



READY ² RESPOND



Diagnostic Report

Emergency Preparedness and Response Assessment



North Macedonia



© 2021 International Bank for Reconstruction and Development / The World Bank
1818 H Street NW
Washington DC 20433
Telephone: 202-473-1000
Internet: www.worldbank.org

This report is a product of the staff of The World Bank and the Global Facility for Disaster Reduction and Recovery (GFDRR). The findings, interpretations, and conclusions expressed in this work do not necessarily reflect the views of The World Bank, its Board of Executive Directors or the governments they represent. The World Bank and GFDRR does not guarantee the accuracy of the data included in this work. The boundaries, colors, denominations, and other information shown on any map in this work do not imply any judgment on the part of The World Bank concerning the legal status of any territory or the endorsement or acceptance of such boundaries.

The sole responsibility of this publication lies with the author. The European Union is not responsible for any use that may be made of the information contained therein.

Rights and Permissions

The material in this work is subject to copyright. Because the World Bank encourages dissemination of its knowledge, this work may be reproduced, in whole or in part, for noncommercial purposes as long as full attribution to this work is given.

Acknowledgments

This report and associated activities are financed by the European Union in the framework of the Western Balkans Disaster Risk Management Program, managed by the Global Facility for Disaster Reduction and Recovery and the World Bank.

This document is one of five **Ready2Respond** (R2R) analysis reports commissioned by the World Bank and conducted by Prepared International (PPI) to assess the emergency preparedness and response capacities of five Western Balkan nations. Each report includes a summary of the findings and identifies key investment recommendations for each of the five R2R components. The full diagnostic report is included as annex 1; further details on data collection are to be found in annex 2.

Table of Contents

Abbreviations	5
Executive Summary	6
Introduction	7
This Report	7
Country Risk Profile	7
Methodology	7
Overall R2R Results	9
Component 1: Legal and Institutional Accountability	11
Component Overview	11
Component Conclusions	11
Key Investment Opportunities	13
Component 2: Information	14
Component Overview	14
Component Conclusions	14
Key Investment Opportunities	16
Component 3: Facilities	17
Component Overview	17
Component Conclusions	17
Key Investment Opportunities	19
Component 4: Equipment	20
Component Overview	20
Component Conclusions	20
Key Investment Opportunities	22
Component 5: Personnel	23
Component Overview	23
Component Conclusions	23
Key Investment Opportunities	25
Annex 1: Full Diagnostic Report	27
Annex 2: Interview Overview	57
Annex 3: References and Consulted Documents	59
Figure 1. Emergency Preparedness and Response System Core Components	8
Figure 2. Diagnostic Scores for North Macedonia	10
Figure 3. Scoring for Legal and Institutional Accountability	11
Figure 4. Scoring for Information	14
Figure 5. Scoring for Facilities	17
Figure 6. Scoring of Equipment	20
Figure 7. Scores for Personnel	23
Figure 8. EP&R System in North Macedonia	27
Figure 9. Donations through Operation Florian to Firefighting Services in North Macedonia	49
Table 1. Average EP&R Criteria Scores for North Macedonia	9

Abbreviations

CBC	Cross Border Cooperation
CECIS	Common Emergency Communication and Information System
CMC	Crisis Management Center
DMIS	Disaster Management Information System
EOC	emergency operations center
EP&R	emergency preparedness and response
EPICURO	European Partnership for Urban Resilience
EU	European Union
GIS	geographic information system
GIZ	German Agency for International Cooperation
ICAR	International Commission for Alpine Rescue
IFRC	International Federation of Red Cross and Red Crescent Societies
IOM	International Organization for Migration
IPA	Instrument for Pre-Accession Assistance
JICA	Japan International Cooperation Agency
MKFISS	Macedonian Forest Fire Information System
NICS	Next Generation Incident Command System
NGO	nongovernmental organization
PPI	Prepared International
PRD	Protection and Rescue Directorate
R2R	Ready2Respond
SOP	standard operating procedure
UCPM	Union Civil Protection Mechanism
UNDP	United Nations Development Programme
USAR	urban search and rescue
WASH	water, sanitation, hygiene
WHO	World Health Organization

Executive Summary

In 2020, the World Bank engaged Prepared International (PPI) to support the Western Balkan disaster risk management program by providing an assessment of current national and regional emergency preparedness and response (EP&R) capacities. PPI undertook **country-specific assessments of EP&R capacity in five Western Balkan nations** (Albania, Bosnia and Herzegovina, Kosovo, Montenegro, and North Macedonia) using the Ready2Respond (R2R) diagnostic methodology. Based on these findings, PPI identified priority EP&R investments at country and regional levels. This report includes the assessment of North Macedonia's EP&R capacities and the associated priority investments; a more detailed investment report is published separately.

The R2R diagnostic is designed to be an objective, data-driven foundation to engage country counterparts in EP&R development projects. The methodology builds on five core components—legal and institutional frameworks, information, facilities, equipment, and personnel—which are further divided into 18 criteria, 72 indicators, and 360 attributes. **North Macedonia has an overall score of 165 out of 360.** The country's scores range widely across criteria and indicators, with the lowest scores given for information management systems and training centers, and the highest scores for emergency social services, information and communications technology, exercises and drills, and legislated accountability.

The diagnostic concludes that the EP&R system in North Macedonia meets basic requirements and hence is **fairly functional**. However, it also finds clear room for improvements. A major challenge in the system is the existence of multiple EP&R actors with overlapping competences and unclear responsibilities. To become more coherent and efficient, the system should move away from an ad hoc, reactive approach and work in an organized, consistent, and integrated way, building on a long-term strategic vision.

The diagnostic has identified **several gaps in structures, frameworks, and capacities** in North Macedonia's EP&R system. PPI recommends that before the system is further specialized to address specific hazards, investment should focus on the fundamental EP&R components to ensure the country can respond to its main risks: floods and wildfires. At the same time, the risk environment also encompasses new challenges such as climate change, migration, pandemics, and increasing tourism. The system needs to recognize these challenges, and can do so in part by making further adjustments to equipment, capacity building, and technology. These changes would in turn help ensure that the system is prepared to tackle existing and new challenges in a professional and coherent manner while growing in a resilient, sustainable way. Multiple good practices have been identified in the country; now the task is to create a unified framework that allows these individual efforts to grow further and mutually strengthen each other.

The **investment plan** includes three investment scenarios for a total of US\$94,604,480, divided into short-term investments taking place over the first year (US\$12,181,000), medium-term investments taking place over one to three years (US\$41,346,480), and long-term investments taking place over more than three years (US\$41,060,000). The investment report (published separately) also provides three different scenarios depending on the size of the investment, namely US\$20 million, US\$60 million, and US\$100 million.

Introduction

The Ready2Respond (R2R) framework elaborates on the role of the World Bank in disaster risk reduction. While strengthening emergency preparedness and response (EP&R) is a sound investment on its own, it also supports the World Bank Group’s broader risk reduction efforts and its fundamental goal of eliminating poverty and promoting shared prosperity. According to a recent World Bank report, the impact of extreme natural disasters is equivalent to a US\$520 billion loss in annual global consumption, and forces some 26 million people into poverty each year (Hallegatte et al. 2017). A functional response reduces felt consequences and enables rapid recovery, reducing cumulative impacts to public safety and the economy. Thus ensuring capacity for emergency response protects World Bank Group investments across development sectors, as well as the development gains that have resulted from those investments. EP&R capacity must keep pace with development and demographics to ensure these gains are not lost as a consequence of disasters and emergencies. In essence, an EP&R system with sufficient capacity is the first line of defense for World Bank Group investments and country development.

This Report

This report includes the assessment of the EP&R capacities of North Macedonia based on the R2R diagnostic methodology, as designed by the World Bank and executed by PPI. Data from a desk review¹ and from key informant interviews conducted as part of an online field mission² generated findings on the five components of the diagnostic—legal and institutional frameworks, information, facilities, equipment, and personnel—which include 18 criteria, 72 indicators, and 360 attributes in total.

This report provides a summary of the EP&R capacities per component, as assessed by PPI in the first half of 2020; the full assessment report, structured in accordance with the R2R methodology, can be found in annex 1. The report also identifies and makes recommendations about key investments that the World Bank and other stakeholders can consider as they seek to strengthen EP&R capacities in the country. A more detailed investment report is published separately.

Country Risk Profile

North Macedonia is vulnerable to extreme temperatures, wildfires, storms, landslides, droughts, and floods. Climate change is expected to have a negative impact on the agricultural sector, which accounts for 10 percent of gross domestic product and 36 percent of employment. Temperatures are expected to rise in the next 40 years and cause a decline in production. Previous disasters in North Macedonia include the 1963 earthquake in the capital, Skopje; the 2015 floods in the Pelagonija region and Strumiča region (the latter the country’s main agricultural center); flash floods and landslides in Tetovo and neighboring villages (causing US\$21.5 million in damages); and the 2016 flash floods in the capital (United Nations Country Team 2016). The INFORM (2020) index indicates that the country’s population and infrastructure are not particularly vulnerable; however, its coping capacity is relatively low.

Methodology

The assessment uses the **R2R diagnostic methodology**, as designed by the World Bank. The methodology “improves national, sub-national and city resilience mechanisms and protects development gains through investments in emergency preparedness and response . . . systems” (GFDRR and GSURR 2017,5). “The encompassing City Resilience Program . . . and other World Bank resilience platforms” inform the methodology (GFDRR and GSURR 2017, 5).

¹ A list of the documents reviewed is included in annex 3.

² The online mission schedule is in annex 2.

The diagnostic is designed to be an **objective, data-driven** foundation to engage country counterparts in EP&R development projects. The methodology builds on the five core components of emergency preparedness and response shown in figure 1: legal and institutional frameworks, information, facilities, equipment, and personnel.

Each component is measured by a set of criteria that address an aspect of a functional EP&R system for a given country. In addition, 72 indicators related to 360 attributes have been developed to score each criterion.

Figure 1 Emergency Preparedness and Response System Core Components



Source: GFDRR and GSURR 2017.

Overall R2R Results

The R2R methodology's 360 attributes represent elements of the EP&R system that should be in place in a system considered fully mature. The maximum score that can be achieved is therefore 360. North Macedonia has an overall score of 165. This means that 195 attributes of the EP&R system are currently absent or were not in place at the time of the analysis. In order to support an overall understanding of the relative weakness or strength of elements in the EP&R system, the average scores for each of the five components and 18 criteria have been calculated and transposed to scales from 0 (absent) to 5 (fully in place.) These are listed in table 1 and represented graphically in figure 1.

Table 1 Average EP&R Component and Criterion Scores for North Macedonia

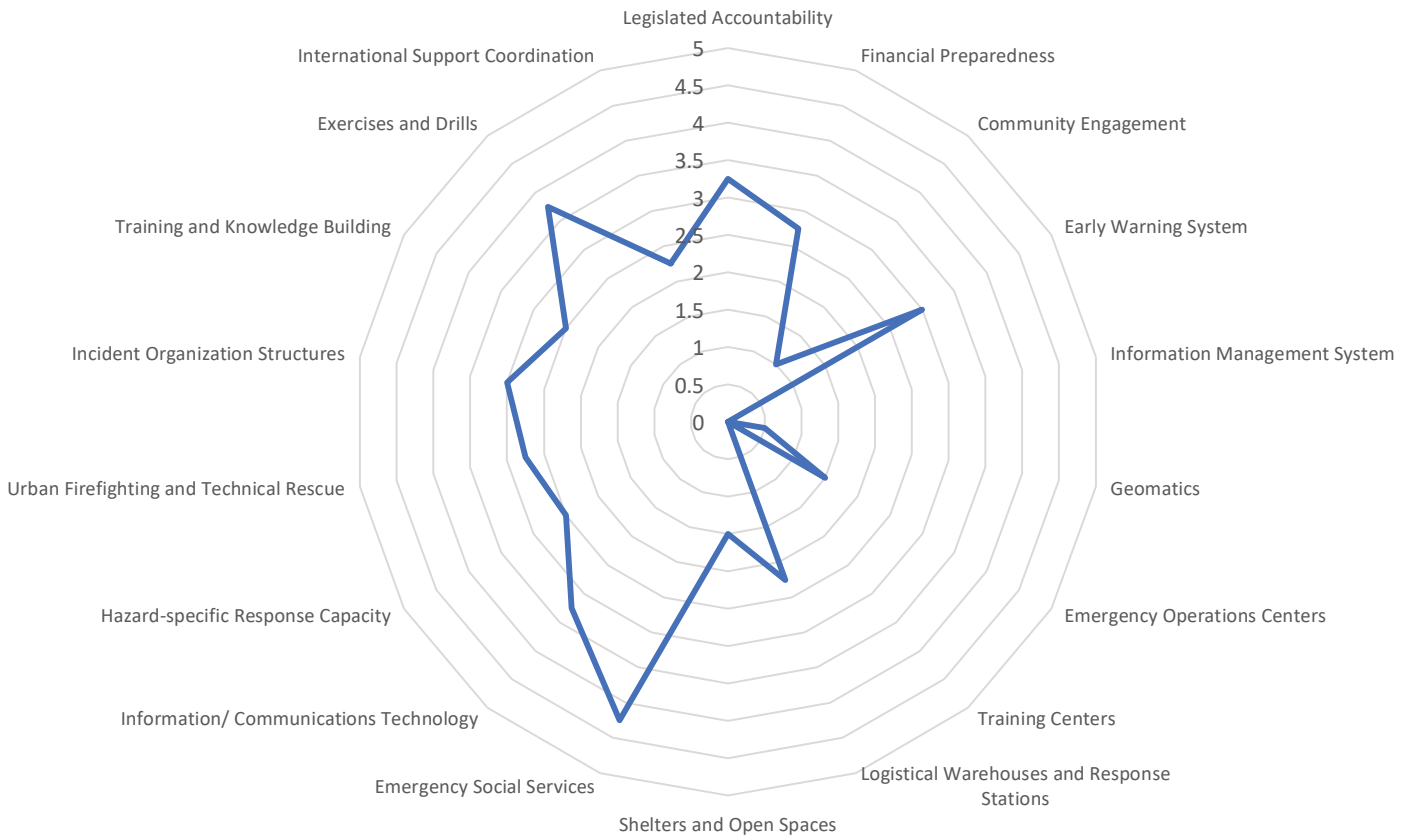
Component	Score (0 to 5)	Criteria	Score (0 to 5)
1 Legal and institutional accountability	3.00	1.1 Legislated accountability	3.25
		1.2 Financial preparedness	2.75
2 Information	1.13	2.1 Community engagement	1.00
		2.2 Early warning systems	3.00
		2.3 Information management systems	0
		2.4 Geomatics	0.50
3 Facilities	1.31	3.1 Emergency operations centers	1.50
		3.2 Training centers	0
		3.3 Logistics warehouses and response stations	2.25
		3.4 Shelters and open spaces	1.50
4 Equipment	3.19	4.1 Emergency social services	4.25
		4.2 Information and communications technology	3.25
		4.3 Hazard-specific response capacity	2.50
		4.4 Urban firefighting and technical rescue	2.75
1 Personnel	2.88	5.1 Incident organization structures	3.00
		5.2 Training and knowledge building	2.50
		5.3 Exercises and drills	3.75
		5.4 International support coordination	2.25

Source: R2R assessment findings.

Note. Scale from 0 (absent) to 5 (fully in place).

North Macedonia's EP&R system displays considerable differences across criteria and indicators, with the lowest scores given for information management systems and training centers, and the highest scores for emergency social services, information and communications technology, exercises and drills, and legislated accountability. The R2R diagnostic helped identify a number of concrete key investment opportunities that are expected to improve the EP&R system overall.

Figure 2 Diagnostic Scores for North Macedonia



Source: R2R assessment findings.
 Note: Scale is from 0 (absent) to 5 (fully in place).

It can be concluded that the EP&R system in North Macedonia meets the basic requirements that allow for a fairly functional response system. However, the scoring also shows clear room for improvement. A major challenge in the system is the existence of multiple EP&R actors with overlapping competences and insufficient clarity regarding their responsibilities. To become more coherent and efficient, the system should move away from an ad hoc, reactive approach and work in an organized, consistent, and integrated way, building on a long-term strategic vision.

The risk environment has changed over time and now encompasses new challenges such as climate change, migration, pandemics, and increasing tourism. The system needs to recognize all these challenges, and can do so in part by further adjusting equipment, capacity building, and technology. This change would in turn help ensure that the system is prepared to tackle existing and new challenges in a professional and coherent manner while growing in a resilient, sustainable way. Multiple good practices have been identified in the country; now it is time to create a unified framework that allows these individual efforts to grow further and mutually strengthen one another.

COMPONENT

1

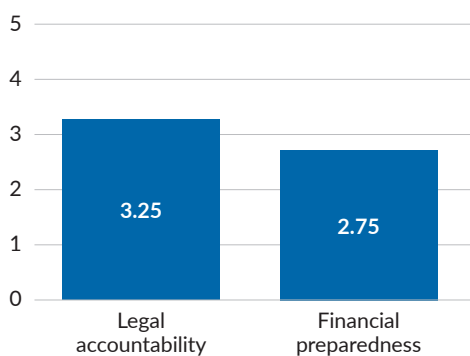
Legal and Institutional Accountability

Component Overview

Internal and external clarity about the role of various public and private agencies is critical during disaster and emergency response. Where ambiguity exists, inefficiency and jurisdictional overlap are likely, and human and economic losses may be greater than they would otherwise be.

Improving clarity about institutions' preparedness and response roles can be a potent means to improve resilience at various levels of government. Further, clarity about roles ensures that World Bank investments in capacity do not lead policy but instead that policy comes first, with financial and technical support provided at the right time to the right agency.

Figure 3 Scoring for Legal and Institutional Accountability



Source: R2R assessment findings.

Note: Scale is from 0 (absent) to 5 (fully in place).

Ideally these accountabilities are clearly enshrined in legislation with directive regulations. Where possible, coordinated policy instruments should identify the operational expectations for agencies assigned a preparedness and response mandate. However, even in the absence of complete organizational clarity, investment in preparedness and response can often improve a jurisdiction's ability to mitigate impacts and limit disaster- and emergency-related losses.

Component Conclusions

A basic legal framework regulating the EP&R system is in place in North Macedonia, including the Law on Protection and Rescue and the Law on Crisis Management, as well as other laws and bylaws. The main deficiency of the EP&R system as a whole is the duplications within this first component, which affect legal and institutional accountability and have a considerable bearing on the performance of the other four components as well. A so-called dualism, a term used in the European Commission study on host nation support (EC 2012), can be found at several levels of the system, and is seen in a duplication of efforts, capacities, and finances as well as a severe lack of coordination. To begin with, North Macedonia has different procedures for a "crisis situation" than for a "simple emergency situation"—but the difference between the two is not fully elaborated, and the respective regulations that define this divergence are not specified. Second, the country has two key responsible institutions in place, the Protection and Rescue Directorate (PRD) and the Crisis Management Center (CMC). These have overlapping responsibilities and competences in managing emergencies and disasters, while the position and role of a third main actor, the National Coordinator for Disaster Risk Reduction, has not been consolidated yet. Third, different institutions use different terminology. Finally, roles of and relations between the various actors within the system, including ministries, civil society, municipalities, and the private sector, are vague and leave much room for interpretation of existing legal frameworks.

