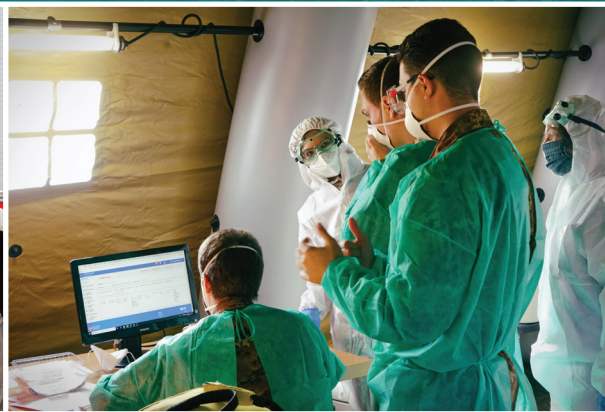




# READY <sup>2</sup> RESPOND

## Country Report

### Emergency Preparedness and Response Assessment



# Serbia



**GFDRR**  
Global Facility for Disaster Reduction and Recovery



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# Abbreviations

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<b>APSFR</b>	Areas of Potentially Significant Flood Risk
<b>DMIS</b>	disaster management information system
<b>DPPI SEE</b>	Disaster Preparedness and Prevention Initiative for Southeastern Europe
<b>DRIS</b>	disaster risk information system
<b>DRM</b>	disaster risk management
<b>DRR</b>	disaster risk reduction
<b>EM</b>	emergency management
<b>EOC</b>	emergency operations center
<b>EP&amp;R</b>	emergency preparedness and response
<b>EU</b>	European Union
<b>FRU</b>	Fire and Rescue Unit
<b>GDP</b>	gross domestic product
<b>GIS</b>	geographic information systems
<b>GIZ</b>	German Agency for International Cooperation
<b>GSS</b>	Mountain Rescue Service
<b>HQ</b>	headquarters
<b>ICT</b>	information and communication technology
<b>IFRC</b>	International Federation of Red Cross and Red Crescent Societies
<b>IPA</b>	Instrument for Pre-Accession Assistance
<b>JICA</b>	Japan International Cooperation Agency
<b>LGU</b>	local government unit
<b>MoI</b>	Ministry of Interior
<b>NDRMP</b>	National Disaster Risk Management Program
<b>NEMH</b>	National Emergency Management Headquarters
<b>NGO</b>	nongovernmental organization
<b>NSDI</b>	national spatial data infrastructure
<b>OSCE</b>	Organization for Security and Co-operation in Europe
<b>PDNA</b>	Post-Disaster Needs Assessment
<b>PFRA</b>	Preliminary Flood Risk Assessment
<b>PIMO</b>	Public Investment Management Office
<b>PPI</b>	Prepared International
<b>PWMC</b>	Public Water Management Company
<b>R2R</b>	Ready2Respond
<b>RGA</b>	Republic Geodetic Authority

<b>SCPU</b>	Specialized civil protection units
<b>SCTM</b>	Standing Conference of Towns and Municipalities
<b>SEM</b>	Sector for Emergency Management
<b>SOP</b>	standard operating procedure
<b>UCPM</b>	Union Civil Protection Mechanism
<b>UN</b>	United Nations
<b>UNDP</b>	United Nations Development Programme
<b>UNDRR</b>	United Nations Office for Disaster Risk Reduction
<b>VFF</b>	voluntary firefighter
<b>WASH</b>	water, sanitation, and hygiene

# Executive Summary

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In 2021, the World Bank engaged Prepared International (PPI) to support Serbia's disaster risk management development by providing an assessment of current national emergency preparedness and response (EP&R) capacities. In response, country-specific assessments of EP&R capacity in Serbia were generated based on the Ready2Respond (R2R) diagnostic methodology. Based on these findings, PPI identified priority EP&R investments at national level. The investments are included in a separate report; this report presents the assessment of Serbia's EP&R capacities.

