für Wiederherstellung und Hilfe
Maritime Rescue-Coordination Center	Морски спасително-координационен център	Maritimes Rettungs-Koordinationszentrum
Military Medical Academy	Военномедицинска академия	Medizinische Militärakademie
Ministry of Agriculture and Food	Министерство на земеделието и храните	Ministerium für Landwirtschaft und Lebensmittel
Ministry of Defence	Министерство на отбраната	Ministerium für Landesverteidigung
Ministry of Economy and Industry	Министерство на икономиката и индустрията	Ministerium für Wirtschaft und Industrie
Ministry of Electronic Governance	Министерство на електронното управление	Ministerium für elektronische Verwaltung
Ministry of Energy	Министерство на енергетиката	Ministerium für Energie

English	Bulgarian	German
Ministry of Environment and Water	Министерство на околната среда и водите	Ministerium für Umwelt und Wasser
Ministry of Finance	Министерство на финансите	Ministerium für Finanzen
Ministry of Foreign Affairs	Министерство на външните работи	Ministerium für Auswärtige Angelegenheiten
Ministry of Health	Министерство на здравеопазването	Ministerium für Gesundheit
Ministry of Interior	Министерство на вътрешните работи	Ministerium des Innern
Ministry of Justice	Министерство на правосъдието	Ministerium für Gerechtigkeit
Ministry of Labor and Social Policy	Министерство на труда и социалната политика	Ministerium für Arbeit und Sozialpolitik
Ministry of Regional Development and Public Works	Министерство на регионалното развитие и благоустройството	Ministerium für regionale Entwicklung und öffentliche Arbeiten
Ministry of Transportation and Communications	Министерство на транспорта и съобщенията	Ministerium für Transport und Kommunikation
Mountain Rescue Service	Планинска спасителна служба	Bergrettungsdienst
National Agency “State Reserve and Wartime Stock”	Национална агенция “Държавен резерв и военновременни запаси”	Nationale Agentur “Nationale Reserve und Kriegsvorräte”
National Assembly	Народно събрание	Nationalversammlung
National center of Infectious and Parasitic Diseases	Националният център по заразни и паразитни болести	Nationales Zentrum für Infektions- und Parasitenkrankheiten
National Center for Public Health and Analysis	Национален център по обществено здраве и анализи	Nationales Zentrum für öffentliche Gesundheit und Analyse
National Council on Prices and Reimbursement of Medicinal Products	Национален съвет по цени и реимбурсиране на лекарствените продукти	Nationaler Rat für Preise und Erstattung von Arzneimitteln
National Health Insurance Fund	Национална здравноосигурителна каса	Nationale Krankenversicherungskasse
National Institute for Meteorology and Hydrology to the Bulgarian Academy of Science	Национален институт по метеорология и хидрология към БАН	Nationales Institut für Meteorologie und Hydrologie der Bulgarischen Akademie der Wissenschaften
National Statistical Institute	Национален статистически институт	Nationales Statistisches Institut
Prime Minister’s Office	Министерски съвет	Büro des Premierministers

English	Bulgarian	German
Rapid Reaction Military Medical Team	Медицински отряд за бързо реагиране	Militärisches Sanitätsteam für schnelle Reaktionen
Regional Associations for Waste Management	Регионално сдружение за управление на отпадъците	Landesverbände für Abfallwirtschaft
Regional Health Inspectorate	Регионален здравен инспекторат	Regionales Gesundheitsinspektorat
Regional Inspection for Environment and Water	Регионална инспекция по околната среда и водите	Regionale Inspektion für Umwelt und Wasser
Regional Police Directorate	Районно полицейско управление	Regionale Polizeidirektion
Rescue Dog Team	Група за спасяване с кучета при БЧК	Rettungshundeteam
Security Council	Съвет по сигурността	Sicherheitsrat
State Agency for Metrological and Technical Supervision	Национална агенция по метрологичен и технически надзор	Staatliche Agentur für metrologische und technische Aufsicht
State Agency for National Security	Агенция за национална сигурност	Staatliche Agentur für nationale Sicherheit
National Association of Volunteers in the Republic of Bulgaria	Национална асоциация на доброволците в Република България	Nationale Vereinigung der Freiwilligen in der Republik Bulgarien