The R2R diagnostic concludes that North Macedonia lacks a unitary, harmonized, and comprehensive functional legal framework that defines the roles and competencies of the institutions responsible for managing emergencies and disasters. This challenge is not newly identified in this R2R diagnostic; previous assessments have reached the same conclusion. However, no major changes seeking to rectify this fundamental systemic issue have been made in the past few years. Unless this issue is tackled, the EP&R system in North Macedonia cannot profit fully from investments made in other areas.

In accordance with the legislation, agencies and private sector actors have specific operational response plans. Yet the R2R assessment suggests that responsibility for the safety of critical infrastructure rests mainly with the (private) owners of critical infrastructure facilities. In the process of establishing the Next Generation Incident Command System (NICS), data collection has begun on important public infrastructure, but improvements are needed to streamline the relevant legislation and incorporate the data into early warning systems.

In terms of financial preparedness, legislation foresees specific budgets for emergency-related aspects. In reality, financial preparedness is insufficient and not consistent at central and municipal levels across the country. An appropriate budget for EP&R is lacking, and the bulk of the existing budget is taken up by personnel, with few budget lines for maintenance. International funding streams and donations—encompassing both financial and in-kind donations and credits—are an important part of the country's EP&R finances, leading to competition for (largely uncoordinated) donations. A key problem is thus inadequate financial and functional model sustainability and the absence of clear definitions for application of principles. This problem is also evident in the existing central procurement system, in which new purchases are decided upon at central level and at fixed times. The exception is during crisis situations, when EP&R actors need more flexibility to make swift purchases and better meet their requirements. Improvements have been made to financial risk transfer programs and have been communicated to the public but require further attention.

1 Key Investment Opportunities

RECOMMENDATION 1

Adopt a functional emergency model and establish an appropriate general legal framework

A first step for improving the EP&R system in North Macedonia would be to develop a functional model for emergency management that brings together the current two systems—one for protection and rescue and one for crisis management. Top-level decision-making and political will are required for making the necessary changes. Admittedly, this recommendation probably falls outside the scope of the R2R investments contemplated by the World Bank, but unless structural changes are made in the harmonization of the system to overcome the parallel systems in place, investments in other components are less likely to be effective and sustainable. Efforts to create a more unified system should build on elements already in place and on previous efforts at the national level that will be supported by relevant international actors, including the World Bank, European Union, and United Nations Development Programme (UNDP), to ensure that the EP&R system is in line with international standards and crisis management approach.

RECOMMENDATION 2

Develop additional key guidance documents

Although the basic EP&R legal framework is in place, there is room to enhance the comprehensiveness and the effectiveness of the laws and bylaws. Building on the previous recommendation, a national strategy for emergency and management should be developed in addition to a new methodology for assessment and planning and a new national (action) plan for prevention, preparedness, and response. Legislation on climate change and its consequences could be strengthened, specifically as regards disaster response and preparedness, exit planning, critical infrastructure assurance, financial decision-making, and financial risk transfer programs.

RECOMMENDATION 3

Build an autonomous financial model of sustainability

Financial preparedness for EP&R needs to be improved to avoid ad hoc decision-making and ensure consistency in allocations. The R2R diagnostic recommends developing a sustainable financial model for local and national EP&R bodies through investment models and inspection roles. This model should have a development dimension to adapt to the needs of the EP&R actors and should consider anticipated future risks, including risks resulting from changes in climate or further pandemics. Finally, the model should regulate the division of resources across EP&R actors and provide guidance regarding how international donations could complement existing resources in a coordinated manner.

RECOMMENDATION 4

Review the appropriateness of the central procurement system

The R2R diagnostic identified challenges related to the central procurement system and the degree to which it allows EP&R actors the necessary flexibility and decision-making power to purchase equipment. A review of this model is needed to assess how it could be adapted in the future to become more inclusive for operational actors and allow for more flexibility in procurement.

COMPONENT

2

Information

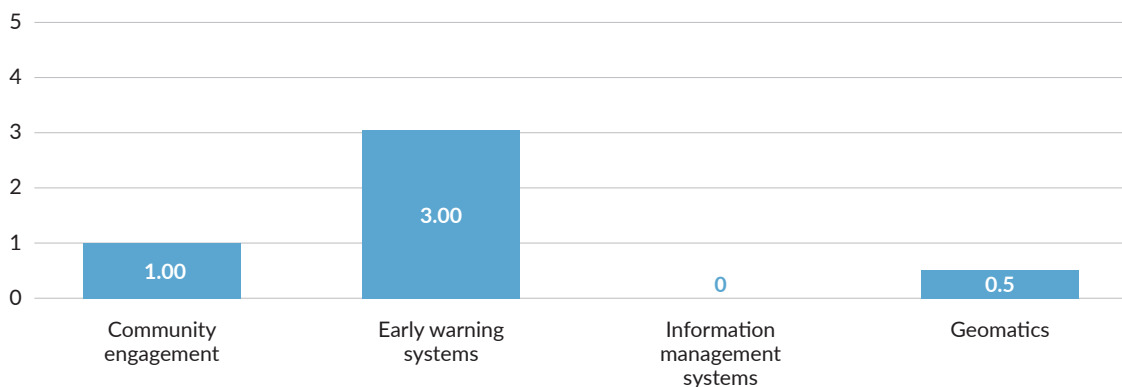
Component Overview

The collection, analysis, and swift dissemination of information enables better decision-making in advance of emergencies, during response operations, and through the transition to early recovery. Impacts from emergencies are felt locally, and so community engagement is vital to a well-developed state of preparedness.

The information used for preparedness and response includes the information generated from early warning systems; this information provides local residents—and the response teams that support them—with advance notice of emerging hazardous events. Other relevant emergency information comes from responding agencies and social media; coordination of this information ensures horizontal and vertical situational awareness that enables efficient, coordinated, and prioritized response operations.

Finally, the development of hazard and vulnerability maps along with other georeferenced emergency information, captured digitally and shared electronically, provides decision-makers with a key resource for planning across time scales to reduce risk. However, for high-quality information to have an impact, it must be utilized both by the affected community and by well-trained, committed personnel that have the appropriate equipment to respond safely and effectively to the given event.

Figure 4 Scoring for Information



Source: R2R assessment findings.

Note: Scale is from 0 (absent) to 5 (fully in place).

Component Conclusions

Legal provisions for the engagement of volunteers in the EP&R system exist, but central and local institutions have not been successful in encouraging volunteerism. The PRD was established in 2004 as a central (operational) institution for protection and rescue—activities that involve volunteers—and in 2005 firefighting units were transitioned from the Ministry of Interior to the municipalities and the City of Skopje. But this change resulted in a merely symbolic number of volunteer firefighting units and the absence of a systematic approach toward volunteering from the local and central government. Investments and donations for volunteer associations are received through cooperation with various foreign foundations, programs, and initiatives, which results in an ad hoc budgeting landscape and

an geographically unbalanced distribution of volunteer associations on the ground. At the same time, civil society does maintain some good practices in terms of volunteering and popular education. A few notable examples are the Macedonian Red Cross, LEGIS, and the Voluntary Firefighter Association. There are grounds for learning more from these role models and for building a more robust system of community engagement to complement existing EP&R capacities, including for early warning, risk knowledge, training, and education.

A basic early warning system is in place in the country, but its capacities, comprehensiveness, and ability to share information should be strengthened. For example, the Hydrometeorological Services (HMS) and the Ministry of Environment and Physical Planning regularly monitor weather events, river systems, air pollutants, and potential industrial risks. A Macedonian Forest Fire Information System (MKFISS), developed in 2013 with support from the Japan International Cooperation Agency (JICA), was deemed to be effective, yet remains underused. Data management and analysis is a key problem, and there is little capacity to translate forecasts into meaningful public guidance. Procedures for alerting the public exist, but the consistency and complementarity of early warning messages are constrained by the confusion of responsibilities between CMC and PRD. Finally, although existing plans show sirens as the main warning method, the sirens are not operable. Efforts are under way to develop a system of SMS messaging that will improve early warning through radio and TV channels.

Information management systems are recognized as insufficient, and as a result the Next Generation Incident Command System is being established as a common Disaster Management Information System (DMIS). EP&R actors have high expectations of the NICS, but it is too soon to know actual results. The outcomes of the NICS will depend on the willingness and capacity of all EP&R actors to integrate the system in their daily working practices, share existing data, and update existing information-sharing procedures. The NICS aims to integrate all existing data from various organizations, but there are some impediments: risk assessments (especially at municipal and local level) are currently outdated and require urgent attention; institutions have a patchwork of information management practices and formats (digital and traditional); and georeferenced data are incomplete.

The capacity for a geographic information system (GIS) depends on the further development of the NICS. At this moment, this indicator scores zero due to the absence of available GIS capacities for emergency management activities. Some georeferenced data exist, but they are not widely accessible, not integrated into one system, or not electronic. A general problem is that leadership in the EP&R system—which could drive technology and innovation and promote a consistent approach to disaster risk management capacity building—is lacking.

2 Key Investment Opportunities

RECOMMENDATION 1

Develop a systematic community engagement approach, including sustainable and realistic volunteering programs

There is untapped potential to make volunteering a systematic and permanent contribution to the EP&R system. The COVID-19 crisis has once again demonstrated the benefits of having trained and pre-identified volunteers available. The R2R diagnostic therefore recommends supporting programs in which potential volunteers will receive support and privileges from local and central authorities (certification, health privileges, social and pension insurance, building permits, etc.) based on the principle of twining partnerships and drawing on successful models implemented in Central and Eastern Europe.

RECOMMENDATION 2

Invest in a functional alerting system

An alerting system should consist of several channels and methods. Although sirens are considered outdated in many countries, they continue to be a key method of informing the population about approaching disasters or events and can complement other alerting channels. At the moment, the sirens in North Macedonia are old, not maintained, and not functioning. A key investment opportunity could be to update these facilities to contribute to improving the country's early warning system. At the same time, urgent investments are needed to consolidate the system for distributing SMS messages to all mobile phones in a given location. Backup systems for network providers will also be needed to avoid dependency on one system only. There is a need to reflect further on how to use the power and opportunities provided by social media and commercially present solutions (GIS, SMS, open data collection and operating systems, etc.) to provide citizens with more comprehensive access to announcements and directions before, during, and after emergencies and disasters.

RECOMMENDATION 3

Invest in early warning capacities of hydromet

HMS is the most prominent actor monitoring weather events, river systems, air pollutants, and potential industrial risks. However, the R2R diagnostic found that its capacities were insufficient to monitor all these risks in the country. In the past, the World Health Organization (WHO) has called for investments in 24/7 monitoring of epidemics, and the Food and Agriculture Organization of the United Nations (FAO) has called for early warning systems for the agricultural sector. UNDP is already strengthening the early warning capacities of HMS in selected locations, but further investments in equipment, monitoring systems, and personnel are needed. A better connection with the existing MKFISS system, which is considered to hold potential but is not accessible to all actors, is also needed. The R2R diagnostic advises undertaking a detailed needs assessment of hydromet and making investments accordingly.

RECOMMENDATION 4

Consolidate the potential of the NICS

The development of the NICS is a good opportunity to advance the country's information management system. However, the implementation and financial sustainability of the system are not yet guaranteed. The NICS should be available to all end users and adapted to their local context (technical culture, knowledge, and subculture) to avoid a top-down approach. Investments will be needed to ensure that all EP&R actors can utilize the system—more specifically, to adapt its procedures, purchase appropriate equipment and software, and train staff in how to use the system. Unless all actors wish to use the system, and have the necessary capacities and capabilities to do so, the NICS cannot reach its full potential and meet expectations for integration of information. Finally, the NICS must also be compatible with existing systems, such as MKFISS or CECIS—the Common Emergency Communication and Information System of the European Union (EU)—to which the PRD is going to connect.

COMPONENT

3

Facilities

Component Overview

Coordination of effort for EP&R activities requires a structural presence, be it for command and control, movement of emergency aid, or the staging of response teams and their equipment. These physical facilities act as a core element in establishing a culture of preparedness, ensuring a dependable common operating picture and resilient services when most other critical infrastructure and government services are disrupted. This component ensures that there is a nexus for information, personnel, and equipment as the EP&R system matures through focused investment.

Figure 5 Scoring for Facilities



Source: R2R assessment findings.

Note: Scale is from 0 (absent) to 5 (fully in place).

Component Conclusions

The designation and use of emergency operations centers (EOCs) depends on the type of crisis and is determined by the Steering Group within the lead government agency for the given crisis. For example, for COVID-19, the coordinating committee is located within the Ministry of Health; for migration, it is accepted that the police forces are in charge. The absence of a permanent physical EOC poses a problem for EP&R in North Macedonia. The 2005 Law on Crisis Management calls for the establishment of such a center, one that functions on a 24/7 basis and that includes the 112 emergency call services. The responsibilities for the emergency number have indeed been assumed by the CMC, but no such center has been created despite the mandate under the law. In practice, operational coordination in crisis situations is facilitated by the small number of actors in the country, but clear lines of authority and coordination mechanisms are not stable and must be established at the onset of each new crisis. This suggests a disconnect between operational and political needs and decisions.

In line with the absence of a unified permanent emergency operations center, North Macedonia has no overall EP&R training center that carries out integrated and multi-agency trainings on a permanent basis. This reality contrasts with the legal provisions under the Law on Crisis Management, which allocates the responsibility for training to the CMC. As of the time of this the diagnostic, there are plans to build a new training center with the financial support of the United States. EP&R actors have their own training facilities, which offer individual trainings (although too

infrequently) and occasionally multi-agency trainings opportunities. However, in general, this criterion reflects the broader challenges faced by the EP&R system in North Macedonia—namely, the lack of consistency and long-term stability and the absence of a well-funded, systematic approach to training and capacity building.

Responsibility for logistics, storage, and distribution rests with the PRD, which has basic capacities, guidelines, and procedures in place. Response stations are situated in municipalities and have the basic capacity for adequate emergency response. Yet the performance of this indicator is limited for several reasons: (1) insufficient transportation capacities, (2) old or missing equipment, (3) need for reconstruction and repair of facilities, (4) absence of national storage and warehouse facilities, and (5) insufficient criteria for specialized hazard response stations.

The indicator on shelter and open spaces has profited from lessons learned during the recent migration crisis and the 2016 floods. The capacities of EP&R actors to provide shelter benefit from the engagement of the Macedonian Red Cross with responsible ministries. Protection and rescue plans assign certain locations for tents and designate open spaces for mobile command posts, stand-by areas, landing zones, and areas for vehicles. Legal acts exist to regulate the use of private land for that purpose. However, in practice, temporary shelter is mostly organized in a reactive manner. Funding for (long-term) shelters for migrants and related services depends on international donations. Updated risk assessments, including at local level, would help in better defining evacuation routes and open spaces.

3 Key Investment Opportunities

RECOMMENDATION 1

Invest in a permanent, common, and interagency-based eoc that includes mobile posts.

Emergency operations centers are currently decentralized, and the EP&R system would profit from permanent EOC facilities that bring stakeholders together under clear lines of authority and stable coordination mechanisms. This key investment opportunity would allow further implementation of the existing Law on Crisis Management and full integration of the 112 emergency number into the system, with linkages to early warning and information management systems. A precondition for the establishment of such a center is the establishment of a functional emergency model, as recommended under Component 1.

RECOMMENDATION 2

Contribute to the establishment of the training center

The support of the United States for construction of a new training center would help enhance North Macedonia's capacities. Discussions with CMC and the donor could take place to ensure that this establishment fully meets the needs of the system and occurs in parallel with other ongoing initiatives from international actors, as well as with other possible investments resulting from this R2R diagnostic. Establishment of an EOC should be connected to institutional or interagency training centers to ensure that they produce expertise and research findings and are working to follow Union Civil Protection Mechanism (UCPM) training strategies and capacity-building programs. There is a need for consistent human resources policy regarding selection criteria for training personnel. Investments in additional trainings—including urban search and rescue (USAR)—are recommended, along with coordination and host nation support, possibly linked with exercises.

RECOMMENDATION 3

Invest in fully functioning warehousing facilities and response stations

The R2R diagnostic found that warehousing facilities and response stations are not fully functional. For example, the long-term storage of sensitive goods was identified as problematic. Important equipment (forklifts, appropriate fire protection and alarm systems) is missing. Transportation was frequently mentioned as a problematic factor. Investments in these facilities to ensure their standardization, full functionality, and reliability would be a concrete and important contribution to the EP&R system.

RECOMMENDATION 4

Invest in the update of risk assessments

Risk assessments are outdated, especially at local level, and a process is under way to update these important documents. Investments should be made to expedite this process for the entire country. On that basis, signage for shelters and open spaces could be better defined by local stakeholders, and further investments could be made to ensure that clear signs are posted and maintained in mapped areas.

RECOMMENDATION 5

Invest in building hazmat capacities of response stations

According to the diagnostic's findings, hazmat capacities are an undeveloped field for public sector response agencies. Investments are recommended to improve the hazmat capacities of response stations so that they are less dependent on the private sector for this type of response. Concrete investments would be needed for training and for the employment of adequate personnel for hazard-specific response. Finally, self-sufficient provisions should be tested and forecasts made for specific budgets.

COMPONENT

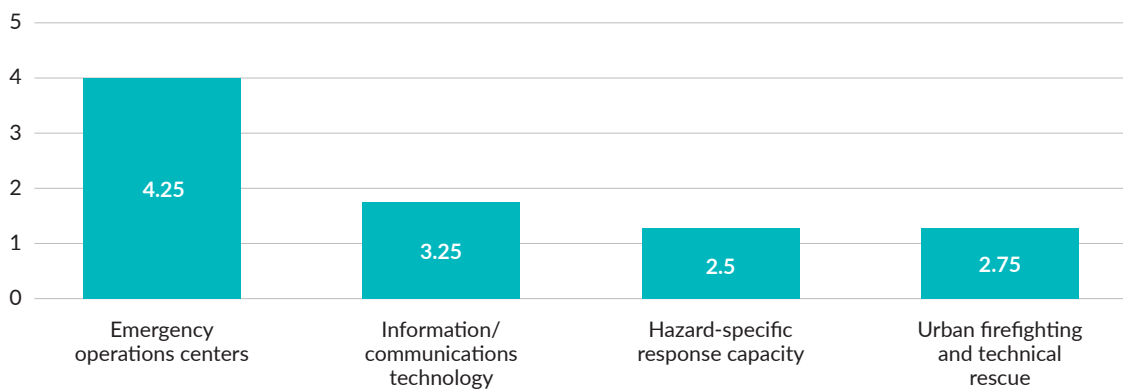
4

Equipment

Component Overview

The appropriate acquisition, use, and maintenance of preparedness and response equipment ensures timely information sharing and safe, effective rescue operations. It allows for effective communication in even the harshest conditions. Investments in equipment help governments overcome the capital requirements to ensure access to lifesaving technologies and resources. Combined with clear implementation guidance, established parts and service supply chains, and program budgets for maintenance and upgrades, these elements ensure a government's core preparedness and response agencies have the tools to safely and effectively deliver their services.