The diagnostic is designed to be an objective, data-driven foundation to engage country counterparts on EP&R development projects. The methodology builds on five core components: legal and institutional accountability, information, facilities, equipment, and personnel. These components are further divided into 18 criteria, 72 indicators, and 360 attributes in total. Serbia achieved an overall score of 180 out of 360. Scores for Serbia's EP&R system differ considerably across criteria and indicators, with the lowest scores for information management systems, geomatics, and training centers, and the highest scores for emergency social services, community engagement, logistics warehouses and response stations, exercises and drills, and international support coordination. The R2R diagnostic facilitated the identification of several concrete key investment opportunities that are expected to improve the EP&R system overall.

The EP&R system in Serbia meets the requirements that allow for a functional response to both smaller and larger impacts. Key informant interviews indicated a strong ability to overcome shortages in data and capacity when the circumstances required swift action and scaling up of response efforts. However, the scoring also shows that the EP&R system could be significantly improved; in particular, greater data availability would help create operational awareness during response. A strong aspect of the response system is the organization of the emergency services within the Sector for Emergency Management (SEM) of the Ministry of Interior. SEM's inclusion of a substantial local presence allows for well-coordinated deployment of resources. While strong in terms of training programs and exercises and drills, the system could benefit from adding one or more training facilities to support multi-agency training, coordination workshops, and simulation exercises. Equipment shortages were identified, but the assessment recommends fundamentally assessing the equipment needs to meet predetermined response criteria. Currently, the system's capabilities implicitly derive from the availability of facilities, equipment, and personnel; they do not stem from an analysis of minimal needs required to meet emergency response performance indicators aligned with current and future risks. Putting such indicators in place would allow for a minimal capacity needs assessments to be carried out; for strategic developments to be determined, prioritized, and pursued; and ultimately for the system to move toward a targeted preparedness and response level.

The assessment methodology is very precise in its definition of criteria and indicators. As a result quantitative scorings on EP&R indicators might be low, while significant positive developments have been gained over the recent years. In the report these positive developments are articulated in the text, for example on the topics of information management and training facilities. The complementary text related to quantitative scorings therefore brings important nuances. In addition, a low score on an EP&R indicator does not necessarily imply that immediate development action is required. The system might currently function adequately, but not as envisioned by the EP&R rationale and methodology for sustained development. It is also important to note that the scorings are unweighted, meaning that recent development gains, existing visions for development, and the importance for systemic change to the EP&R system, are not reflected in the quantitative rankings. The recommendations however do take into account development context and potential for strengthening the functioning of the system. The recommendations and related investment opportunities are based on international practices and aim to inspire debate in Serbia on EP&R development priorities and concrete investment planning.

**Table 1** Suggested investment opportunities

No.	Project	Cost estimate (US\$)	Component
1	Complete and fully implement the legislative framework with emphasis on missing bylaws	775,000	Legal and institutional accountability
2	Implement the legislation and arrangements to secure critical infrastructure	150,000	Legal and institutional accountability
3	Implement an information campaign on risks and insurance	2,620,000	Information
4	Further develop forecast and early warning systems	15,940,000	Information
5	Develop and implement DMIS and geomatics	2,232,000	Information
6	Establish national HQ	10,400,000	Facilities
7	FF response stations throughout Serbia	8,000,000	Facilities
8	Establish a multi-agency training center	11,755,000	Facilities
9	Invest in a network of predetermined shelter locations	3,190,000	Facilities
10	Update and support the EMS system in the country	1,560,000	Equipment
11	Establish and strengthen a comprehensive radio communication system	1,060,000	Equipment
12	Assess equipment needs / procure equipment	40,200,000	Equipment
13	Make incident coordination more efficient by implementing a system like NICS	3,120,000	Personnel
14	Establish and strengthen a comprehensive interagency training system	920,000	Personnel
15	Conduct a train-the-trainers program for key personnel	375,000	Personnel
16	Conduct joint training sessions for police helicopter operators and the mountain rescue	600,000	Personnel
<b>TOTAL INVESTMENTS</b>		<b>US\$102,897,000</b>	



# Introduction

Serbia has experienced significant development over the last 15 years. The per capita gross domestic product (GDP) in 2020 amounted to US\$7,666.<sup>1</sup> In January 2014, Serbia opened membership talks with the European Union (EU). That year, Serbia's per capita GDP was US\$6,181; its economy had been significantly affected by the impact of the international financial crisis.<sup>2</sup> The level of real GDP in 2014 remained at 1.9 percent below its 2008 value. In 2022 Serbia ranks 117 out of 191 on the EU INFORM index and has some of the highest levels of disaster exposure and vulnerability among Western Balkan countries.<sup>3</sup> The risks are not equal across its entire territory and vary by type of hazard, exposure, vulnerability, and coping capacity. However, floods are the main hydrometeorological hazard in the country.