Figure 6 Scoring for Equipment



Source: R2R assessment findings.

Note: Scale is from 0 (absent) to 5 (fully in place).

Component Conclusions

The R2R diagnostic scores on equipment were fairly good: basic equipment is available and functioning. At the same time, the emergency response capacity could profit from newer and updated equipment, in particular vehicles, and from some additional equipment to fill existing gaps in the available toolbox. The previously mentioned challenges to coordination between actors and interoperability—a result of various donations from various sources in the past—all apply here as well. Standardization of equipment is critical.

Scores for emergency social services benefited from the ongoing response to the COVID-19 crisis, which is serving as a testing ground for the available capacities. This criterion scored rather high compared to other criteria. Previous assessments, including those mentioned in the WHO (2019) report, have also given high scores to performance in this area. Use of additional and newer materials in line with European standards, as well as improved hospitalization capacities, were noted. Important lessons are being learned during the COVID-19 crisis, and as a result, capacities for disease prevention have improved significantly, including services for washing and hygiene, and there is greater recognition of the need to increase public awareness through the dissemination of materials. The management of mortality during emergencies could be improved with more transportation capacity and appropriate or designed

vehicles for body recovery and transport, but concrete investments for this criterion are not advised within the R2R diagnostic. As the COVID-19 crisis continues, specific support projects, including from the European Union, are taking place with the goal of strengthening emergency social services capacities. This R2R diagnostic thus comes too early to provide a full picture of these recently improved capacities.

In terms of information and communications technology, the TETRA radio system is the most used, especially at the national level. The system is well developed and relies on solid infrastructure. However, a shortage in funding has meant that not all relevant actors are connected to this system. Furthermore, response actors are only in part equipped with modern and secure radio communication equipment, and there is room to improve the digitalization, the satellite communication system, and the coverage of the broadband network. Strong backup systems to allow rapid recovery of public and private sector communication are not in place.

North Macedonia has a strong system in place for response to forest fires. These capabilities are being further strengthened over time, through purchase of additional 4x4 vehicles and protection equipment as well as other means. Outstanding needs include special pumps with 300-liter reservoirs and fixed water supply pipelines. Local firefighters have some capabilities to carry out rescue during floods and water-based emergencies, but search and rescue activities and the deployment of divers depend on the armed forces and the PRD. With the recent increase in tourism in the environs of Lake Ohrid, existing rescue capacities for water-based emergencies should be strengthened to reduce response time. Although demand for mountain rescue is also clearly increasing, the Mountain Rescue Service has to rely on external aid for air support when performing medical evacuations.

The EU peer review report (EU Civil Protection 2018) states that the fire and rescue services seem to be underfunded, undertrained, and underequipped. The recent decentralization has created variations in budget, and hence differences in capacities at the local level. The main needs are for procurement of new and appropriate vehicles, for example in the City of Skopje. Budgets and education resources for entrapment rescue and for medical and lifesaving resources are not sufficient. Missing vehicles and equipment for USAR and for functional confined-space rescue limit these capabilities.

4 Key Investment Opportunities

RECOMMENDATION 1

Invest in a countrywide rollout of the TETRA radio system

Although the TETRA radio system was found to rely on good infrastructure, financial shortages have kept some relevant actors from being connected to the system and have hampered communication. Investments in a countrywide, unified radio system are expected to enhance interoperability and cooperation.

RECOMMENDATION 2

Invest in digitalization of communications technology

Beyond utilization of a common radio system, there is room for improving the digitalization of the communications technology. Connection to the CECIS of the European Commission could be a trigger to equip actors with modern and secure communication equipment. A concrete opportunity would be to support the plans of the Macedonian Red Cross to implement a satellite communication system (as backup during disasters) and a mobile coordination system. A project proposal has been drafted but is waiting to be funded.

RECOMMENDATION 3

Invest in appropriate pumps for 4x4 vehicles for fighting forest fires

The capacities of the Public Enterprise on Macedonian Forests were said to be limited by the absence of appropriate pumps for its 4x4 vehicles. Although additional vehicles were recently purchased, the absence of necessary pumps on some vehicles clearly affects the capacity to fight wildland fires. Investments in these pumps is a straightforward tipping point investment to complement capacities already in place.

RECOMMENDATION 4

Invest in additional capacity for urban firefighters

The R2R diagnostic identified vehicles as a main need for a variety of actors in North Macedonia. The City of Skopje expressed interest in purchasing additional small pickups to maneuver within the smaller streets of the city or to upgrade its existing vehicle fleet. Further equipment and vehicles are needed for functional rope rescue and functional confined-space rescue capacities. In addition, investments are recommended for USAR equipment and specific hazmat equipment.

RECOMMENDATION 5

Establish a response station at the shores of Lake Ohrid

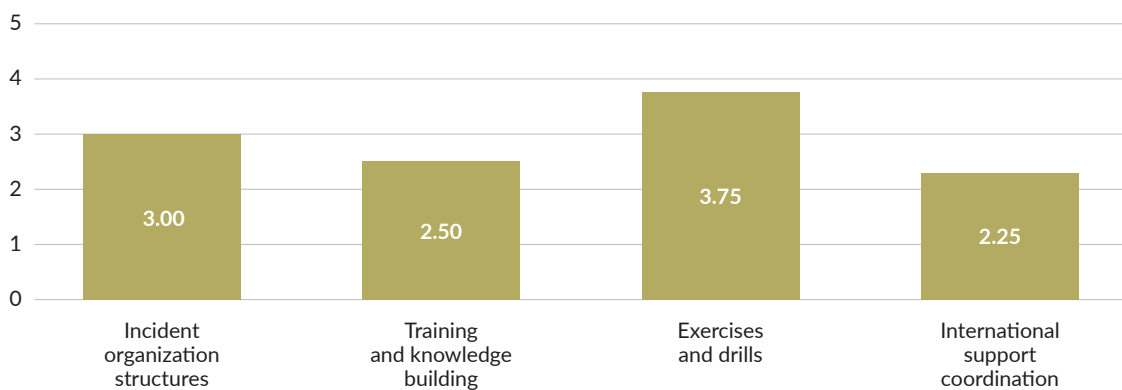
The response time for emergencies at Lake Ohrid, where tourism has recently increased, is heavily impacted by the distance between the response station and the lake. The establishment of a response station in the vicinity of the lake is expected to improve the response capacities for water-based emergencies. Such a station may need to be legally cleared with the relevant property owners and take into account any environmental considerations.

COMPONENT **5** Personnel

Component Overview

A highly skilled and experienced workforce is the most valuable resource in any disaster preparedness and response system. To achieve this, there must be a culture of preparedness in which both the public and political entities trust the agencies tasked with ensuring public safety and minimizing economic disruptions. Developing such a culture requires intensive and extensive training of those involved in EP&R so that they acquire the necessary knowledge, skills, and practical experience. Training of personnel must take advantage of the best available plans, information, facilities, and equipment to ensure an interoperable systems approach is broadly understood. It must also enable deep capability in focused areas of expertise to ensure that personnel development spreads upward, from the individual to the team, and from the team to the agency.

Figure 7 Scoring for Personnel



Source: R2R assessment findings.

Note: Scale is from 0 (absent) to 5 (fully in place).

Component Conclusions

The ongoing introduction of the Next Generation Incident Command System has generated high expectations for its ability to improve North Macedonia's emergency response management system and incident organization structure. So far, response agencies have been mainly working according to their own systems, in the absence of central policy direction. The NICS is expected to tackle a number of existing challenges of the EP&R system, including coordination, unified command structure, and information sharing. The fact that NICS is also being implemented in neighboring countries like Bosnia and Herzegovina, Croatia, and Montenegro makes the system even more appropriate. Although the system looks promising, it will be important to ensure that the NICS is (financially) sustainable, that it adopts a comprehensive approach, and that all stakeholders are trained in use of the new system.

Various EP&R actors have their own training initiatives and programs, possibly supported by international donors. In line with recommended changes at the legislative and operational level, trainings are an opportunity to harmonize the system and foster a shared understanding of how the EP&R system works and what support might be available for

it. Therefore, a more systematic training approach is advised to enhance multi-agency, multi-level training programs. This would be supported by the establishment of a national training center but would also need an increase in the availability of certified trainers, improvements in formal assessment programs, and integration of existing training standards. Knowledge management, professionalization of this sector, and a methodologically coherent exchange of experiences are the basis for such an integrated and systematic training approach.

These findings equally apply to exercises and drills. Good examples can be found in the form of past exercises and drills (at both large and small scales), which included the private sector and civil society. The R2R diagnostic advises consolidating these individual activities into a long-term vision on emergency preparedness through testing response plans and practicing cooperation. A clear example of the further need for collaboration and coordination of exercises is the absence of joint trainings by the Mountain Rescue Service and the Ministry of Interior to practice complicated rescue maneuvers, such as airlift of injured persons from the mountains. Investments in such concrete interagency exercises would directly benefit the response capabilities of all relevant actors. To enhance the overall readiness of EP&R capacities, instruments for evaluating and testing the plans must be incorporated in the exercises, drills, and scenarios. The frequency and complexity of exercises should be augmented accordingly.

Finally, international support coordination is based on bilateral and international cooperation agreements—even though the 2005 Law on Crisis Management regulates the participation of international organizations in the prevention, management, and early warning of an eventual crisis. Confusion regarding the responsibilities at the national level has operational consequences and would have to be clarified via regulation. Both the CMC and PRD have responsibilities for coordinating with international organizations, and a clear focal point for international actors offering support is missing. Again, in practice, solutions are found on an ad hoc basis; but decision-makers and personnel dealing with international teams would profit from additional trainings on the workings of the international EP&R system. The application of international standards and guidelines to national contexts deserves further reflection and follow-up.

5 Key Investment Opportunities

RECOMMENDATION 1

Assist the country in developing a systematic interagency training program for EP&R responders

The country needs to develop an interagency training program. One investment opportunity could be to support an in-depth training needs assessment and construct training activities based on the findings, including activities that are in line with existing UN and EU (UCPM) standards. Such a training program should take into account the existing capacities within the country (including the academic sector) and outline the specific external support needed. Training programs should be developed at various levels (basic, special, train the trainers, theoretical and practical, etc.) and should be applicable in national, regional, and international environments, in line with existing personnel development, certification, and promotion practices. Programs could include any of the following curricula:

- Firefighting units training (professional and voluntary)
- Hazmat training
- Ministry of Interior, Ministry of Defense, PRD human demining/unexploded ordnance training
- Basic and special training of protection and rescue/USAR
- Incident command/blue light system, training on NICS
- Basic protection and rescue training for young population
- Exchange and sharing of experiences between experts
- Trainings on international EP&R system
- Host nation support and international assistance

RECOMMENDATION 1

Conduct a train-the-trainers program for key personnel

North Macedonia needs more certified trainers to contribute to increased training activities for EP&R actors. A train-the-trainers program is urgently needed to prepare individuals with emergency experience to conduct training programs for national, regional, and local actors. Such a program should include carefully identified individuals from a variety of institutions to ensure a consistent teaching approach. Bringing them together would also allow them to exchange experiences and to learn from one another.

RECOMMENDATION 1

Record lessons learned from the ongoing COVID-19 crisis

The ongoing COVID-19 crisis has significantly tested the EP&R capacities in the country. This real-time situation provides an opportunity to record good practices, identify challenges, and learn for future events. In general, knowledge management was identified as a problem in the existing system. Recording and analyzing current events could serve as a first attempt to foster a better knowledge management system, with results informing future training and exercises.

RECOMMENDATION 1

Conduct a joint-training session for police helicopter pilots and the mountain rescue

A practical and concrete challenge for medical evacuations from the mountains is that the police helicopter pilots supporting the Mountain Rescue Service in its operations are not trained in complicated airlift maneuvers. This problem can be easily addressed by funding regular training activities for these two groups to practice such operations and to learn about each other's ways of working. This training is expected to speed up the response time for mountain rescue. Even though a public-private partnership is also being planned to offer helicopter support for mountain rescue outside of the police helicopters, this training event would be useful in the short term.

RECOMMENDATION 1

Hold an exercise on international support

In general, the frequency and regularity of multi-agency exercises should be increased. International support coordination, which is complicated by an overlap in responsibilities between CMC and PRD, poses a particular challenge. One investment opportunity could be to organize an exercise simulating the receipt of international support to test existing response plans and identify gaps in the application of international standards and agreements. Outcomes of such an exercise could form the basis for alignment and harmonization of future working agreements and responsibilities for international support, in line with changes recommended under Component 1 on legislative and institutional frameworks.

Annex 1

Full Diagnostic Report

Component 1 Legal and Institutional Accountability

Criterion 1.1: Legislated Accountability

Indicator 1.1.1: Emergency Management Legislation

Rationale given by the R2R diagnostic: For an emergency preparedness and response system to function well at any government scale, and especially across scales, emergency management legislation and related policy instruments must exist. These instruments must clearly assign accountabilities to specific government departments and ministries to ensure public safety service delivery and resilience.

Emergency management legislation is in place in the jurisdiction of North Macedonia, namely the following laws:

- 2003 National Security and Defense Conception.
- 2004 Law on Protection and Rescue (Republic of North Macedonia 2004b). The law introduced the system for protection and rescue of people and material goods against natural and technological disasters.
- 2004 Law on Fire Prevention (Republic of North Macedonia 2004a).
- 2004 Law on the Territorial Organization of Local Self-Government in the Republic of Macedonia (Republic of North Macedonia 2004c).
- 2005 Law on Crisis Management (Republic of North Macedonia 2005). The law regulates the crisis management system of North Macedonia.
- 2008 National Security Strategy of the Republic of Macedonia. This is a classified document.
- Forest Law (various).
- Third National Communication on Climate Change (MOEPP 2014). The Fourth National Communication on Climate Change is still in progress.
- National Platform for Disaster Risk Reduction, fourth edition (2019) (restricted).

Additional laws and regulations were adopted in response to the COVID-19 crisis. However, this latest crisis served to expose, once more, a gap in the legal framework: there is no law regulating the roles and competencies of the institutions involved in an emergency like this one (not related to a natural disaster, and entailing quarantine). The Law on Crisis Management defines the term “crisis situation,” and specifies that the government must formally declare a crisis situation to activate the crisis management system. However, natural or other disasters can also be considered “simple” emergency situations (EC 2012). Interviews noted that a special law on climate change does not currently exist. The COVID-19 crisis, which began shortly after the dissolution of Parliament to allow for early parliamentary

Figure 8 EP&R System in North Macedonia



elections, has highlighted uncertainties in the relationship between the president, the government, and the crisis management system.

The Law on Protection and Rescue elaborates on the responsibilities of central agencies, in particular the Crisis Management Center (CMC) and the Protection and Rescue Directorate (PRD). The CMC maintains the continual preparedness level of the state, including during noncrisis situations, and provides risk assessments and coordination in times of crisis as well as backup when local capacities are depleted. The PRD is tasked with developing plans for protection and rescue and manages the protection and rescue forces, including rapid response teams. The PRD and CMC are two separate legal entities. A third actor with coordination responsibilities is the National Coordinator for Disaster Risk Reduction, attached to the Prime Minister's Office. Other relevant actors in developing plans and risk assessments are the municipalities and the City of Skopje. Bylaws in action plans explain requirements for the public and private sector. Although agencies with emergency response duties are required to have plans on their level of preparedness, reporting is not always strong.

Indicator 1.1.2: Appropriate Delegations of Authority

Rationale given by the R2R diagnostic: During disasters and emergencies, decisions must be made more quickly and often by those directly involved in managing or setting priorities for response operations. Clarity about decision-making processes, and about the ability of officials to make decisions that would typically be made at a higher government level, is vital to timely and effective disaster and emergency response.

The de facto interpretation of legislation by the two key agencies differs, and competences are not sufficiently defined at central and local levels. The result is an overlap in responsibilities and confusion throughout the chain of command on the ground, pointing to a lack of coordination between operational incident commanders. Both the CMC and PRD are decentralized into local branches (35 and 30 branches, respectively), resulting in parallel systems within the country at central and local levels, and in inefficient procedures on the ground. Previous assessments have identified this issue, but in the absence of a unified and coordinated approach, the small steps taken to address it have not been effective. EP&R actors interviewed admitted that it was not always clear to them whether the CMC or the PRD was in charge, including during crisis situations such as the migration crisis. The lack of a systematic approach was a recurring theme in the interviews, which cited organic rather than systematic decision-making and shifting lead organizations depending on interests and capacities. Depending on the type of crisis or the sector affected, a different agency leads, such as the Ministry of Health for the COVID-19 crisis or the police for the migration crisis. The Assessment Group oversees assessment of the situation, risks and dangers for national security based on a preset methodology, and advises the Steering Group, which declares a crisis situation when appropriate.

Indicator 1.1.3: Agency-Specific Operational Response Plans

Rationale given by the R2R diagnostic: An operational response plan ensures that government departments with specific accountabilities for ensuring public safety will be able to fulfill those roles despite organizational challenges such as personnel turnover. It also ensures limited overlap with other government departments and, through testing the plan, enables others to become familiar with how each department will fulfill its obligations.

The assessment found that some agencies, such as the Ministry of Health, have their own response and preparedness plans. The Ministry of Environment and Physical Planning is required to have an annual operational plan for forest fire protection according to the relevant rulebook. These annual plans include the assignment of specific roles and responsibilities to agencies, operational guidance, and a 24/7 communication plan. Some shortcomings were identified, however, when plans were tested through drills and exercises, and during efforts to coordinate individual plans to enhance coordination during disasters. One weak point is the exit of a crisis; in the case of the migration crisis, for example, there was a lack of (finalization/adoption of) contingency planning upon return to routine.

Indicator 1.1.4: Critical Infrastructure Assurance Program

Rationale given by the R2R diagnostic: Critical infrastructure forms the structural backbone of any jurisdiction. It is the core physical presence of any government, without which essential government and private services could not be provided. Typically, a significant percentage of critical infrastructure is privately owned and operated. Whether public or private, this infrastructure is of vital economic and public safety importance, so a well-developed critical infrastructure assurance program should be established across the jurisdiction.

The R2R assessment collected data on the preparedness of the private sector, represented by the OKTA refinery outside of Skopje. Building on a risk assessment and ranking of expected impact, the refinery is mainly concerned about fires and landslides, since other risks are deemed less likely. These facilities possess their own preparedness and response systems, as well as individual response plans, and have established an incident manager process. When overwhelmed, OKTA reaches agreements with neighboring local fire brigades and the PRD to assist in firefighting. Authorities undertake biennial inspections in accordance with existing rulebooks, though these are said to be more pro forma than in-depth. This indicator scored low, since a comprehensive safety and assurance program for all critical infrastructure in the jurisdiction could not be identified. An updated list of all public and private sector entities was not in place, nor were there annual reports for “facilities of vital significance” (the term used for critical infrastructure by earlier legal instruments) with information on their state of preparedness. This situation has impeded establishment of appropriate inspection authorities and timely notification and has hindered early warning messages. Based on the R2R assessment, it can be concluded that the responsibility for the safety of critical infrastructure is mainly in the hands of the (private) owners and depends on their willingness to invest in the security and safety of the physical plants and personnel. However, as part of the process of establishing the Next Generation Incident Command System (NICS), data collection has begun on important public infrastructure. Improvements are needed to streamline the relevant legislation in this regard.



Photo 1. Firefighting capacities of OKTA facility. (Credit: © OKTA.)

Criterion 1.2: Financial Preparedness

Indicator 1.2.1: Appropriate Financial Instruments

Rationale given by the R2R diagnostic: The government’s central role in natural disaster emergency response and recovery involves a large financial burden, which varies based on the government’s definition of contingent liabilities related to natural disasters. Contingent liabilities refer to the spending obligations arising from past events that will be incurred in the future if uncertain discrete future events occur. Ex ante disaster funds provide the government with a predefined amount in readily available resources to be used in the aftermath of a natural disaster. Ex ante funding includes the financial allocations, budget contingencies, emergency reserve funding mechanisms, and insurance instruments that exist to support effective preparedness, response, and early recovery.

Municipalities are expected to reserve budgets for emergency-related expenditures. But as the desk review found, in reality local authorities do not maintain these budgets. Municipalities rely on the PRD, whose budget is seen as too limited in overall terms (Republic of Macedonia CMC 2015). The interviews corroborated the finding that the country is not appropriately financed for emergency situations at either central or municipal level. An appropriate budget for EP&R is missing, and the bulk of the existing budget is taken up by personnel (92 percent), with only 8 percent for maintenance. Equipment is mostly financed on a project basis. The City of Skopje allocated 0.006 percent of its

municipal budget to EP&R in 2014 and doubled this share in 2015, although greater progress has been made in recent years. Country stakeholders referred to the need to adapt legal provisions on this account to allow them to better utilize the expected funds. The United Nations Development Programme (UNDP) has engaged with municipalities concentrated around rivers to raise awareness of the need to reserve part of their budget for disaster prevention and preparedness.

The Law on Crisis Management states that “the resources of the public enterprises, institutions and services, as well as the trade companies of special importance for the activities related to the crisis situation may be used, pursuant to the law.” Although the potential role of the private sector is starting to be recognized, a real culture of cooperation—featuring public sector collaborations with civil society and professional associations—is not yet in place. Funding for the Macedonian Red Cross is stipulated by law and basic funding is constant. Additional projects cover the salaries of some of its personnel.

International funding streams and donations—encompassing both financial and in-kind donations and credits—are an important part of the country’s EP&R finances. For the migration crisis, for example, most of the expenses were covered by international donors. Just as in other countries, the scope of the COVID-19 crisis and its corresponding financial needs were not foreseen.

Indicator 1.2.2: Emergency Procurement Systems and Frameworks

Rationale given by the R2R diagnostic: Within disaster relief logistics, procurement accounts for a substantial percentage of total expenditures. Good procurement practices are essential for efficient, effective, transparent, and accountable governance and project management in emergency disaster response. Proactive procurement forecasting identifies the goods and services required for effective disaster response by stockpiling and forming vendor partnerships to ensure rapid distribution in emergency situations. Decentralized, fast-track-response procurement procedures incorporate more flexibility and invoke other mechanisms (such as prequalification processes) to minimize serious supply delays, reduce costs, and speed up delivery times.

The country has a central system for procurement. Emergency procurement is decentralized only for smaller-scale disasters; if the estimated damage exceeds 10 percent of the municipal budget, the government intervenes. Given that most municipalities are constantly in debt, procurement is effectively a centralized process that takes place through the central authorities—that is, the local response units do not carry out the needs assessments or purchase the required equipment. Country stakeholders complained about this lack of flexibility in procurement, citing the difficulty of having to make purchases during a given fiscal year and the obstacles to starting new projects that were not in the original plan. Only in crisis situations (such as the COVID-19 pandemic) can additional purchases be made. The existing legal frameworks are reportedly not airtight—for example, after flash floods in 2016, tender procedures for road construction were not followed, and works suffered additional delays (Skopjeinfo 2018)—and they reportedly do not facilitate fast enough emergency intervention.

Indicator 1.2.3: Public Financial Management Policies and Procedures

Rationale given by the R2R diagnostic: Effective financial management policy outlines and provides guidance on the processes involved in managing response costs during the activation of the emergency response structure and protocols. It outlines those responsible for managing response expenditures for costs incurred during response and recovery as well as the relevant expense authorities and applicable thresholds. Financial management procedures outline the scope, steps, and responsibilities for financial tracking of all eligible and approved emergency response costs, authorizations of those expenditures, and processing of invoices.

The Law on Crisis Management stipulates that “the funds for the requirements of the crisis management system in the Republic shall be provided from the budget of the Republic of Macedonia. The funds for the requirements of the crisis management system may be also provided from other sources pursuant to the law. . . . The decision on using the resources of the state administrative bodies, the municipality bodies and the City of Skopje, as well as their management in a crisis situation shall be adopted by the Government.” As this passage indicates, the executive branch is heavily

involved in the distribution of resources (Republic of Macedonia CMC 2015). Although the necessary policies and procedures exist on paper, the R2R diagnostic identified politicized decision-making and places where decisions are not necessarily based on available information or are not being made in line with actual needs. Country stakeholders felt that political actors did not always make the correct decisions. Financial decision-making was deemed to be ad hoc and usually involved reallocating budgets and using international loans.

Indicator 1.2.4: Personal Financial Risk Transfer Programs

Rationale given by the R2R diagnostic: An established personal insurance market that is affordable and available in high-risk areas can significantly reduce the financial burden on individuals, families, and governments in the wake of disasters and emergencies. In combination with other government risk-transfer mechanisms, a robust personal insurance market can significantly reduce government contingent liability while also improving personal accountability and preparedness of individuals and families.

There is need for catastrophe insurance facilities and financial risk transfers. The United Nations Office for Disaster Risk Reduction, for example, advocates development of a risk transfer market and a mechanism to protect the private sector from damages caused by disasters. In response, financial risk transfer programs for households, farmers, and small and medium enterprises have been the focus of one of the National Platform for Disaster Risk Reduction working groups, in cooperation with insurance companies, the economic chamber, and the business community and the trade unions. In 2015, plans to establish Europa Re, a specialized regional reinsurer of disaster risks, were announced (Republic of Macedonia CMC 2015). Financial risk transfer programs now exist and are communicated to the public, with progress under Europa Re made in 2019 (Europa Re 2019).

Component 2 Information

Criterion 2.1: Community Engagement

Indicator 2.1.1: Program for Local Level Volunteer Emergency Responders

Rationale given by the R2R diagnostic: Local responders are the first to act. However, if no systems are in place to engage with local volunteers in advance of an emergency, managing disaster response becomes more difficult. It is helpful to engage with volunteer responders early to maximize response effectiveness, significantly reduce response times, and encourage individual accountability for personal and family preparedness.

In terms of community engagement, the CMC maintains a network with a variety of nongovernmental organizations (NGOs) and associations (WHO 2019). A comprehensive program for volunteer engagement does not exist in the country, although there are various smaller programs at the regional and local levels—for example, there are 10 volunteer fire departments in country. A key explanation was said to be the absence of a strong volunteering culture (City of Skopje and EPICURO). The volunteer program of the Macedonian Red Cross is best known and provides basic training and equipment. This precrisis training has allowed 4,000 to 5,000 Red Cross volunteers to be active during the COVID-19 crisis, on top of the 150 regular staff. Both NGOs (such as LEGIS) and the City of Skopje are supported by volunteers, but there is a need for more substantial trainings and budget. Legal provisions on involvement of volunteers in the EP&R system exist, but the absence of a systematic approach results in ad hoc budgeting and in an imbalance in the geographical distribution of volunteer associations. For example, the voluntary firefighting association of Sveti Nikole is provided with an annual budget of €1,500 by the municipality and depends on (international) donations for any other expenses. There is only limited integration of governmental first responders into the trainings and drills of volunteer emergency response teams.

Indicator 2.1.2: Program for Community Education

Rationale given by the R2R diagnostic: Addressing preparedness and response at the local level can raise awareness of specific threats and help communities to prepare and engage in problem solving prior to and during a disaster. Further, these programs ensure communities know what local action to take when warnings are issued and thus reduce pressure on response services during widespread and/or more intensive disasters and emergencies.

The PRD has been working with the Ministry of Education and Science on the integration of preparedness lessons, mainly on winter weather conditions, in education programs. Brochures about protection against fires and disasters have also been distributed to the public. However, a system-wide awareness strategy is absent. During the flash floods of 2016, for example, it was said that citizen awareness was lacking (UNDP 2016b). School curricula include some information on risks and disasters (Republic of Macedonia CMC 2015). In addition, the Macedonian Red Cross trains citizens in first aid, maintains youth clubs in its local branches, and works with youth clubs in elementary schools. It has received support from UNICEF and ERASMUS+ for strengthening risk reduction in kindergarten and schools in selected areas. The Red Cross educates the population on health, first aid (in tourist areas), and mountain rescue; focusing predominantly on vulnerable rural areas, it also trains its staff and volunteers to transfer knowledge to the local population so as to mitigate the consequences of disasters (Red Cross of the Republic of North Macedonia 2019). According to Red Cross staff, however, there is a need for further engagement of local communities in line with the approach of the International Federation of Red Cross and Red Crescent Societies (IFRC). This engagement is also deemed important to ensure local buy-in in locations with transit centers.

Indicator 2.1.3: Program to Support Small-Scale, Community-Led Mitigation Works

Rationale given by the R2R diagnostic: Mitigation of risk at the local level with support from the community helps raise overall risk awareness while reducing the effects of a disaster and promoting rapid recovery following an event. Examples might include retrofitting irrigation equipment for secondary use in wildland fire suppression, local riverbank stabilization, etc.

Mitigation of risks at local level is an underdeveloped area in North Macedonia. The R2R diagnostic has identified flood risk management projects as well international mitigation projects for existing hazards mainly connected to climate change. Most of these projects are being carried out by UNDP. Switzerland supports infrastructure projects to enhance resilience and sustainability of hard structures in river basins. However, there continues to be a gap between existing laws and their implementation, and an important challenge is that the central level does not fully understand the issues faced at the local level. Another challenge is sustainability of the works, including the recovery project after the 2016 floods. The City of Skopje has obtained funding from the EPICURO (European Partnership for Urban Resilience) project to increase urban resilience. This project aims to enhance awareness, skills, and coordination on climate change adaptation at local level. The City of Skopje has also received support from the AMARE-EU project to integrate non-native populations into emergency management and response.

Indicator 2.1.4: Education and Tools for Local Leaders

Rationale given by the R2R diagnostic: Local leaders, elders, and community groups have an important role to play in overall disaster risk reduction. Engaging and training the community leadership in proactive risk management can improve the overall effectiveness of the emergency management program in all phases, ensuring integration with all levels of government and establishing a local culture of preparedness.

The diagnostic could not identify systematic education programs specifically directed at community leaders or regional information-sharing forums to establish a local culture of preparedness. Local preparedness capacities were dependent on the decentralized structure of the CMC and PRD or were strengthened by civil society; but they suffer from the absence of an integrated approach. UNDP helps educate local leaders, including by funding Red Cross projects through its regional centers for crisis management. Yet the Macedonian Red Cross's interest in building local capacities stands at times in opposition to the existing EP&R system in place.

Criterion 2.2: Early Warning Systems

Indicator 2.2.1: Functioning Monitoring/Surveillance Program

Rationale given by the R2R diagnostic: Monitoring and surveillance mechanisms and the ability to disseminate the information they generate are the foundation of an effective early warning system. Ideally, there should be an existing system that allows for the prediction and forecasting of potential hazards, grounded in sound science and technology. This system should be able to operate 24 hours a day, seven days a week. Ongoing and frequent monitoring and surveillance of hazards increases the likelihood of accurate and timely warnings. Since there are multiple hazards, there should be a certain level of coordination across sectors/ministries in order to understand and possibly leverage existing monitoring and surveillance systems.

The Hydrometeorological Services (HMS) and the Ministry of Environment and Physical Planning regularly monitor weather events, river systems, air pollutants, and potential industrial risks (Republic of Macedonia CMC 2015). The Macedonian Forest Fire Information System (MKFISS), a web-based geographic information system (GIS) platform integrating data on forest risk management, was developed in 2013 with support of the Japan International Cooperation Agency (JICA and Crisis Management Center 2014). MKFISS has 600 users from various institutions but needs to be updated and used more operationally. A follow-up project (Ecosystem-based Disaster Risk Reduction, Eco-DRR) is currently being implemented. Monitoring information is gathered by the CMC and its eight regional centers, which work on a 24/7 basis and also operate the recently introduced 112 emergency number.

The existing monitoring systems do not have a multi-hazard approach; WHO (2019) has called for investments in a 24/7 monitoring of epidemics, and the Food and Agriculture Organization of the United Nations (FAO 2019) has recommended early warning systems for the agricultural sector. UNDP is strengthening early warning for floods in cooperation with HMS in selected locations. Key informants have indicated that they need more monitoring systems, equipment, and personnel in order to have more data. There is room for more cooperation in terms of sharing and integrating data, digitalizing/automating the system, and further engaging with communities on early warning.

Indicator 2.2.2: Sound Data Analysis Program

Rationale given by the R2R diagnostic: The analysis of data gathered by monitoring and surveillance systems is crucial to any early warning system. The data gathered should be analyzed using scientifically and technologically sound methodologies to ensure that the information being disseminated is accurate, useful, and timely.

The CMC has a department of analytical planning, but data management and analysis remain a key issue. Analysis within CMC follows international standards; nevertheless, predictive event modeling based on the data could be improved, crowdsourced data do not appear to be integrated in the analysis, and surveillance centers are not properly equipped. During the 2016 flash floods, the hydrometeorological system had little capacity to translate forecasts into meaningful public guidance (WHO 2019). The limited capacity of atmospheric water drainage systems in urban areas compounded the problem, which was partially resolved after the floods. Responsibility for declaring the level of risks is spread out across agencies, depending on the type of hazard, and requires collaboration with the Assessment Group that advises the Steering Group.



Photo 2. Reconstruction of atmospheric sewage on Boulevard Kiro Gligorov in the City of Skopje. (Photo credit: Plusinfo.mk, October 15, 2014.)

Indicator 2.2.3: Real-Time Warning Messages

Rationale given by the R2R diagnostic: Functional early warning systems deliver clear, simple messages containing useful information to affected or at-risk populations. This information empowers individuals and communities to take action and adopt protective behaviors that save lives. Messages need to be straightforward and action oriented. They should be consistent across multiple media platforms and message delivery systems.

The Law on Protection and Rescue assigns both the CMC and the PRD responsibilities for warning and informing the public in case of an emergency. The National Platform for Disaster Risk Reduction has a working group on early warning, which seems to lead to misunderstandings on the division of tasks. There is a procedure for communicating with the public through the media during a state of emergency or a crisis situation, or when access to representatives is reduced or restricted. CMC works from templates to provide municipalities with information on a daily basis, and the alert system is part of their operations center (UNDP 2016b). Cooperation between agencies is a challenge because of the need to ensure consistent and complementary messages. Tracking of messages is absent.

Indicator 2.2.4: Functional Warning Message Distribution Systems

Rationale given by the R2R diagnostic: Critical early warnings based on sound analysis and high-quality data are effective only if delivered rapidly to the population at risk. To be effective in reaching the target population, warning messages must be delivered near simultaneously across multiple media platforms, such as television, radio, social media, and mobile phone text message. By ensuring “last mile” connection for early warnings, at-risk populations are able to take lifesaving actions within the community to reduce the consequences of disasters and emergencies.

The CMC is the administrative body responsible for alerting the population. The main warning method is sirens, but around 200 sirens in the country are currently not functional due to a lack of finances to maintain and upgrade the equipment. A project is currently being implemented with the goal of repairing the system. The last bylaw on alerting procedures (crisis communication) was drafted in 2018, and included arrangements with radio, TV, and the agency on electronic telecommunication as well as agreements with the private enterprise A1. The EU Civil Protection (2018) peer review report cited a need to develop a system that will inform all mobile users in the country or in a specific zone of an impending danger through the network. The interviews found that the CMC and PRD are currently working on a system to send SMS messages through the A1 operator and improve message distribution through radio and TV.

Criterion 2.3: Information Management Systems

Indicator 2.3.1: Functional Information Management System

Rationale given by the R2R diagnostic: The use of a common Disaster Management Information System (DMIS) by all emergency management personnel improves overall situational awareness, decision making, and response coordination. A system based on commercial off the-shelf (COTS) software that is interoperable with common systems in use by international agencies can improve overall response and increase training opportunities for personnel across agencies.

The decentralized nature of the EP&R system in North Macedonia is a challenge for a functional and common information management system. Several EP&R institutions operate according to different laws and bylaws, impeding effective information-sharing, which currently occurs only informally. Partner meetings are organized to discuss upcoming season-related hazards, but information is often shared ad hoc and face-to-face when disaster strikes. The CMC remains the central point for gathering data from stakeholders and for sharing that information in accordance with Article 37 of the Law on Crisis Management. In 2018, the country adopted the regulation on establishing operational procedures for mutual communication, coordination, cooperation, and activities of entities in the crisis management system. However, the system has become politicized, leaving little room for professional experts to do their work. In general, there is limited awareness of the need to plan in advance, for example to prepare for climate change. Thus the EP&R system is currently not working on the basis of action and reaction plans or scenarios.

The Next Generation Incident Command System will substantially improve the information management system and become a common DMIS. However, given that the majority of local EP&R stakeholders operate under outdated procedures, there is a real risk that the NICS, whose implementation is based on a top-down initiative, will not be sufficiently understood by professionals working locally.

Indicator 2.3.2: Budget Allocations for Information Systems

Rationale given by the R2R diagnostic: A functional DMIS fills a crucial role in supporting situational awareness and organizing information prior to and during a disaster. It is important to ensure that the system is maintained, updated, and upgraded as necessary so that it functions appropriately and valid information is available when required.

Development and maintenance of DMIS is dependent upon funding from abroad. In fact, due to the focus on developing the NICS, the MKFISS system is not being updated or improved. Training in the NICS system is taking place for a limited number of staff members. There is competition for funding. More clarification is needed to ensure that the NICS is funded in a sustainable and comprehensive manner.