Serbia is exposed to multiple types of natural hazards, including floods, droughts, earthquakes, and landslides. The 2020 flood risk assessment identified 115 towns and municipalities (home to about 5.5 million people, or approximately 75 percent of the total population of Serbia) as exposed to potential flooding.<sup>4</sup> The total area expected to be flooded by a 100-year flood amounts to 4,135 km<sup>2</sup>; an estimated 1.15 million people would be directly affected. As a comparison, the population directly affected by a 1,000-year return period flood is estimated at 1.4 million people.<sup>5</sup> The total damage from drought is estimated at US\$500 million per year (1.4 percent of current GDP). Flooding is a recurring event across all of Serbia.<sup>6</sup> Between 1980 and 2019, the main risks were forest fires (26 percent of all disasters), floods (24 percent), fires (14 percent), and hailstorms (11 percent). Concerning social inclusion and protection, in 2017, 7.2 percent of the population were living in absolute poverty (7.3 percent in 2016). According to the BEWARE project, an estimated 30 percent of the country is at risk of landslides.<sup>7</sup> Landslides are among the most dangerous natural threats to human lives and property, especially given dramatic climate change effects on the one hand and urban sprawl and land consumption on the other. The usual landslide triggers are floods and high-yield rainfall; both were evident in the catastrophic Cyclone Tamara episode that struck Serbia and surrounding countries in May 2014.

The extraordinary rainfall of May 2014 affected 1.6 million people (22 percent of the total population). The total value of the disaster impacts was estimated at €1.7 billion, equivalent to 4.8 percent of Serbia's GDP. According to the Post-Disaster Needs Assessment (PDNA), the energy and mining sectors received the most extensive damage (32 percent of total disaster effects), followed by agriculture (15 percent of total disaster effects) and housing (15 percent of total disaster effects).<sup>8</sup> The total construction costs of 254 new houses was equal to the cost of insurance coverage against floods for 529 years.

<sup>1</sup> World Bank data, 2020, <https://data.worldbank.org/indicator/NY.GDP.PCAP.CD?end=2020&locations=%20RS-%20RS&start=1995&view=chart>.

<sup>2</sup> World Bank Group, "Disaster Risk Finance Country Note: Serbia," World Bank, Washington, DC, 2016, <https://openknowledge.worldbank.org/handle/10986/24405?locale-attribute=es>.

<sup>3</sup> Disaster Risk Management Knowledge Centre (DRMKC)-INFORM, "Country Risk Profile," 2022, <https://drmkc.jrc.ec.europa.eu/inform-index/INFORM-Risk/Country-Risk-Profile>.

<sup>4</sup> Global Facility for Disaster Reduction and Recovery, Government of Serbia, and World Bank, "Flood Hazard and Risk Mapping: Component 2 of Serbia National Disaster Risk Management Plan (NDRMP)," Washington, DC, World Bank Group, 2021, <http://documents.worldbank.org/curated/en/264191614958069685/Flood-Hazard-and-Risk-Mapping-Component-2-of-Serbia-National-Disaster-Risk-Management-Plan-NDRMP>.

<sup>5</sup> World Bank, "Implementation Status & Results Report: Disaster Risk Management DPL-CAT DDO (P157489)," October 5, 2020, <https://documents1.worldbank.org/curated/en/990031601936820036/pdf/Disclosable-Version-of-the-ISR-Disaster-Risk-Management-DPL-CAT-DDO-P157489-Sequence-No-05.pdf>.

<sup>6</sup> World Meteorological Organization, *Strengthening Multi-Hazard Early Warning Systems and Risk Assessment in the Western Balkans and Turkey: Assessment of Capacities, Gaps and Needs* (Geneva: WMO, 2012).

<sup>7</sup> The overall aim of the BEWARE project is to standardize a post-event landslide database, closely involve the 27 municipalities affected by landslides in May 2014, and prepare them to cope with catastrophic events in the future. This will lead to more secure, better-prepared, and more resilient communities in western, central, and eastern Serbia, which seem to be Serbia's most fragile regions in relation to changing climate conditions.

<sup>8</sup> Government of Serbia, United Nations, European Union, and World Bank, "Serbia Floods 2014," [https://www.ilo.org/wcmsp5/groups/public/---ed\\_emp/documents/publication/wcms\\_397685.pdf](https://www.ilo.org/wcmsp5/groups/public/---ed_emp/documents/publication/wcms_397685.pdf).

In December 2014, the government adopted the National Disaster Risk Management Program (NDRMP), pursuant to Conclusion Number 217-16233/2014-1 of December 19, 2014.<sup>9</sup> The goal was to develop an adequate, long-term disaster risk management (DRM) system in Serbia as the basis for cooperation among different institutions, as well as the basis for their joint work on risk reduction and efficient response to disasters.

In the past seven years, Serbia has developed and established several legislative and policy documents to transition from reactive emergency response toward a proactive disaster risk reduction (DRR) approach and in this way build the resilience of communities to current and future external shocks and stresses. Following the adoption of the NDRMP in 2014, Serbia adopted the Action Plan for its implementation.<sup>10</sup> In 2018, the Law on disaster risk reduction and emergency management was adopted. Main goal of the Law is the comprehensive standardization of preventive measures and activities to reduce the risk of disasters, effective response in case of natural and other disasters and more efficient elimination of their impact, to ensure recovery and normalization of living and working conditions in the affected area. The Law contains principles, and requires planning documents and measures and activities that should contribute to the most successful prevention of natural and other disasters, strengthening the resilience of individuals and communities to the consequences of natural and other disasters and raising preparedness to respond to natural and other disasters. Special emphasis was placed on the protection of vulnerable groups and gender equality, as well as on the establishment of public-private partnerships and the involvement of scientific organizations, associations and civil society organizations in the process of creating and implementing disaster risk reduction policy. The novelty is the emphasis on international cooperation, both in the field of prevention, and in the field of humanitarian aid and the provision or receipt of international aid for a joint response to the consequences of natural and other disasters. The law was adopted with the aim to enhance clarity and efficiency of the system, and with detailed in the application. In that way, it would enable all subjects of the protection and rescue system to know exactly their rights and obligations, as well as what consequences arise if the provisions of the law are not respected.

## The Ready2Respond Assessment

### Objectives

The objective of the assessment is to support Serbia's National DRM Program by providing an analysis of the country's EP&R capacity and to identify priority investments at the country level.

### Expected outcomes

The project findings will

- Identify the EP&R capacity development priorities
- Recommend EP&R capacity improvement opportunities linked to the project findings

## This Report

This report includes the assessment of Serbia's EP&R capacities based on the Ready2Respond (R2R) diagnostic methodology, as designed by the World Bank and executed by Prepared International (PPI). Data from a desk review and from key informant interviews conducted as part of an interview field mission generated findings on the five components of the diagnostic (legal and institutional accountability, information, facilities, equipment, and personnel), which include 18 criteria, 72 indicators, and 360 attributes in total.<sup>11</sup>

<sup>9</sup> Government of the Republic of Serbia, *National Disaster Risk Management Program*, adopted by the Government of the Republic of Serbia in the meeting held on December 19, 2014, Conclusion 05 No. 217-16233/2014-1. The English text is available at <https://reliefweb.int/report/serbia/serbian-national-disaster-risk-management-program>.

<sup>10</sup> Government of the Republic of Serbia, *Action Plan for the Implementation of the National Program for Disaster Risk Management (2017-2020)* [Ак, циони план за спровођење Националног програма управљања ризиком од елементарних непогода (2017-2020)], adopted by the Government of the Republic of Serbia in the meeting held on March 3, 2017, Conclusion 05 No. 217-1906/2017-1. The Serbian text is available at [http://www.obnova.gov.rs/uploads/useruploads/Documents/Zakljucak\\_Akcioni%20plan\\_Nacionalni%20program%20upravljanja%20rizikom\\_3.3.2017.pdf](http://www.obnova.gov.rs/uploads/useruploads/Documents/Zakljucak_Akcioni%20plan_Nacionalni%20program%20upravljanja%20rizikom_3.3.2017.pdf).