Indicator 2.3.3: Integration of GIS-Generated Data in DMIS

Rationale given by the R2R diagnostic: The availability of geolocated information within the DMIS provides superior situational awareness for planning, mitigation, response, and recovery efforts. Real-time updates of GIS data, often by mobile and wireless device users, provide current data for disaster and emergency response and recovery planning.

Use of information management systems as a source of solid baseline data for decision-making is hampered by outdated risk assessments. A regional risk assessment was produced by the CMC in 2016. UNDP is currently supporting the drafting of new risk assessments, including in the City of Skopje. Data on illegal constructions and facilities are not readily available for use by EP&R actors. There are expectations that existing GIS-generated data will be included in the NICS. In fact, the objective is for NICS to collect all data from institutions, including the CMC, public enterprises, cities, and other actors producing and/or collecting relevant data.

Indicator 2.3.4: Integration of Early Warning Data in DMIS

Rationale given by the R2R diagnostic: Early warning systems provide data that are crucial for analyzing the potential impact of an incident. The integration of early warning system data with the DMIS enhances situational awareness and allows for the dissemination of a comprehensive common operating picture for all responding agencies.

Given the challenges pertaining to early warning data and analysis and the absence of a common DMIS, this indicator scored zero. Improvements are expected with use of NICS, however. Weather data, for example, will be automatically integrated and updated in NICS.

Criterion 2.4: Geomatics

Indicator 2.4.1: GIS Capacity

Rationale given by the R2R diagnostic: GIS can be a powerful tool for planning, preparedness, response, and recovery by organizing and making available information on hazards, vulnerabilities, and resources for emergencies. GIS can also be a powerful tool in promoting public risk reduction by helping populations better understand current risks.

The capacity for a geographic information system depends on the further development of the NICS by the CMC. Thus this indicator currently scores zero due to the absence of available GIS capacities for emergency management activities. The MKFISS system contains some geomapping related to fire protection in forests, but EP&R actors identified access challenges in this area as well. The Public Enterprise on Macedonian Forests is said to have data but lacks staff and equipment to effectively use the data. The Macedonian Red Cross utilizes GIS-based tools and software but recognizes the need for further development. The importance of GIS capacity is recognized but is said to be in the first phase of its development.

Indicator 2.4.2: Georeferenced Data Layers

Rationale given by the R2R diagnostic: Interoperable GIS improves situational awareness and response efficiency, and can prevent further damage or loss of life. Responding agencies and emergency management personnel should have interoperable systems based on common baseline data layers. This foundation significantly contributes to the common operating picture and efficient information flow between responders and integrated command agencies.

Georeferenced data exist for most hazards, based on piloting work supported by international actors such as UNDP, GIZ (German Agency for International Cooperation), and JICA. CMC has access to a large amount of data based on web maps; however, PRD has no access to any geomatics data. The Law on National Infrastructure of Spatial Data and the Law on Critical Infrastructure are the basis for creating related data. However, data are not integrated

into a singular system providing historical data on previous disaster impacts and georeferenced vulnerabilities. The CMC has a so-called Information and Documentation Database (INDOC) for collecting and storing data about past disasters, but this information is not translated into georeferenced data layers. Counterparts stated that rather than digital maps, classical maps were often used. Legal requirements and confidential data agreements with private sector critical infrastructure owners and with government critical service providers are not in place yet.

Indicator 2.4.3: Standards for Georeferenced Data

Rationale given by the R2R diagnostic: Ensuring that data conform to a standard lowers overall operating costs for the GIS while ensuring the data quality is maintained. This enables faster processing and interpretation of the data and increases confidence in the models and outputs from the system. These efficiencies lead to more rapid and informed response operations with higher confidence in decisions.

A review of this indicator will be needed after the implementation of the NICS in country. Since the NICS is an existing system implemented in other (Western Balkan) countries, standards for interpretation of GIS data exist and are expected to be used in North Macedonia as well, in accordance with INSPIRE Directive regulations. In North Macedonia's existing National Spatial Data Infrastructure (NSDI) portal, 87 percent of the GIS data are standardized in accordance with international regulations.

Indicator 2.4.4: Standardized and Periodic Process for Updating

Rationale given by the R2R diagnostic: GIS data must be current and reliable in order to have value for emergency management activities. A system that regularly updates the information ensures that the information is always useful. It also improves situational awareness for focusing preparedness activities by increasing understanding and transparency about how hazardous areas, community vulnerability, etc., are established.

A system for regularly updating information is not in place. Again, there are expectations that the NICS will provide updated georeferenced situational awareness in real time.

Component ③ Facilities

Criterion 3.1: Emergency Operations Centers

Indicator 3.1.1: Available Emergency Operations Centers

Rationale given by the R2R diagnostic: An emergency operations center (EOC) must be supported by sufficient backup systems, including power, heating and cooling, communications, staff, and operational resources (such as security, break rooms, planning/meeting rooms, media center, etc.). Ideally, an EOC would have a backup facility that is geographically distant and fully capable of operation in the event the primary EOC is not available.

The Law on Crisis Management provides that “a headquarters shall be formed in the Centre, as an operational and professional body that handles the activities for prevention and management of crisis situations. Within the regional centers, regional headquarters shall be formed as operational and professional bodies headed by the Head of the regional center.” This state operations center is to function on a 24/7 basis and includes the 112 emergency call service. However, in practice, the headquarters of crisis response depends on the type of crisis at hand, and it is ultimately the prime minister who decides on the nature of the lead agency. Even though competences are clear on paper (Republic of Macedonia CMC 2010), there is little continuity or strategy in the nomination of key agencies. Nor is there an established permanent facility to support extended emergency conditions. The Macedonian Red Cross has recently opened an emergency operations center (including tools and technology) in the outskirts of the capital, with funding provided by IFRC, the United States, and its own resources. The center was activated for the COVID-19 emergency to gather, plan, and analyze all information received from its 32 local branches and City Red Cross of Skopje. The OKTA facilities have a monitoring and operations center of their own.

Indicator 3.1.2: Mobile Command Post

Rationale given by the R2R diagnostic: Mobile command post facilities typically include space for incident management activities in a controlled environment (secure, sheltered, etc.). The ability to accurately communicate site conditions, resource needs, and other information to the EOC is necessary. This requires reliable backup communication capabilities and the ability to operate in a self-supporting mode for some period, ideally 36 to 72 hours, without resupply.

Mobile command posts are temporarily set up in response to emergencies. Even though they are improvised, mobile command posts are capable of managing multiple agencies during disaster response, building on personal networks and facilitated by the crisis mode. In the City of Skopje, for example, police, armed forces, and emergency health workers are said to have worked together in an improvised center. Despite initial confusion on who is leading, these mobile posts and coordination agreements emerge as part of the situation. More stable coordination mechanisms are established over time, as was seen in response to the migration crisis. The Macedonian Red Cross is currently considering the establishment of a field coordination center.

Indicator 3.1.3: Clear Lines of Authority

Rationale given by the R2R diagnostic: Policy and authority must be clear for activation of the EOC and for the required staffing, fiscal authority, and operational responsibilities, including the role of elected officials, government staff, NGOs, and other supporting entities. How the EOC will function in relation to other governments (federal, territorial, municipal) and potential foreign disaster agencies or corporations should be spelled out in advance of an emergency.

The Steering Group provides an organized structure of authority and criteria that exist upon the deployment of resources and cease with demobilization of resources. The Law on Protection and Rescue and the Law on Firefighting clearly define the framework for commanding forces and coordination with other actors on the ground; it must be noted, however, that this framework is not respected. Furthermore, enhanced monitoring and effective decision-

making are complicated because of the overlap in responsibilities. Coordination results (coming from the CMC and the Steering Group) are not necessarily aligned with instructions to responders (coming from the PRD). Issues with terminology—the distinction between “crisis” and “state of emergency”—as used in the national legal framework complicate the matter further. In the field, operational coordination is facilitated by the small number of actors in country, but the clear lines of authority and coordination mechanisms are not stable and demand time to mature further.

Indicator 3.1.4: Standardized Process for Social Media and Crowdsourced Data

Rationale given by the R2R diagnostic: To control the messaging surrounding an incident, it is necessary to know what is being said on social and conventional media and to respond to rumors and incorrect information with an authoritative voice and clear messaging. Collecting, aggregating, and analyzing media can help identify needs for messaging, and can be valuable tools for analyzing the effectiveness of messaging and overall response.

In line with the findings on information management, there is no standardized process for monitoring and analysis of social media and crowdsourced data. The Macedonian Red Cross, for example, uses social media data only after government data. It is cautious about using data of this kind due to cases of misinformation in the past.

Criterion 3.2: Training Centers

Indicator 3.2.1: Capacity of Training Centers

Rationale given by the R2R diagnostic: A training center will have limited effectiveness unless it has the capacity to meet the needs of the targeted trainees. Dedicated resources for training will meet both general and specific needs of the training audience.

According to the 2005 Law on Crisis Management, the CMC has responsibility for training: “In order to provide successful execution of its competencies, the Centre shall organize, prepare and realize training, exercises and other activities for the persons that execute tasks in the Centre as well as for other participants in the crisis management system.” In 2009, there were plans to establish a national crisis management educational and training network, to include “universities, vocational schools and other educational institutions, such as the Military Academy and police training facilities, by planning to interpolate crisis management modules in their existing curriculum” (Republic of Macedonia CMC 2015), but these plans were never executed.

The PRD has a training department, but its facilities were dismantled in the past. The EU Civil Protection (2018) peer review report concluded that “the capacities of the current training centre do not meet the basic needs in the processes, based on European standards.” With support from the US government, a new training center is being planned. The PRD, in cooperation with other relevant partners in the country, would develop training programs for all the response structures in the emergency management system, and might extend its training programs in the Western Balkans region. The City of Skopje has a training facility for its firefighters situated in Skopje’s headquarters, and the Public Enterprise on Macedonian Forests is also planning to build a training center. The Police Academy was divided in 2008 into two entities: the Police Training Center of the Ministry of Interior, responsible for public order and peace, border police training, and traffic control; and the Faculty of Security–Skopje (St. Kliment Ohridski University, Ministry of Education and Science), which offers theoretical courses in crisis management but not disaster management. Other academic institutions, such as the Faculty of Philosophy at St. Cyril and Methodius University and the Military Academy, offer various learning programs (bachelors, masters, conferences, exercises, internships) related to crisis management, at times in cooperation with EP&R actors.

Indicator 3.2.2: Options for Multi-agency Training

Rationale given by the R2R diagnostic: Multi-agency training centers will allow interagency training and will also reduce costs by avoiding the need for training centers for specific disciplines. Beyond responders, the public and volunteers should have access to training centers to promote a bottom-up approach to emergency preparedness and response.

The new PRD training center is expected to host national and international training events for a variety of actors, including fire services and public enterprises. All actors, including the private sector, will be able use the facilities, which will be able to accommodate trainings currently taking place across the country, including on emergency first response, humanitarian demining, and protection and rescue. The City of Skopje has the ambition to expand its firefighting training center into a regional center. The Ministry of Defense has its own training capacities. At this moment, multi-agency training is insufficiently organized.

Indicator 3.2.3: Utilization and Maintenance of Existing Training Centers

Rationale given by the R2R diagnostic: A strategic plan and operational budget for use of a training site will ensure site optimization; engagement with multiple responder agencies and the private sector should be explored and formalized. Training centers can function effectively as secondary EOCs or regional command posts, if properly designed. The facilities must be maintained to a high standard and equipment kept current with the equipment being used in daily operations by rescue and response services.

The Macedonian Red Cross's new operations center is located in new facilities at a logistics center outside the city center of Skopje. This center is also used as a (regional) coordination and command post during crises and has the advantage of being close to the warehouses for disaster response. The establishment of the PRD training center is facilitated by foreign budget; there is no budget at regional or national level to establish and maintain operational readiness and improvement of training centers. Academic programs are initiated by a few professors (from various academic establishments) with expertise in crisis management, but there is no formal agreement offering opportunities for graduate students. Such programs would be dependent on funding from abroad.

Indicator 3.2.4: Geography and Location of Training Sites

Rationale given by the R2R diagnostic: Geography and accessibility are key to training the maximum number of agency personnel and public volunteers. Exploring partnerships with academic institutions and ensuring proximity and easy access to transportation will improve usage patterns for training centers, in turn increasing the opportunity for collaborative learning and establishing a culture of preparedness across public, private, nongovernmental, and academic sectors.

The majority of existing training sites are located around Skopje, the capital. The new PRD training center is to be located in the vicinity of Skopje in former facilities of the Ministry of Defense. It is thus expected to be easily accessible.

Criterion 3.3: Logistics Warehouses and Response Stations

Indicator 3.3.1: Entities and Frameworks for Logistic Hubs and Warehouses

Rationale given by the R2R diagnostic: Logistics management is often a complex process even during ordinary (non-disaster) periods. Due to this complexity, suitable and sustainable networks should be developed and maintained as part of a disaster preparedness plan. Logistics hub networks, including warehousing storage facilities, should be able to work with the private sector, government, and NGOs to successfully coordinate incoming international aid and distribute it to domestic areas in need.

The PRD is the lead agency for all international and domestic aid and responsible for coordinating deployment and storage of emergency supplies during disasters. In case of incoming relief, the PRD regional centers are responsible for managing the stock and distribution processes. Every regional center has at least one agreement with transportation companies for supplies or personnel. Yet time is lost during emergencies to the process of locating and mobilizing sufficient trucks, since the PRD has no trucks of its own. In general, budgets are insufficient to maintain (older) equipment, ensure functionality, and cultivate a fully professional framework for logistics hubs and warehouses. EP&R actors follow various standard operating procedures (SOPs), and the single, cohesive line of operation that should guide activities is not in place.

Indicator 3.3.2: Capacities of Logistic Warehouses

Rationale given by the R2R diagnostic: Beyond having a network of logistic hubs for distribution of goods and materials, operations management and the physical structure of logistic warehouses are key to increased resiliency during disasters. Warehouses must have the size, staffing, budget, and equipment to successfully intake, sort, maintain, store, and eventually distribute both perishable and nonperishable items and other equipment.

The responsible PRD department has no storage facility of its own and must rely on support from local municipalities, regional PRD centers, and other governmental institutions. In case of disasters, preexisting agreements with companies are activated to store food and water. For the COVID-19 crisis, the facilities of the Ministry of Health are used, and private enterprises (e.g., pharmaceutical companies) are expected to produce and store the necessary supplies. The facilities are located in appropriate places and in general are resilient to environmental factors. However, the storage facilities at the regional centers require repair or reconstruction and lack important equipment such as forklifts, appropriate fire protection, and alarm systems. The long-term storage of sensitive goods is problematic; equipment storage is less of an issue. Basic staff for sorting and prioritizing of goods and materials is available but requires reorganization and additional employees as backup. More budget for maintenance of warehouses is needed. The Macedonian Red Cross has its own warehouses in the logistic center in Skopje, as well as two additional regional and further local warehouses, strategically placed across the country.

Indicator 3.3.3: Capacities, Resources, and Abilities of Local Response Stations

Rationale given by the R2R diagnostic: Local response services are a critical resource during a disaster and will be some of the first responders deployed. While local response stations are primarily for daily emergencies, a regional network of response stations will also provide a resource for disasters until more specialized aid is deployed. Daily emergencies will not cease during disasters, and ensuring that local response stations can continue to carry out their regular duties is key to building a resilient population. Local response stations include resources such as ambulances or paramedics, firefighters, police, and search and rescue.

Response stations are situated in municipalities. In addition, the Public Enterprise on Macedonian Forests maintains 30 branches across the country, with a unit for forest fire protection to ensure an appropriate response time. The Red Cross has 32 local branches and one for the City of Skopje. The Mountain Rescue team has two stations, one in Skopje and one in Ohrid. The OKTA facility has its own response center, but (under relevant memorandums of understanding) relies on the airport fire service and the local fire department for support when overwhelmed. Eight police stations are located in large cities; these are in addition to local stations. In Skopje, there are five firefighter response stations, but this number was considered insufficient for the city jurisdiction. Two additional response stations are needed. In general, the equipment and capacity of response stations are not up to standards; response stations are old and need further resources.

Indicator 3.3.4: Specialized Hazard Response Stations Criteria

Rationale given by the R2R diagnostic: Hazard-specific response stations may be housed or designated in the same structure as local response stations with dual-trained personnel. However, specialized equipment may be needed to respond to specific disasters or hazards that are typically beyond the capacity of local response stations. Hazard response stations may also be centralized as response situations are less common, but their equipment and trained personnel should reflect local threats and hazards. Local response stations do not typically respond to disasters for prolonged periods, so specialized teams are required.

The Law on Protection and Rescue specifies that a local municipality can ask for assistance from the PRD regional department when not able to deal with the situation. The PRD can then send additional firefighters or other support, although capacity to be deployed is limited. There are no specific budget activations for special hazard response. In emergency situations, procurement procedures are eased. Response stations do not necessarily have specific training and personnel for hazard-specific response, and self-sufficient provisions have not been tested. In general, EP&R actors rely on the involvement of the private sector for specialized hazard response, such as for the cleanup after the flash floods in 2016 (UNDP 2016b).

Criterion 3.4: Shelter and Open Spaces

Indicator 3.4.1: Infrastructure for Emergency Housing and Temporary Shelter

Rationale given by the R2R diagnostic: Temporary shelters and emergency housing are potentially expensive. Preexisting partnerships to use land and provide shelter help defer or lower costs while reducing response time. Temporary housing is not meant to be permanent but should provide the basics of sustainable living, including protection from the elements, security, and a space for mental well-being. Organizing shelter resources during a disaster (rather than before) is not pragmatic and not likely to provide suitable protection to a displaced population.

According to the Law of the Macedonian Red Cross, accommodation and care of affected persons is one of the organization's responsibilities, shared with the government authorities. During the 2016 flash floods, the Ministry of Health and the Ministry of Labor and Social Policy worked in cooperation with the Macedonian Red Cross to establish two reception centers and two distribution centers. These accommodated a limited number of persons only, and most affected persons were given shelter by family and friends (UNDP 2016b). Protection and rescue plans focus on certain locations where tents can be established, and the Red Cross has some contingency planning (developed together with the Ministry of Labor and Social Policy) to identify which buildings can be used for shelter. Community partnerships have never been established, however, and the assumption is that no objections will be made if private land or open space is used during and after disasters.

There is an ad hoc approach to offering housing and shelter for populations during crisis situations, which hinders proper assessment and verification of the accommodations to be used. For the COVID-19 crisis, various public, private, and NGO entities were offered free of charge and were adopted accordingly for quarantine purposes. In this situation, funding was reallocated from other budget lines or through international loans, and did not rely on preapproved funding available. Funding for migrant camps comes from external donors.