<sup>11</sup> The list of informants interviewed is in annex 2. A list of documents included in the desk review is in annex 3.

This report provides a summary of the EP&R capacities per component, as assessed by PPI in October 2021. 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 Serbia. A more detailed investment report is published separately.

## Country Risk Profile

Serbia has experienced a significant rise in disaster occurrences in recent years; 2,800 larger-scale calamities took place from 2000 to 2010. Floods, earthquakes, landslides, wildfires, and droughts are all common in the landlocked country. As weather-dependent sectors remain a backbone of the economy, the impact of natural events on the economy is enormous. The most frequent hazard is excessive rainfall, which can lead to flooding and landslides. Nearly one-third (30 percent) of the country's agricultural land and over 3,000 km of its roads are at risk from this hazard. In late May 2014, Serbia was affected by the most severe flooding and landslides in 120 years.<sup>12</sup> According to the Global Facility for Disaster Reduction and Recovery (GFDRR)-supported PDNA, the disaster affected over 1.6 million people and caused over US\$1.7 billion in damage, losses, and recovery needs. Earthquakes also pose significant risk.<sup>13</sup> Over 50 percent of the country is vulnerable to earthquakes of magnitude 7. The Government of Serbia has made progress in advancing DRM. Building on the results of the 2014 PDNA, the government developed a national framework to institutionalize DRM that focuses on disaster risk identification, risk monitoring, and early warning systems. The government also adopted the NDRMP to enhance Serbia's existing strategies for managing disaster risk.

In 2019, Republic of Serbia has adopted a National Disaster Risk Assessment methodology. The Assessment is regulated by the Instruction on the Methodology for the Preparation and Content of Disaster Risk Assessment and the Protection and Rescue Plan, which contains the basic postulates of the guidelines for the preparation of the European Commission's Risk Assessment. Process coordinator during implementation was the Ministry of the Interior - Sector for Emergency Management (SEM). By Government Decision, a multi sectorial project group for the preparation of the National Assessment was formed, in which all ministries and institutions whose expertise and knowledge could contribute to the preparation of the Assessment took part.

Identification of disaster hazards at the national and sub-national level is based on 12 hazards identified by the Instruction on the Methodology of development and content of disaster risk assessment and protection and rescue plan: earthquake; rockfalls, landslides and erosions; floods; extreme weather events; lack of drinking water; epidemics and pandemics; plant diseases; animal diseases; fires, explosions and open fires; technical technological accidents; nuclear radiological accidents and terrorism. Risk assessment at the national level processed 11 identified hazards, while terrorism was analyzed in separate document. The project team developed two scenarios for each of the identified hazards: a scenario of the most probable event and a scenario of the event with the most severe possible consequences.

## Methodology

The assessment made use of 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 (EP&R) systems and is informed by the encompassing City Resilience Program (CRP) and other World Bank resilience platforms."<sup>14</sup>

<sup>12</sup> Caritas Serbia, "Devastating Floods Hit Serbia—Caritas Serbia Responds," July 8, 2020, <https://caritas.rs/odgovor-caritasa-srbije-na-katastrofalne-poplave/?lang=en>.

<sup>13</sup> Government of Serbia, United Nations, European Union, and World Bank. 2014. "Serbia Floods 2014." [https://www.ilo.org/wcmsp5/groups/public/---ed\\_emp/documents/publication/wcms\\_397685.pdf](https://www.ilo.org/wcmsp5/groups/public/---ed_emp/documents/publication/wcms_397685.pdf).

<sup>14</sup> World Bank, "Ready2Respond: Rapid Diagnostic User Guide—Emergency Preparedness and Response Systems," November 2017, [https://www.gfdrr.org/sites/default/files/publication/R2R\\_RapidDiagnosticUserGuide\\_2017.pdf](https://www.gfdrr.org/sites/default/files/publication/R2R_RapidDiagnosticUserGuide_2017.pdf).