Indicator 3.4.2: Designated Open Space for Disaster and Management Operations

Rationale given by the R2R diagnostic: Open spaces such as parks, vacant land, and green spaces are a natural convergence point for displaced people. They also may be relatively free of structures or debris after a disaster and hence be suitable locations for disaster-specific operations, such as mobile command posts and resource staging areas. Pre-disaster identification and planned use of open spaces will help save time and manage resource deployment during a disaster.

The designation of open spaces for mobile command posts, stand-by areas, landing zones, and areas for vehicles is included in the protection and rescue plans. Most of these locations belong to the state, but a legal act exists to regulate the use of private land for that purpose, specifying the agreement and compensation.

Indicator 3.4.3: Disaster Evacuation Routes

Rationale given by the R2R diagnostic: Designated and safe disaster routes are key for saving lives and evacuating portable economic resources (such as livestock) before or during a disaster. The local population must also know when, where, and how to access evacuation routes through outreach and education.

The establishment and maintenance of disaster evacuation routes deserves further attention in the future to enable these routes to be clearly visually identified and to ensure that the local population is aware of them. Updated risk assessments are expected to ensure that the evacuation routes are resilient to known hazards.

Indicator 3.4.4: Safe, Healthy, and Secure Locations for Temporary Shelter

Rationale given by the R2R diagnostic: While displaced persons may end up in emergency housing for years, the situation should always be viewed as temporary. In the short term, shelter communities often create added risks through overcrowding, crime, poor sanitation, and the absence of services that are well established in permanent communities. The longer the residence in temporary communities, the greater the risk for residents. A realistic timeline for transition to permanent housing should exist; this will also help speed the transition from response to recovery.

The response to the migrant crisis enables the assessment of this indicator. At this moment, there are two transit centers in the country, one in the north and one in the south, with a total capacity of 3,000 persons. There is also a small center for asylum seekers in Skopje and a detention center under the responsibility of the Ministry of Interior (MARRI and CRS 2017). The International Organization for Migration (IOM), together with other UN agencies and NGOs, provides services in these centers, including infrastructure, food, and water and sanitation services. In spring 2020, efforts are being made to reorganize the transit centers according to WHO health standards. The legal status of these camps is unclear, and this lack of clarity affects the protection offered residents. The police are responsible for law enforcement in these centers.

According to the Law on Protection and Rescue, shelters are built for 14 days. Should the crisis last longer, non-tent accommodation will be pursued by institutions responsible for recovery. In general, it can be said that temporary shelter meets minimum standards, but this is thanks to the support of civil society and international humanitarian organizations.

Component 4 Equipment

Criterion 4.1: Emergency Social Services

Indicator 4.1.1: Medical Responders, Prehospital Health Care, and Medical Transportation Resources for Casualty Care

Rationale given by the R2R diagnostic: Emergency medical care is required during disasters and emergencies. Systems need to be maintained to ensure communication and the tracking and documentation of injuries and patients transported from the field to the hospital (from admittance to discharge). Appropriately equipped responders with medical training or environment-specific first aid skills are the ideal personnel for transporting patients to higher-level medical facilities or hospitals.

Emergency medical care is the responsibility of the public institutions. The Macedonian Red Cross assists for public events or sporting events and provides logistical support during crisis situations. The Macedonian Red Cross has two ambulance vehicles. A field hospital was donated by Norway. A WHO (2019) report noted that “all hospitals have prepared hospital safety incidences and operational plans for crisis management and have emergency centers and services in place.” The EU Civil Protection (2018) peer review report notes the need for more and new materials in line with European standards. During the COVID-19 crisis, the local and national health system was said to be coping well, but as of the time of this diagnostic assessment no more than 1,000 COVID-19 patients could be hospitalized at a time.

Indicator 4.1.2: Disease Prevention and Core Services

Rationale given by the R2R diagnostic: A breakdown in public health and WASH (water, sanitation, hygiene) after disaster and large-scale local emergencies is the largest contributor to disease outbreak. Countries or regions that have underdeveloped public health and WASH services may already have unchecked diseases; in more developed countries, diseases may present themselves only after a disaster or large-scale emergency. A country with adequate WASH resources during non-disaster periods will recover far quicker after a disaster.

Appropriate laws and bylaws for disease control do exist; a dedicated workforce is in place; and “there is multi-level, multisectoral, centrally coordinated capacity to respond to emergencies” (WHO 2019). Epidemiology departments are responsible in the public hospitals. WHO (2019) has advised establishing a small public health emergency operations center. According to an EU report, no substantial measures have previously been taken on health and environment, except for advice on how to behave during periods of heavy air pollution (EC 2019). Health services during the 2016 flash floods were said to be well organized and attentive to the spread of infectious diseases (UNDP 2016b). A national laboratory network was established with laboratories from universities, health care providers, and other public and private institutions (Republic of Macedonia CMC 2015). During the COVID-19 crisis, the capacities under this indicator have improved significantly, including services for washing and hygiene and public awareness raising. The Red Cross maintains two water safety centers on a permanent basis, one in Skopje and one in Ohrid.

Indicator 4.1.3: Social Services Programs

Rationale given by the R2R diagnostic: Vulnerable populations, including groups like women and children who are often targets of violence, are the populations most devastated by a disaster. Certain populations, such as the elderly and those with ongoing mental illness, may not have the ability to take care of themselves. Post-disaster contexts can create conditions that lead to extremes in cultural influences that could exploit or traumatize specific vulnerable populations.

The Law for Social Protection regulates assistance to vulnerable populations in times of crisis. Social vulnerability issues fall under the responsibility of the Ministry of Labor and Social Policy. Counseling for disaster-related issues

is normally conducted by NGOs, but this is not systematic; the Austrian Red Cross, for example, funded a project on psychological first aid and psychosocial support in complex emergencies. Reunification of families takes place at registration points. Some NGOs offer gender-related support services for women and LGBT groups. The Ministry of Labor and Social Policy and NGOs provide specific services for children and elderly in accordance with the Law for Social Protection. The CMC, the Ministry of Education and Science, and the UNDP undertake targeted capacity building and public awareness and education activities related to the different needs of citizens, including people with disabilities. The National Platform for Disaster Risk Reduction has a working group responsible for institutional coordination of effort to protect vulnerable populations in case of accidents and disasters (Republic of Macedonia CMC 2015). During the COVID-19 crisis, the Macedonian Red Cross received access to a database from the Ministry of Labor and Social Policy that identifies elderly people and those with special diseases, and it has integrated the data into its response plans. Under its national COVID-19 response plan, the Red Cross provides assistance to vulnerable people and people in isolation, including the chronically ill, children, the homeless, and specific communities such as the Roma population (Red Cross of the Republic of North Macedonia 2020).

Indicator 4.1.4: Management of Mortality During Emergencies

Rationale given by the R2R diagnostic: Deceased bodies hold minimal physical risk of disease transmission for survivors and responders, but they can attract vector and zoological factors that can cause disease separately. Failure to manage local cultural needs for disposal of bodies will slow disaster recovery. Body identification is important if resources permit, as this may give family members their only opportunity for closure.

If deceased bodies are not dealt with properly, they can attract vectors that cause diseases. Guidelines are available on respecting the cultural, spiritual, and religious beliefs of the deceased. Safety procedures for recovery and handling of bodies exist on paper, and an approach for identification is in place (under the responsibility of the police department). However, the absence of appropriate vehicles designated for body recovery and transport is a problem. There are protocols and measures in place for funeral activities occurring during the COVID-19 pandemic.

Criterion 4.2: Information and Communications Technology

Indicator 4.2.1: Availability of Radio Communications in Support of Emergency Operations

Rationale given by the R2R diagnostic: Reliable radio communication forms a crucial lifeline for responders and provides critical information for EOC and command post personnel. Older and unreliable systems compromise safety and operations when they are needed the most. Newer digital systems enhance reliability and provide secure (encrypted) communications, often with text and other advanced capabilities to better manage all communications.

At the national level, the Ministry of Interior, Ministry of Health, and the City of Skopje use the TETRA radio system. Although the system is well developed and relies on good infrastructure, some agencies, including the PRD, do not use it. Financial resources appear to have been a problem in connecting all relevant actors. The Macedonian Red Cross is currently looking for funds to implement a satellite communication system as backup during disasters and has plans for a mobile coordination system. Some digital radio systems and communications supporting text are available to responding organizations. Emergency response services are only partially equipped with modern and secure radio communication equipment. Telecommunications during the 2016 flash floods was limited to the mobile network only (UNDP 2016b), and in 2019 the country had not yet connected to the Common Emergency Communication and Information System (CECIS) of the European Commission, part of the TESTA (Trans European Services for Telematics between Administrations) network (EC 2019). PRD aims to be connected to CECIS and has the basic equipment required, but needs additional human and material resources.

Indicator 4.2.2: Interoperability of Radio Communications in Support of Emergency Operations

Rationale given by the R2R diagnostic: Interoperable radio systems improve situational awareness and response efficiency and can prevent further damage or loss of life. Radio systems for responding agencies should be capable of communicating together in order to allow for a unified response and to ensure efficient information flow between responders, the command post, and EOC as necessary.

The need to improve operational and strategic coordination among the police, fire/civil protection, and medical forces, in particular regarding the 112 emergency number system, should be highlighted (EU Civil Protection 2018). Achieving this goal would improve coordination with all radio systems in the country, but currently not all public and private institutions are connected to the same network. This situation would need to be rectified to enable rapid information sharing (Republic of Macedonia CMC 2015). Some key informants were actually not aware of the possibility for interoperability—which confirms the need for more communication with regard to radio systems and a consistent use of the systems.

Indicator 4.2.3: Broadband Network Connectivity for EOC Use

Rationale given by the R2R diagnostic: Broadband network connectivity, including connection to the internet, allows for efficient communication between response and relief agencies, incident command posts, and the EOC. This allows voice, data, and video communication that improves situational awareness, provides crucial links to the world outside of the disaster-affected area, and supports use of GIS, incident management systems, and early warning systems technologies.

Recent developments took place to increase the broadband coverage of the country. A mapping of the national broadband coverage as part of existing electronic communication networks was carried out as part of the Digital Agenda, and corresponding investments increased. Operators were included in consultations to amend the Law on Audio and Audio-visual Media Services (EC 2019). It is assumed that this partly mitigates the shortcomings evident in 2015, when not all public and private institutions were connected to the national GIS network, thus hindering data exchange (Republic of Macedonia CMC 2015). Broadband connectivity is thus currently at a testing phase to ensure functionality. Budget for systematic upgrade and maintenance is available only through the Ministry of Interior.

Indicator 4.2.4: Protection and Rapid Recovery of Public and Private Sector Communication

Rationale given by the R2R diagnostic: The general public relies upon communications during and following a disaster event. Hence a program for communication infrastructure protection and recovery must include participation of industry partners and all levels of government. Such participation could require a legislated mandate that ensures cooperation by all parties and provides some level of protection to private business information.

The Law on Electronic Communications obliges IT and telecom operators to make their network and infrastructure available to the state for the purpose of rapid dissemination of information in case of large accidents or disasters. The PRD and CMC have not engaged with mobile network providers to ensure that all mobile users in a given area are alerted when needed. Discussions are ongoing with the mobile provider A1 about assisting in efforts to inform the population. Backup systems are not available yet because of financial limitations.

Criterion 4.3: Hazard-Specific Response Capacity

Indicator 4.3.1: Functional Wildland Firefighting Capabilities

Rationale given by the R2R diagnostic: Many jurisdictions, including some heavily urbanized areas, include wildland areas. A functional capacity to prepare for and suppress wildland fires ensures wildland fires are less likely to breach the interface between wildland and built-up areas or communities, causing loss of life and severe economic consequences. As with flooding, wildland fires are often rapid-onset events with little opportunity for evacuation before peak event intensity.

The Public Enterprise on Macedonian Forests has 30 branches across the country; each branch has two off-road vehicles, radio communications equipment, and small tools like saws and axes. According to the rulebook on minimal technical tools, the units are short of special vehicles, and only half of the branches have 4x4 vehicles with a special pump and a reservoir of 300 liters. Fixed water supply pipelines in the mountains would be helpful to deal with forest fires. Additional vehicles are being purchased or provided by the PRD, but the lack of accompanying pumps remains a problem. In response to past incidents involving safety equipment, special protection equipment is being purchased. The MKFISS system has a drone for wildfire surveillance. More planning should take place on preparedness for climate-related risks.

Indicator 4.3.2: Capabilities for Rescue During Floods or Water-Based Emergencies

Rationale given by the R2R diagnostic: Water-based rescue is a core response capacity in areas where floods or other water risks are prevalent. Specialized training and equipment is mandatory for safety and risk mitigation in water environments. Water rescue is a separate category from coast guard or ocean-based rescue (or rescue from other large water bodies) and requires extremely rapid response deployment to be effective.

The frequency of floods makes water-based rescue capacities essential. The Ministry of Environment and Physical Planning includes a Department for Waters dealing with flood management in North Macedonia's main river basins. In response to recent events, infrastructure project for dams are ongoing, with support from the EU and donors. There is a national committee to manage large dams, which regularly checks the stability of the dams with a reporting link to PRD and CMC. However, the institutions are not well equipped for climate change adaptations. Outreach and education programs are limited and ad hoc. Response is executed by local firefighters, who receive specialized training and have proper equipment, but only the armed forces, PRD, and police have divers. During the flash floods of 2016, the army was called upon to assist in search and rescue activities, and budgets were increased. In Ohrid, the Macedonian Red Cross provides water rescue and (supported by the EU Cross Border Cooperation Program) is seeking to enhance its capacities to make Lake Ohrid a safe tourist destination. But its response time has been significantly slowed down by the absence of an operations center and warehouse on the shores of the lake. The Bulgarian Red Cross supported capacity building of the Macedonian Red Cross for water rescue in 2014.

Indicator 4.3.3: Rescue Capacity for Structural Collapse and Entombed Rescue

Rationale given by the R2R diagnostic: Structural collapse is typified by the victims being buried or otherwise not accessible to the responders. This differs from entrapment, in which victims are physically held by or trapped inside an item but (at least partially) accessible to responders. These two types of rescue disciplines may be present at the same incident and indeed be present with the same victim. In such cases, the rescue is classified as an entombed rescue: the victims are buried and their entrapment is not initially discernable.

There are two active Mountain Rescue Services—one in Ohrid and one near Skopje—though there is no specific law regulating the operation of these rescue services. They have been operating on a 24/7 basis for two years, with the support of the IPA (Instrument for Pre-Accession Assistance)/EU Program, and a follow-up to this project is expected in the coming years. The Mountain Rescue Service uses specialized equipment, and technical rescue training is

required for their staff of 20. The next objective is to strengthen capacities for winter rescue, working together with Albanian counterparts. The team meets the standards of the International Commission for Alpine Rescue (ICAR), though the jurisdiction has only about 60 trained alpine climbers, who have to rely on police force helicopters for evacuation purposes. This situation entails several problems: first, the pilots are not trained for such actions and no joint training takes place; second, problematic communication procedures lead to an increased response time; and third, the helicopters are few, have other tasks, and lack the required equipment, such as night vision. Evacuation is therefore a time-consuming affair. An upcoming project includes the establishment of an urgent helicopter medical system and search and rescue helicopter services through a public-private partnership.³ The PRD also has four teams of protection and rescue in mountain areas in Tetovo, Bitola, Radovish, and Negotino. The country has one medium USAR team for international purposes.

Indicator 4.3.4: Functional Hazardous Mitigations Capability

Rationale given by the R2R diagnostic: Hazardous material incidents pose a serious risk to anyone who is not properly protected, including rescuers wearing firefighting equipment. The primary focus at such incidents is to prevent the situation from deteriorating and causing greater harm. Rescue may be secondary. Developing an ability to do more than secure the area and evacuate those at risk requires intense investment in equipment and training.

Hazmat capacities in country are considered weak. There is a need for educated personnel and staff trained in response to chemical, biological, radiological, and nuclear (CBRN) incidents. General equipment is adequate; the City of Skopje has two sets for radioactive and technical hazards (complete except for the transportation of the equipment and materials); but the city lacks educated personnel. The armed forces have the required staff and equipment to deal with biological hazards. The private sector has valuable experience to offer in case of hazmat incidents. For example, the OTKA refinery has well-trained personnel and top equipment to deal with chemical spills or leakages. Upon request, these capacities can be made available outside the factory. In the past, OKTA supported local firefighters in putting out a fire in a metal factory by sending one vehicle. This assistance is offered free of charge.

Criterion 4.4: Urban Firefighting and Technical Rescue

Indicator 4.4.1: Functional Urban Firefighting Capabilities

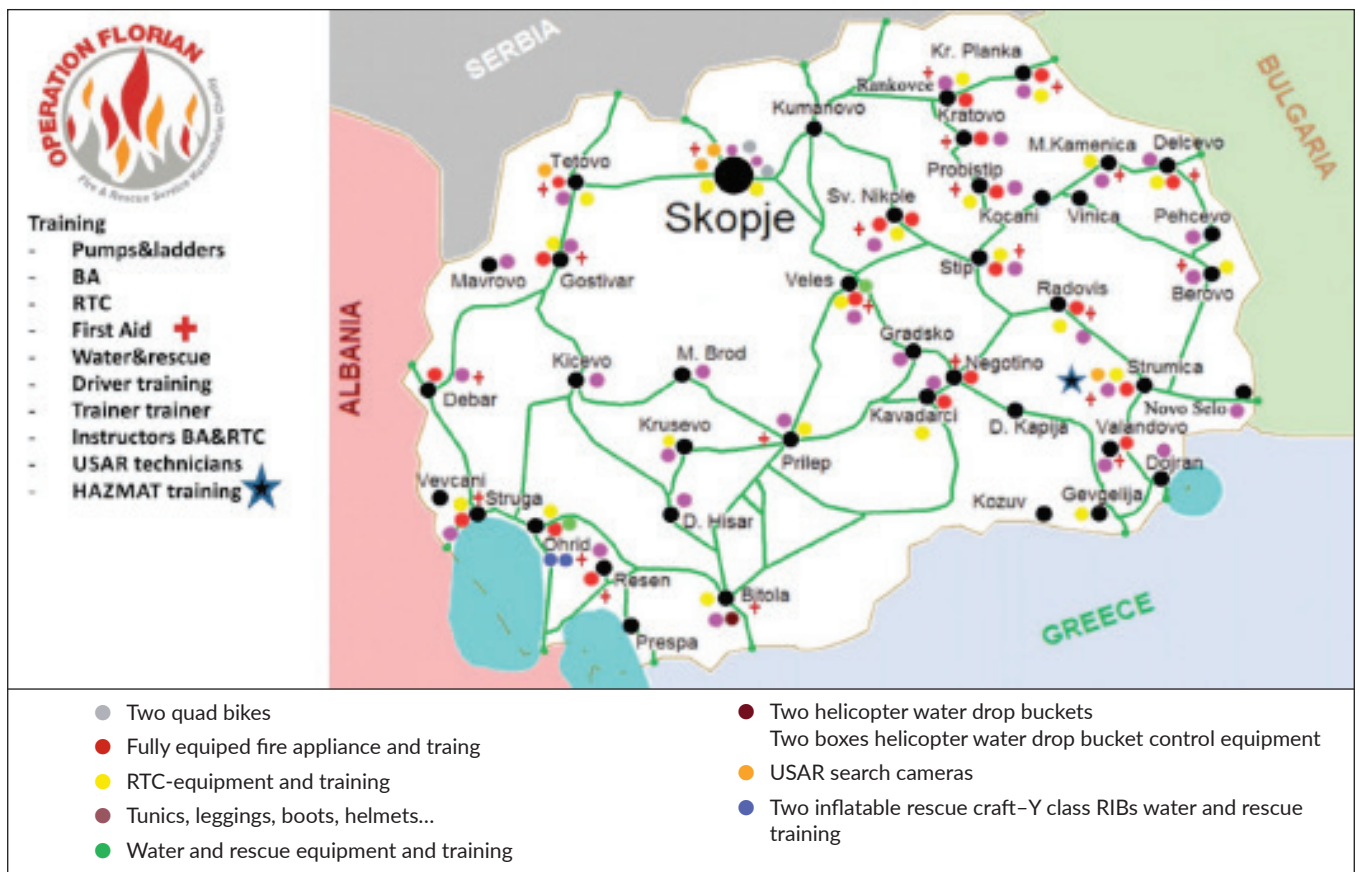
Rationale given by the R2R diagnostic: Volunteer fire services are an option in rural or less populated areas. However, full-time services will tend to respond to a greater variety of incidents, as their training level increases with time, experience, and resources. Equipment and training are a major factor in any fire service's ability to respond. The fire service's tactics will necessarily reflect its equipment capabilities if responder safety has been fully considered.