The diagnostic is designed to be an **objective, data-driven** foundation to engage country counterparts on emergency preparedness and response development projects. It builds on five core components of emergency preparedness and response (as illustrated in figure 1): (i) legal and institutional accountability, (ii) information, (iii) facilities, (iv) equipment, and (v) personnel. Each component is measured by a set of criteria that addresses an aspect of a functional EP&R system for a given country, and indicators have been developed to score each given criterion.

Data was gathered through a desk review of laws, policies, procedures and literature and reports. A listing of reports assessed can be found in Annex 4. Based on the desk review, a series of interviews in Serbia was prepared, prioritizing data gathering and key organizations. Although the international experts could visit Serbia for face to face interviews as Covid-19 restrictions were limited, the possibilities for group interviews were somewhat limited. Still many key informants were able to meet the assessment team and the cooperation was perceived to be very positive.

Triangulation of findings was executed in various ways. Conclusions of the desk reviews were checked for validity during the interviews. All indicators were discussed with a minimum of two informants. Additional documents were identified during the interviews and made available to complement data gathering and to reflect on findings. Any discrepancies in the interviews and documentation were discussed during a “closure of mission session” of four hours with representatives of SEM. In addition, SEM was given the opportunity to reflect on the assessment report and check its completeness and validity. This revision has led to various valuable additions and nuances in the report.

It is noted that during a short interviews mission of just five days, the opportunities to observe practices and interview representatives in various regions in the country is extremely limited. Since the local self-governments (LSGs) play an important role in the EP&R system in Serbia, the ability to observe any variations throughout the country is limited. Under the first R2R component of legal and institutional accountability preliminary conclusions of a LSG assessment are included. This assessment of eight LSGs is currently being executed on request of SEM via the World Bank.

Figure 1 Emergency Preparedness and Response System Core Components



Source: World Bank, "Ready2Respond: Rapid Diagnostic User Guide—Emergency Preparedness and Response Systems," November 2017, [https://www.gfdrr.org/sites/default/files/publication/R2R\\_RapidDiagnosticUserGuide\\_2017.pdf](https://www.gfdrr.org/sites/default/files/publication/R2R_RapidDiagnosticUserGuide_2017.pdf).

## Overall R2R Results

As indicated, the methodology comprises 360 attributes. These 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. Serbia has an overall score of 180. This means that 180 attributes of the EP&R system are currently in place, while 180 attributes are 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 2.

**Table 2** Average EP&R Component and Criterion Scores for Serbia

Component	Score (0 to 5)	Criteria	Score (0 to 5)
1 Legal and institutional accountability	2.75	1.1 Legislated accountability	2.25
		1.2 Financial preparedness	3.25
2 Information	1.63	2.1 Community engagement	4.25
		2.2 Early warning systems	2.25
		2.3 Information management systems	0.00
		2.4 Geomatics	0.00
3 Facilities	2.31	3.1 Emergency operations centers	3.00
		3.2 Training centers	0.00
		3.3 Logistics warehouses and response stations	4.00
		3.4 Shelters and open spaces	2.25
4 Equipment	2.81	4.1 Emergency social services	4.75
		4.2 Information and communications technology	1.75
		4.3 Hazard-specific response capacity	2.50
		4.4 Urban firefighting and technical rescue	2.25
5 Personnel	3.25	5.1 Incident organization structures	2.50
		5.2 Training and knowledge building	3.25
		5.3 Exercises and drills	3.75
		5.4 International support coordination	3.50

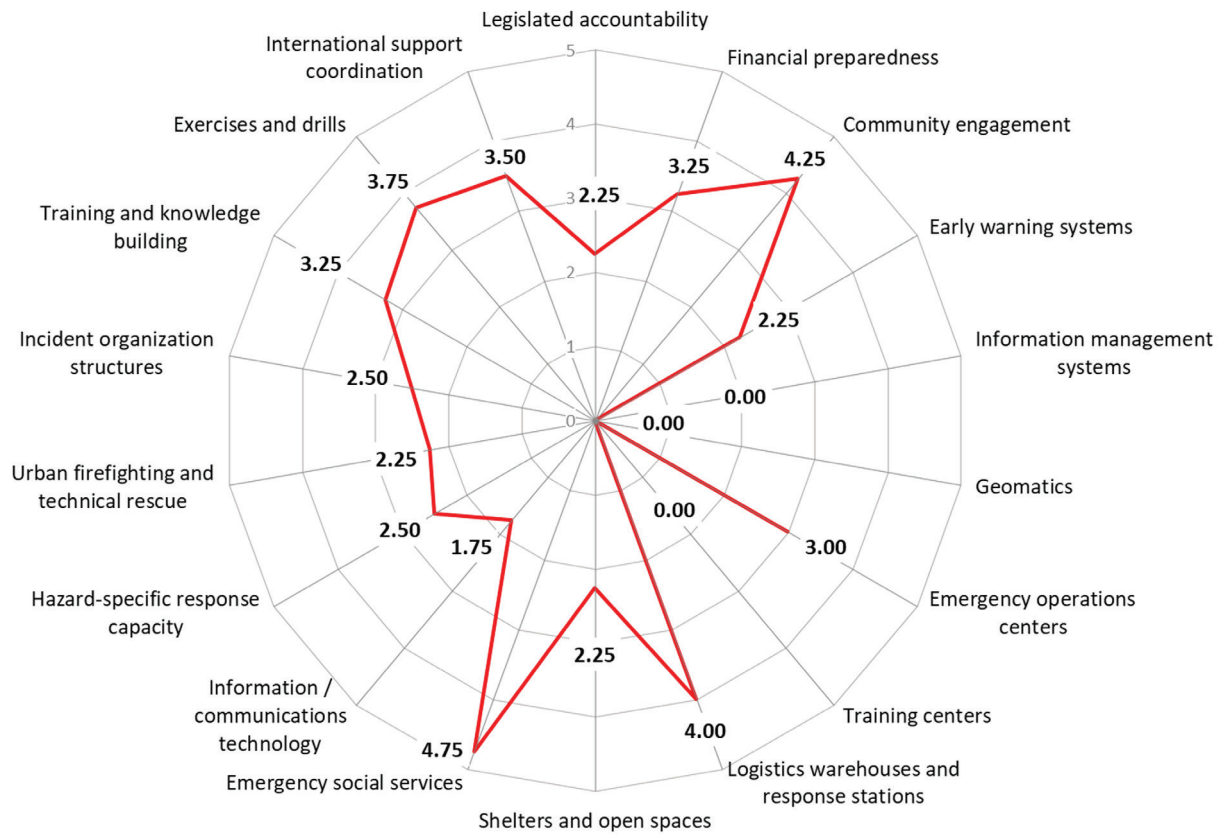
Source: R2R assessment findings.

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

Serbia's EP&R system displays considerable differences in scores across criteria and indicators, with the lowest scores for information management systems, geomatics, and training centers, and the highest scores for emergency social services, community engagement, logistics warehouses and response stations, exercises and drills, and international support coordination. It is noted that the methodology is very specific in the definition of the criteria. As an example, information management systems require to be integrated into one system, that can be accessed by all relevant agencies in the EP&R system. By Law this integration and information sharing as defined in the methodology is not a requirement in Serbia. Serbia over the recent years has made impressive developments in the Disaster Risk Information System and a Risk Register which are not reflected in the low score. Further integration of information and creating strong operational awareness during response for all agencies could be a development to consider. Also on training facilities the methodology leads to a low score. There is however a National Training Center for Emergency Management situated within the Sector for Human resources of the MoI. For the moment this facility does not have the capacity to function as a training facility for all emergencies and agencies, and it is outsourcing training to the relevant Fire Brigades. This is a solution that is functional. The development of a fully-fledged facility for all agencies, including training areas, classrooms and logging is mentioned in plans, but the implementation lags funding for construction, equipment and the required structural staffing.

The R2R diagnostic facilitated the identification of several concrete key investment opportunities that are expected to improve the EP&R system overall.

**Figure 2** Diagnostic Scores for Serbia



The EP&R system in Serbia meets the requirements that allow for a functional response to both smaller and larger impacts. Key informant interviews indicated a strong ability to overcome shortages in data and capacity when the circumstances required swift action and scaling up of response efforts. However, the scoring also shows that the EP&R system could be significantly improved; in particular, greater data availability would help create operational awareness during response. A strong aspect of the response system is the organization of the emergency services within the Sector for Emergency Management (SEM) of the Ministry of Interior (MoI). SEM's inclusion of a substantial local presence allows for well-coordinated deployment of resources. While strong in terms of training programs and exercises and drills, the system could benefit from adding one or more training facilities to support multi-agency training, coordination workshops, and simulation exercises.