Key actors stated that the fire and rescue services seem to be underfunded, undertrained, and underequipped.⁴ The recent decentralization has created variations in budget, with corresponding differences in capacities at the local level. The central procurement system sometimes results in inappropriate equipment or makes it hard to ensure that equipment is up to standards. In the City of Skopje, vehicles are old and need regular maintenance, but maintenance is complicated because vehicles originate from a variety of manufacturers (having been donated). Additional small vehicles to maneuver in the smaller streets of Skopje are also needed. In the past two years, sufficient protection gear that meets standards was purchased. In the future, a new vehicle will be purchased with an altitude reach of 45 meters, considered sufficient to facilitate rescue in high buildings. The capital budget has foreseen resources for maintenance and training. Assistance has come from Operation Florian, which has donated equipment and provided trainings to the Macedonian fire and rescue services since 2007 (Fire Aid n.d.). For example, the voluntary firefighting association Sveti Nikole was provided with middle-heavy urban firefighting engines, released from UK fire brigades. Only one fire engine was not operational.

³ Further information is available on the Ted-Tenders Electronic Daily website; see https://ted.europa.eu/udl?uri=TED:NOTICE:373866-2019:TEXT:EN:HTML&WT.mc_id=RSS-Feed&WT.rss_f=Other+Services&WT.rss_a=373866-2019&WT.rss_ev=a.

⁴ The same conclusions are reported in EU Civil Protection (2018).

Figure 9 Donations through Operation Florian to Firefighting Services in North Macedonia



Source: Volunteer Fire Department Sveti Nikole, Republic of North Macedonia 2020.

Note: BA = breathing apparatus; RTC = road traffic collision; USAR = urban search and rescue; RIBs = rigid inflatable boats.

Indicator 4.4.2: Entrapment and Extrication Rescue Capabilities

Rationale given by the R2R diagnostic: Victim entrapment in a damaged motor vehicle is the most common technical rescue worldwide. Removing the vehicle from the victim, and not the victim from the vehicle, requires specialized equipment, training, and victim care. Such training and equipment may be the basis for responding to other emergency incidents in which a victim or a portion of a victim becomes trapped inside something (household items, farm equipment, commercial/industrial machines, etc.).

The City of Skopje is reported to have sufficient equipment and new technology for entrapment rescue, as well as regular experience with rescues of this kind. However, in general, rescue tools for vehicle extrication remain limited, and heavy rescue squads and vehicles are limited as well. Budgets and education resources for entrapment and medical and lifesaving resources are not sufficiently in place for this indicator to score well. In terms of rescue from ruins, the PRD has two rescue teams from the territorial firefighting units in Tetovo and Strumiča.

Indicator 4.4.3: Functional Rope Rescue Capabilities

Rationale given by the R2R diagnostic: Rope rescue is the basis for other technical rescue disciplines (confined space rescue, water rescue, trench rescue, etc.), which often require ropes, harnesses, anchor and haul devices, etc. to undertake safely. Providing safety regulations for workers will limit death and injury in a high-risk setting.

The Mountain Rescue Service and the medium USAR team include about 30 people with expertise in rope rescue. However, vehicles and equipment for this type of rescue are limited. As part of the Red Cross disaster preparedness program, the Mountain Rescue Service can also be deployed to urban areas. The police and army have rope rescue teams, as they are usually involved in rescue operations for lost and injured persons in the mountains.

Indicator 4.4.4: Functional Confined Space Rescue Capabilities

Rationale given by the R2R diagnostic: Confined space rescue is at the very high end of equipment and training requirements for technical rescue. Such rescues are resource- and trained personnel-intensive. Emergency services able to perform proper confined space rescues are well equipped and trained. This level of emergency service is thus expensive and considered at the apex of emergency response service delivery.

The Law for Protection and Rescue includes safe working practices in confined spaces. However, local emergency responders do not have enough experienced firefighters and equipment for this type of rescue, except for the Skopje fire brigade. Another issue is the different approaches applied by the armed forces and police (single rope technique) and the rescue services (double rope technique). Rescuers do not have enough atmospheric monitoring and ventilation equipment or communication devices. Trained confined space rescuers are limited in numbers.

Component ⑤ Personnel

Criterion 5.1: Incident Organization Structures

Indicator 5.1.1: Existing Policy for a Common Incident Organization Structure

Rationale given by the R2R diagnostic: Incident organization structures, such as the Incident Command System or the National Incident Management System in the United States, are more successful if the system is directed by policy. Formal policy more strongly encourages response agencies to follow a common and standardized system. Without political backing on a common incident organization structure, all response entities will not have the benefits of a comprehensive, jurisdiction-wide, systematic approach to managing incidents. Ideally an incident organization structure is consistent with international best practice when forming system standards.

The need “for adoption of a standardized tool for communication, coordination and cooperation between the subjects of the Crisis Management System (CMS) during a declared crisis situation” was realized after extended wildfires in 2007. In response, institutions held a number of exercises to draw up plans and internal SOPs (Republic of Macedonia CMC 2015). Since 2016, the CMC has been working with the Advanced Regional Civil Emergency Coordination Pilot (ARCECP)—a NATO Science for Peace and Security project—to introduce the Next Generation Incident Command System. The goal is “to introduce, iteratively modify and deploy an open platform for incident response that can interoperate with existing systems, function in areas of disadvantaged communications, and leverage community-driven improvements and applications” (NATO 2016b). The management system is expected to facilitate coordination among responders and introduce a unified command structure. In the absence of central policy direction, responding agencies have mainly been working according to their own systems.

Indicator 5.1.2: Flexible and Scalable Incident Organization Structure

Rationale given by the R2R diagnostic: A flexible and scalable response structure allows for emergency incident flexibility and promotes user familiarity through a common structure for multiple incident types. The system should apply to any incident regardless of cause, size, location, or complexity. This allows various organizations and agencies to work together in a predictable, coordinated manner.

Although it is too early to assess a system that is not yet fully in place, the NICS is aimed at being flexible and scalable and at prioritizing response options. The fact that NICS is also in the process of implementation in neighboring countries (like Bosnia and Herzegovina, Croatia, and Montenegro) enhances the appropriateness of the system. The EU peer review report noted the need for better streamlining and training of the teams, and an opportunity for more systematic scaling-up procedures. In addition, it noted a need to differentiate “between local disaster response teams, regional teams and one national team. Depending on the form and scope of the disaster, additional layers could be activated as needed, from local to national” (EU Civil Protection 2018). The R2R diagnostic identified the absence of an established network of voluntary fire departments, impeding coordination, exchange of good practices, and an overview of the available personnel and equipment. The Macedonian Red Cross aligns itself closely with the official structure. In its annual action plan (Red Cross of the Republic of North Macedonia 2019), the organization indicated that it will disseminate the country’s SOPs for disaster response, given their practical application at the local level.

Indicator 5.1.3: Training and Implementation Resources

Rationale given by the R2R diagnostic: An incident organization structure consistent with internationally recommended practices should be supported by resources, including reference materials, training materials, and exercise scenarios that allow responders to practice in a consequence-free environment. These reference and training resources should be provided to emergency responders as well as coordinators who may be working in emergency operations centers.

In theory, the NICS will include SOPs, checklists, and decision-making matrices, but these have not yet been used in practice. At this moment, there are no training materials or experience-based instructions available for the structure as a whole, but personnel are being trained and NICS is being piloted locally. As referred to under Criterion 4.2, technological interoperability does not fully exist due to the use of various communication systems, and it will be necessary to establish standards concerning which equipment to procure. Standards and guidelines are yet to be drafted.

Indicator 5.1.4: Roster of Trained Personnel and Database of Common Response Resources

Rationale given by the R2R diagnostic: Emergency response agencies are trained and equipped to manage a particular threshold for both number of simultaneous events and event complexity/intensity. When these thresholds are exceeded, the responsible agency must have access to additional resources to effectively manage the emergency. Sharing of personnel and resources through a formal process can ensure collective preparedness of response agencies, help manage cost, and improve response efficiency. This personnel and resource sharing begins with shared understanding of what supports may be available to responding agencies when they are needed most.

In North Macedonia, the local agencies are the first to respond; central institutions come in to provide support when the first-level systems are overwhelmed. However, a shared understanding of what support might be available, or a roster of trained and experienced personnel, does not exist. The decision about which type of support to send in is made at the central level; the municipal authorities do not request specific functions according to the situation at hand. Moreover, the country lacks a database of available common resources—a problem compounded by the existence of parallel systems in country. The lack of appropriate coordination and the current sense of competition between central agencies would make any agreements for sharing personnel and rescues nearly impossible. There are cases when a single person is nominated as a specialist/expert in several stakeholder institutions, even though in practice it is not possible for a single individual to serve in multiple capacities. No form of advisory council or board exists, either in ordinary circumstances or emergency situations.

Criterion 5.2: Training and Knowledge Building

Indicator 5.2.1: Training program in place

Rationale given by the R2R diagnostic: Those within an organization who may be involved in planning for and responding to an emergency should be appropriately prepared. They require a clear understanding of roles and responsibilities and how they fit into the wider emergency preparedness and response system. Training builds capability and capacity for emergency response incidents. Training should also extend beyond those employed by the jurisdiction and include contractors and the staff of voluntary organizations who might support emergency planning or response.

A comprehensive training and exercise program does not currently appear to be in place. Rather, various activities occur within the several agencies and are supported by international partners, though they are not necessarily coordinated. Funding was said to be the main hindering factor for systematic and joint trainings. In the City of Skopje, opportunities for training were considered to be too few to ensure emergency responders' readiness. Occasional trainings take place; firefighters, for example, have additional training on top of their six-month basic learning program. The main source for learning remains daily practice on the job, rather than organized and directed trainings. The Public Enterprise on Macedonian Forests provides trainings for its staff in cooperation with the PRD and the Faculty of Forestry of the University of Skopje. More training on road traffic collisions is needed for volunteer firefighters. Traditional emergency responders, including the police and armed forces, have their own trainings (mostly for emergencies, though almost none for search and rescue in disaster management); but training programs for nontraditional responders do not exist.

State organizations cooperate with private sector companies for specific training and exercises. Under the Law on Crisis Management, public enterprises and trade companies are obliged to participate in training and exercises on how to handle crisis situations. In interviews, respondents said that the private sector was better prepared than the public because of more frequent trainings.

Indicator 5.2.2: Availability of Qualified Trainers and Appropriate Training Materials

Rationale given by the R2R diagnostic: A robust training program offers multiple methods of training, including off-site, on-site, instructor-led classroom training, self-directed, hands-on study, etc. While online training for basic concepts may be easy to deliver for those whose primary role is not emergency preparedness or response, in-person training coupled with workshop activities is more meaningful for participants and more easily absorbed. Having a variety of training methods is important to ensure comprehensive understanding of the material.

In addition to not being systematic, the training programs are not robust. This means that training material and the associated activities are not updated according to the latest developments, technologies, and equipment. For example, the voluntary firefighter association from Sveti Nikole provides training for water-based emergencies, relying on the experience of trainers from the UK firefighter services (Operation Florian), but the training requires updates, in particular on the use of breathing apparatuses. EP&R actors interviewed cited a need to better organize best practices and increase institutional memory throughout the entire EP&R system, including lessons from the current COVID-19 situation, to inform future trainings. In the past, knowledge management has suffered from the dualism in the EP&R system, whereby different agencies identified different lessons learned (EC 2012). Another issue is the limited number of qualified trainers in institutions (except the Red Cross). In particular, hazmat experts are needed to educate more staff on how to respond to this type of emergency. There are hazmat experts in the academic world, and the country's academic institutions, such as the Military Academy and Faculty of Security–Skopje, have programs on disaster management. However, the programs are more academic than operational, and coordination with such programs depends mainly on private relations. The original aim of the programs was for some students to take jobs within the EP&R system upon graduation, but the actual flow of students into operational bodies has been limited due to the current human resources policy in public and state administration.

Indicator 5.2.3: Formal Assessment Program

Rationale given by the R2R diagnostic: Regular program evaluation is critical to ensuring a comprehensive and effective training program. Feedback should be obtained from all participants to determine training and instructor effectiveness as well as knowledge or skill acquisition. Analyzing this feedback can identify weaknesses in the training program and aid in closing critical learning gaps that may otherwise compromise effective emergency response operations.

Basic in-class testing and participant feedback are in place for training activities, but (in Skopje, for example) more extensive testing of knowledge would be welcome in the courses. Through bilateral and EU cooperation, efforts have been made to evaluate the training materials and instructor techniques based on international best practices, but more evaluations are needed. Some respondents indicated that trainings should include more professional expertise and know-how from abroad. It should be noted that the Macedonian Red Cross and Mountain Rescue train according to IFRC and ICAR recommendations respectively (though they would like to expand their training to more volunteers). In the past, USAR-level training was organized in the context of Operation Florian. Since trainings are not part of an actual program, the response outcomes are not monitored.

Indicator 5.2.4: Planning and Tracking of Personnel Development

Rationale given by the R2R diagnostic: When responder agencies formally and deliberately plan personnel development and track its results, agency-specific capacity can be known. This information provides agencies with heightened awareness and advance knowledge of when additional resources or special emphasis may be required to ensure they have the capacity to continually meet their responsibilities.

In the City of Skopje, there is no official development plan in place for firefighters once they complete their education and enter service. A system of certificates and a development program exist but are not effectively used. Personnel development is not a priority, and the appointment of operational staff is at times influenced by political decisions.

In the police forces, on the other hand, staff are evaluated on knowledge and skills. Follow-up procedures to address unsatisfactory behavior exist in all institutions.

Criterion 5.3: Exercises and Drill

Indicator 5.3.1: Comprehensive Exercise Program

Rationale given by the R2R diagnostic: A formal and functional exercise and drill program enables testing of response plans and application of training in a consequence-free environment. Exercises allow for team building within and among responder agencies, especially when exercises and drills are collaboratively designed and delivered. Exercises should reflect appropriate jurisdictional risks and increase in complexity and difficulty as participants and their agencies increase their operational response capacity.

The PRD is the lead agency for scheduling, design, and delivery of technical support and monitoring exercises. In the last five years, it organized three exercises with the OKTA refinery (for fire prevention, with involvement of planes) and acted as host partner for two large-scale exercises within EU projects. In 2015, through an IPA project and in cooperation with the Union Civil Protection Mechanisms (UCPM) and IOM, the PRD organized an exercise for population care (emergency shelter) with the participation of 13 countries. Another exercise organized by PRD and UCPM dealt with flood management. From 2010 until the present, the PRD has taken part in all international exercises under the auspices of the EU and NATO and on the basis of bilateral issues. The City of Skopje had its last large-scale exercise for flood protection in 2015, organized within a DG ECHO (Directorate-General for European Civil Protection and Humanitarian Aid Operations)/UCPM project; more than 250 participants from various local EP&R stakeholders took part. Another large-scale exercise, organized with the support of WHO on the spreading of the Ebola virus, was carried out at the airport in 2014. WHO evaluated the exercise and determined how far the International Health Regulations were respected. The Macedonian Red Cross organizes an annual simulation exercise with the Ministry of Health. Occasionally, additional exercises are organized with the PRD or CMC. Indeed, most exercises in country are small in scale and ad hoc, even though most of the EP&R stakeholders include one or two large-scale exercises in their annual plans.

Indicator 5.3.2: Collaboration and Coordination

Rationale given by the R2R diagnostic: Collaborative and centrally coordinated exercises that involve multiple response agencies provide opportunities for collective learning that could otherwise be realized only during actual emergencies and disasters. Such exercises, while somewhat more complex, are also more reflective of real-world response operations, which tend to involve a variety of sectors and agencies.

A clear example of the further need for collaboration and coordination of exercises is the absence of joint Mountain Rescue Service–Ministry of Interior trainings to practice complicated rescue maneuvers in the airlifting of injured persons from the mountains. Helicopter pilots are not trained for this technical rescue and need to land their craft rather than rescue while in air. Police forces do practice jointly with fire brigades through simulations of wildfires. In addition, joint police and medical force exercises are regularly organized. There is room for more training and exercises at regional level with neighboring countries.

Indicator 5.3.3: Exercises Designed to Validate Response Plans

Rationale given by the R2R diagnostic: Evaluation is the key to a successful exercise. It is where all lessons learned and gaps are identified. An essential part of a successful evaluation process is ensuring objectives are developed based on plans and assessed jurisdictional risks. Clear and concise objectives are key factors that form evaluation criteria and performance measures. A post-exercise report on how to implement changes needs to be carefully documented, tracked, and used during annual work planning for following fiscal years.

The OKTA refinery organizes firefighter drills every second year. The last exercise, in July 2019, rehearsed the main type of risk—fires originating from the railway—with the objective of testing the response system. The exercise had participants from 17 state agencies, and reaction times were measured. The drill was evaluated, and lessons were learned about coordination between different actors. The use of various approaches and terminologies was evaluated in relation to the various participants. In the public sector, systematic and robust evaluation and analysis following drills and exercises is limited. Just before the 2007 forest fires, the coordination structure was tested in a national exercise and dealt with in a preemptive manner, in advance of the upcoming disaster. In 2011, a national tabletop exercise was organized to test the “SOPs for communication, coordination and cooperation amongst the crisis management system stakeholders, which included a HNS [host nation support] segment” (EC 2012).

Indicator 5.3.4: Robust Exercise and Drill Planning Process

Rationale given by the R2R diagnostic: Exercises can be difficult and time-consuming to develop. Personnel with multiple other duties may not prioritize development of complex field exercises with multiple stakeholders. Significant time and money must be dedicated to develop a robust and useful program. In many cases, large-scale operational exercises have been successful only with year-long planning, a dedicated budget, and experienced exercise planners. Smaller budgets are acceptable as long as the scale of the exercise equals that of the budget. For example, a multi-day, multi-stakeholder, 24/7 exercise would be challenging without the support of a dedicated design and delivery team.

Budgets for organizing exercises and drills are extremely limited, which influences the planning process. In the City of Skopje, for example, exercises are said to take place mainly on the job rather than as well-planned, strategic, and large-scale drills.

Criterion 5.4: International Support Coordination

Indicator 5.4.1: Agency Assigned to Coordinate International Support

Rationale given by the R2R diagnostic: Designating an agency to officially request disaster relief formalizes and streamlines the assistance request process and improves the speed and efficiency of international aid delivery following widespread and/or intensive emergencies and disasters. Improved capability enables the jurisdiction to make the best use of internationally accepted tools and resources. With this capacity, the jurisdiction can complete advanced planning to identify likely disasters and potential aid requirements. It is also better able to coordinate with international and humanitarian aid agencies as well as other levels of government.

The country has bilateral cooperation agreements and has established collaboration with UCPM, NATO, UNDP, JICA, OSCE (Organization for Security and Co-operation in Europe), and GIZ, among others (ECHO 2019). North Macedonia has established regional cooperation with other Western Balkan countries regarding natural hazards, for example with the Agency for Emergency Management in Kosovo (UNDP 2016b) and within the Disaster Preparedness and Prevention Initiative for South Eastern Europe (DPPI SEE).

The 2005 Law on Crisis Management regulates the participation of international organizations in the prevention, management, and early warning of an eventual crisis. However, the confusion originating from the legal system has operational consequences, and both PRD and CMC have responsibilities to coordinate international support. Whereas PRD is the focal point for the UCPM, CMC acts as liaison and sends/receives requests with NATO’s Euro-Atlantic Disaster Response Coordination Centre (EADRCC). In practice, the government Steering Group holds a pivotal role because it sanctions the actual decision for sending or receiving international teams and assistance. Currently, there are no comprehensive plans for coordination in place, and decisions are made ad hoc. Although experienced individuals do contribute to related decision-making, there is no database of their profiles. Nor is there a government agency assigned to coordinate with the UN Cluster System, although some agencies may have their own interface channels. For purposes related to the migration crisis, for example, international organizations such as IOM coordinate directly with relevant ministries on specific affairs. If incoming assistance is to be based on actual needs on the ground and coordination between donations is to take place, then political leaders should be better trained in the international EP&R system.

Indicator 5.4.2: Minimum Standard for Provision of Aid by International Groups

Rationale given by the R2R diagnostic: The accountable agency for coordinating international support should be aware of international standards that ensure service quality and consistency of aid during very complex and difficult times. Such standards provide formal procedures for collaborative decision-making, identify best practices, and enable performance monitoring and issue reporting. These standards also typically include minimum standards for documentation, an operational framework, and oversight to ensure outcomes are being met.

During the 2016 flash floods, the delivery of international assistance was delayed while the assessment was carried out and priority needs were identified (UNDP 2016b). However, coordination between the EU, the World Bank, and the UN is said to have worked well. EP&R actors in country are strongly aware of the need to follow EU standards for emergency preparedness and response. The PRD formally follows Sphere standards, but the standards are not adopted within legislation. The PRD has also contracted private companies to support national response in country, though not for international assistance. There are no processes to track and evaluate quality of international support. In 2012, the CMC identified the need for specific training for personnel dealing with international teams and for the creation of a pool of trained liaison officers (EC 2012).

Indicator 5.4.3: Functional Logistics System in Place to Receive International Support

Rationale given by the R2R diagnostic: In a post-disaster environment, tight communication and control will be required in order to carry out effective and reliable disaster relief coordination. To enable expedited and efficient movement of aid resources, the agency coordinating support should have agreements or memorandums of understanding established with warehouses, airports, and transportation entities before a disaster.

PRD follows the Host Nation Support Guidelines of the EU; however, no actual formal agreements are in place to handle and receive incoming disaster aid resources. In general, incoming EU relief personnel have visa-free status either as citizens from the EU or under some other bilateral agreement. Disaster items are in general exempt from customs duties. The country is part of the Tampere Convention for emergency ICT equipment; INSARAG (International Search and Rescue Advisory Group) guidelines are accepted, and drugs and narcotics can be imported as long as proper documentation is provided (EC 2012). There is an existing law on donations and sponsorship; these are legal responsibilities of the Ministry of Labor and Social Policy, Ministry of Health, and Public Revenue Office. Since the PRD has its own storage capacities, there are no agreements with private companies in place. During a self-assessment exercise in 2012, the CMC identified gaps in providing proper logistics support for international teams. In general, this support is provided to international teams after a period of self-sufficiency of three to seven days (EC 2012).

Indicator 5.4.4: Functional Logistics System in Place to Distribute International Support

Rationale given by the R2R diagnostic: The capacity to distribute aid resources that have been cached in advance of a disaster, or received immediately following a disaster, is vital to managing the consequences of the event and transitioning to recovery. In particular, determining how aid will be prioritized for distribution and identifying redundant distribution channels for remote and/or unreachable areas are important in advance planning.

The logistics system for the distribution of international support scores low. There is no government-supported process in place for the prioritization of disaster aid distribution and no formal agreements that include cost-recovery elements. Although PRD has agreements with the private sector, these do not cover distribution of aid resources. The Law on Protection and Rescue stipulates that PRD is to assist local communities in a recovery phase, but in practice this function has been executed by the Red Cross. There is a need for more training and experience in how to manage a complex logistics system under difficult circumstances.

Annex 2

Interview Overview

Date	Time	Institution	Contact
April 24	11:00	World Bank	Luan Aliu
	13:00	Protection and Rescue Directorate (PRD)	Valentina Atanasovska, Head of International Cooperation Department Admir Gorenča, Head of Regional PRD, City of Debar Marjan Dautov, Head of Regional PRD, City of Strumiča Toni Velinov, Head of Financial Department Milena Petroski, International Cooperation Department Iviča Naumovski, Head of Operations and Logistics Department
April 28	09:30	Crisis Management Center (CMC)	Urim Vejseli, Head of International Cooperation Department Duško Petrovski, Department for Cooperation and Coordination Igor Karafilovski, IT Department
April 29	10:00	Ministry of Transport and Communication	Ljubisha Jovanovski, State Advisor
		Ministry of Environment and Physical Planning	Ylber Mirta, Head of Water Management Department
		Public Enterprise on Macedonian Forests	Goran Stojkovski, Deputy Director
	13:00	City of Skopje	Mihajlo Ivanov, Head of Department for Protection and Rescue
April 30	15:00	United Nations Development Programme (UNDP) Office in Skopje	Anita Kodzoman, Program Officer, Head of Energy, Environment and Disaster Risk Management Unit
	13:00	National Coordinator for Disaster Risk Reduction	Pavle Trajanov, National Coordinator for Disaster Risk Reduction Verica Filipovska, Associate in the Unit for Technical, Operational and Logistical Support of the National Coordinator for the Implementation of the National Platform for Disaster Risk Reduction
	15:00	Voluntary Firefighting Association of the City of Sveti Nikole	Aleksandar Danev, Volunteer Firefighter Kiril Mihajlov, Association Member

Date	Time	Institution	Contact
May 4	10:00	Macedonian Red Cross	Ali Samet, Expert Associate in Program for Preparedness and Action in Case of Disasters, Head of Emergency Operations Center Aleksandar Stojanoski, Assistant Head of Emergency Operations Center
		Mountain Rescue	Antonio Dodeski, Head of Mountain Rescue Team of Red Cross in Ohrid and Project Manager of IPA CBC (Instrument for Pre-Accession Assistance Cross Border Cooperation) projects
	12:15	LEGIS	Jasmin Redžepi, Head
		Macedonian Youth Lawyers Association	Zoran Drangovski, Head
		International Organization for Migration (IOM)	Vanja Mirkovski
	14:15	Faculty of Security-Skopje, St. Kliment Ohridski University	Marina Malish Sazdovska, Full Professor
		Faculty of Philosophy, St. Cyril and Methodius University	Sergej Cvetkovski, Associate Professor, Institute for Security Defense and Peace
		Military Academy	Mitko Bogdanoski, Full Professor Nikola Kletnikov, Staff Metodija Dojcinovski, Full Professor and Head of Department for Crisis Management
May 5	10:00	OKTA Skopje	Dr. Zoran Dorevski, Head of Safety and Security Department Monika Trendafilovska, Security Specialist
	12:00	Ministry of Interior	Boris Palcheski, Bureau for Public Security, Unit for Strategic Planning
	14:00	European Union Delegation	Maja Bogdanoska-Zendelska, Environment Team

Annex 3

References and Consulted Documents

Avon Fire and Rescue. 2012. “Firefighters Teach Macedonian Colleagues Top Techniques.” December 3, 2012. Accessed July 16, 2020. <https://www.avonfire.gov.uk/all-areas/843-firefighters-teach-macedonian-colleagues-top-techniques>.

City of Skopje and EPICURO (European Partnership for Urban Resilience). 2019. Local Adaptation Strategy Plan of the City of Skopje: Resilience Climate Change Adaptation Plan. Skopje.

EC (European Commission). 2012. Analytical Study on Host Nation Support. Civil Protection Cooperation for the Candidate Countries and Potential Candidates Lot 3 EuropAid/128936/C/SER/Multi. Brussels.

EC (European Commission). 2019. Commission Staff Working Document, North Macedonia 2019 Report. (COM (2019) 260 final). Brussels. <https://op.europa.eu/en/publication-detail/-/publication/08f50dd7-8221-11e9-9f05-01aa75ed71a1/language-en>.

ECHO (European Civil Protection and Humanitarian Aid Operations). 2019. “Factsheet: North Macedonia Overview of the National Disaster Management System.” October 14, 2019. https://ec.europa.eu/echo/what/civil-protection/disaster-management/north-macedonia_en.

EU (European Union) Civil Protection. 2018. Peer Review–Report North Macedonia 2018. European Commission, Brussels.

Europa RE. 2019. “ERe Signed Two Grant Agreements for North Macedonia and Serbia with InsuResilience Fund.” November 29, 2019. <http://www.europa-re.com/ere-signed-two-grant-agreement-for-n-macedonia-and-serbia-with-insuresilience-fund>.

FAO (Food and Agriculture Organization of the United Nations). 2019. “North Macedonia and FAO. Partnering to Achieve Sustainable Agricultural and Rural Development.” Budapest.

Fire Aid. n.d. “Capacity Building of Municipal Fire Services in Macedonia.” Accessed July 16, 2020. <https://fire-aid.org/fireaid-project/capacity-building-of-municipal-fire-services-in-macedonia/>.

GFDRR (Global Facility for Disaster Reduction and Recovery) and GSURR (Global Practice – Social, Urban, Rural and Resilience). 2017. “A Framework for Ready2Respond: The Emergency Preparedness and Response Thematic Group of the World Bank.” <https://www.gfdr.org/en/publication/ready2respond-framework-emergency-preparedness-and-response>.

Gjurovski, Marjan, and Mende Mocanoski. 2019. “Disaster Risk Reduction: Implementation Module in Republic of Northern Macedonia.” Faculty of Security, Skopje. https://www.academia.edu/40241617/Disaster_Risk_Reduction_Implementation_module_in_Republic_Of_North_Macedonia.

Hallegatte, Stephane, Adrien Vogt-Schilb, Mook Bangalore, and Julie Rozenberg. 2017. Unbreakable: Building the Resilience of the Poor in the Face of Natural Disasters. Climate Change and Development Series. Washington, DC: World Bank. <https://openknowledge.worldbank.org/handle/10986/25335>.

INFORM (Index for Risk Management). 2020. “Country Profile North Macedonia.” <https://drmkc.jrc.ec.europa.eu/inform-index/Portals/0/InfoRM/CountryProfiles/MKD.pdf>.

JICA (Japan International Cooperation Agency) and Crisis Management Center. 2014. “Integrated System for Prevention and Early Warning of Forest Fires in the Republic of Macedonia/Macedonian Forest Fire Information System (MKFISS).” Skopje.

Lazarevski, Pande. 2009. “National Platform of the Republic of Macedonia for Disaster Risk Reduction.” PowerPoint presentation, Skopje, May 5, 2009.

Lazarevski, Pande. 2010. "Risk Assessment and the National Platform for Disaster Risk Reduction." PowerPoint presentation, Skopje.

Macedonian Geographical Society. 2015. Proceedings. Fifth Congress of Geographers of the Republic of Macedonia, Skopje.

MARRI (Migration, Asylum, Refugees Regional Initiative) and CRS (Catholic Relief Services). 2017. Challenges in the Identification and Protection of Vulnerable Individuals and Victims of Gender Based Violence and Trafficking in Human Beings in the Context of Migration Crisis: Assessment Report. Skopje: MARRI. <http://marri-rc.org.mk/wp-content/uploads/2017/11/Assessment-report.pdf>.

MOEPP (Ministry of Environment and Physical Planning Republic of Macedonia). 2014. Third National Communication on Climate Change. Skopje. <https://unfccc.int/resource/docs/natc/mkdnc3.pdf>.

NATO. 2016a. "Enhancing Civil Emergency Response in the Western Balkans." November 29, 2016. https://www.nato.int/cps/en/natohq/news_138304.htm?selectedLocale=en.

NATO. 2016b. "SPS Advanced Regional Civil Emergency Coordination Project in the Western Balkans. (ARCECP) SPS G4968." November 28, 2016. https://www.nato.int/nato_static_fl2014/assets/pdf/pdf_2016_11/20161128_161128-sps-arcepc.pdf.

OKTA. n.d. "Crisis Management. Company Emergency Response Team." (Document shared with PPI in June 2020).

Red Cross of the Republic of North Macedonia. 2019. Annual Plan of Action 2019. Skopje.

Red Cross of the Republic of North Macedonia. 2020. National Response Plan COVID-19 Outbreak. Skopje.

Republic of Macedonia CMC (Crisis Management Center). 2009. National Platform for Disaster Risk Reduction of the Republic of Macedonia. Skopje.

Republic of Macedonia CMC (Crisis Management Center). 2010. National Platform of the Republic of Macedonia for Disaster Risk Reduction. 3rd ed. Skopje.

Republic of Macedonia CMC (Crisis Management Center). 2015. National Progress Report on the Implementation of the Hyogo Framework for Action (2013–2015). Skopje.

Republic of North Macedonia. 1994. "Law of Macedonian Red Cross." Official Gazette of Republic of Macedonia, No. 41.

Republic of North Macedonia. 2004a. "Law on Fire Prevention." Official Gazette of Republic of Macedonia, No. 67.

Republic of North Macedonia. 2004b. "Law on Protection and Rescue." Official Gazette of Republic of Macedonia, No. 36.

Republic of North Macedonia. 2004c. "Law on the Territorial Organization of Local Self-Government in the Republic of Macedonia." Official Gazette of Republic of Macedonia, No. 55.

Republic of North Macedonia. 2005. "Law on Crisis Management." Official Gazette of Republic of Macedonia, No. 29.

Republic of North Macedonia. 2006. Methodology for the Content and Method of Hazard Assessment and Planning of Protection and Rescue. Skopje.

Republic of North Macedonia. 2007. "Decision for Assessing the Threat from Natural Disasters, Epidemics, Epitotics, Epitofies and Other Incidents on the Territory of the Republic, No. 19-4911/1." Skopje.

Republic of North Macedonia. 2009. "National Strategy for Protection and Rescue." Official Gazette of Republic of Macedonia, No. 23.

SDC (Swiss Agency for Development and Cooperation). 2017. Swiss Cooperation Strategy Macedonia 2017–2020. Bern.

Skopjeinfo. 2018. "Photo: Skopje Ring Road under Water and Mud Again." May 6, 2018. <https://skopjeinfo.mk/foto-skopskata-obikolnica-povtorno-pod-voda-i-kal>.

UNDP (United Nations Development Programme). n.d. "EU Floods Recovery Programme." Accessed July 16, 2020. <https://www.mk.undp.org/content/north-macedonia/en/home/projects/EU-Floods-Recovery-Programme.html>.

UNDP (United Nations Development Programme). 2015a. “Climate Change & Disaster Risk Reduction Snapshot: The Former Yugoslav Republic of Macedonia.” Istanbul.

UNDP (United Nations Development Programme). 2015b. “DHL and UNDP Help to Refine Disaster Readiness at Airports Managed by TAV Macedonia.” April 20, 2015. Accessed July 16, 2020. <https://www.preventionweb.net/organizations/6133>.

UNDP (United Nations Development Programme). 2016a. “Building Resilient Communities—A Top Priority for the EU Flood Recovery Programme: New 7-Million-Euro Project to Help Mitigate Flood Risks.” April 4, 2016. Accessed July 16, 2020. <https://www.mk.undp.org/content/north-macedonia/en/home/presscenter/pressreleases/2016/04/04/building-resilient-communities-a-top-priority-for-the-eu-flood-recovery-programme.html>.

UNDP (United Nations Development Programme). 2016b. “Project Document: Response to Flash Floods in Skopje and Tetovo.” Skopje.

UNDP (United Nations Development Programme). 2017a. “After the Floods—Building Back Better in the Strumica River Basin.” February 24, 2017. Accessed July 16, 2020. <https://www.mk.undp.org/content/north-macedonia/en/home/presscenter/articles/2017/02/24/after-the-floods-building-back-better-in-the-strumica-river-basin.html>.

UNDP (United Nations Development Programme). 2017b. “Building Back Better the Lipa Dam.” October 2, 2017. Accessed July 16, 2020. <https://www.mk.undp.org/content/north-macedonia/en/home/presscenter/articles/2017/10/02/building-back-better-the-lipa-dam-.html>.

United Nations Country Team. 2016. “Partnership for Sustainable Development: United Nations Strategy for 2016–2020.” Skopje. https://www.unece.org/fileadmin/DAM/operact/Technical_Cooperation/Delivering_as_One/UNDAF_country_files/UNDAF_files_2015-2020/Macedonia-UNDAF-2016-2020.pdf.

Volunteer Fire Department Sveti Nikole, Republic of North Macedonia. 2020. Report. Sveti Nikole.

WHO (World Health Organization). 2019. Joint External Evaluation of IHR Core Capacities of the Republic of North Macedonia. Mission Report 11–15 March 2019. Geneva.