The risk environment in Serbia has changed over time due to the effects of climate change on weather patterns and due to ongoing urbanization, including a growing number of high-rise buildings. Budget cuts have resulted in ongoing personnel shortages and problems in operational preparedness due to limited equipment replacement and challenged maintenance.

## COMPONENT

## 1

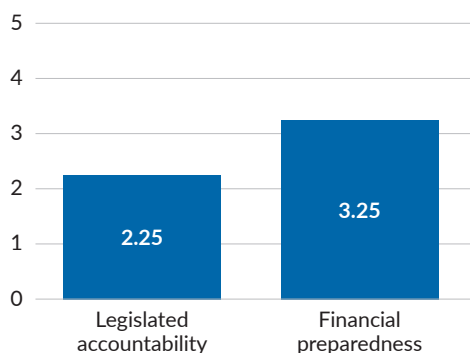
## Legal and Institutional Accountability

## 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, so too do inefficiency and jurisdictional overlap. During a disaster event, ambiguity can increase both potential and actual human and economic losses.

Greater clarity around preparedness and response roles can be a potent means to improve resilience at various levels of government. Further, it helps ensure that World Bank investments do not lead policy through capacity improvements but 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, legal and institutional accountabilities are clearly enshrined in legislation with directive regulations. Where possible, deconflicted policy instruments identify the operational expectations of those agencies assigned a preparedness and response mandate. However, even in the absence of complete organizational clarity, investment in preparedness and response often improves a jurisdiction's ability to mitigate impacts and limit disaster- and emergency-related losses.

## Component Conclusions

After the floods of 2014, and since the associated legislative and structural reforms, the Serbian government has constantly sought to improve DRR and emergency management (EM). The lessons learned from implementing the Law on Emergency Situations, first in 2009 and then during the floods and other events, were fundamental to developing the new and more comprehensive Law on Disaster Risk Reduction and Emergency Management, which was adopted in November 2018.<sup>15</sup> The NDRMP, approved by the government in 2014, provides a comprehensive program for building disaster resilience.

The Law on Disaster Risk Reduction and Emergency Management regulates the national disaster risk reduction strategy, which seeks to strengthen the resilience and readiness of individuals and communities to respond to the consequences of disasters, including protection and rescue of people, material, and cultural and other assets. It is intended to clarify the rights and obligations of citizens, societies, legal entities, local self-government units, autonomous provinces, and the central government and civil protection system concerning emergency management and early warning, alerting, and alarming, as well as international cooperation, inspection, and other issues relevant to

<sup>15</sup> Republic of Serbia, "Law on Disaster Risk Reduction and Emergency Management" [Zakon o smanjenju rizika od katastrofa i upravljanju vanrednim situacijama, *Official Gazette of the Republic of Serbia*, No. 87/2018, 2018 [in Serbian], <https://www.paragraf.rs/propisi/zakon-o-smanjenju-rizika-od-katastrofa-i-upravljanju-vanrednim-situacijama.html>.



the organization and functioning of the DRR system. According to the Law on Disaster Risk Reduction and Emergency Management, local governments are required draw up three key documents related to DRR and EM: a risk assessment, a DRR plan, and a protection and rescue plan. Risk assessments are reported to be in place at all local governments; the same could not be confirmed for the disaster risk reduction plans and the protection and rescue plans. Although formats for the various documents were made available, the completeness and quality of the plans reportedly vary.

Given the top-down approach in establishing the legal framework and organizational structure, the local capacities need time and resources to incorporate the central authorities' vision for DRR and EM in their structure and to reach the necessary level of functionality. However, both central and local authorities are aware that this is a long process, and also that more serious investments are needed in human capital and equipment to follow the trends in civil protection in Europe. As a result of the government's long-standing hiring freeze, capacities to implement the new legislation and to further strengthen the system are very limited at this moment. In fact, the system is still losing capacity, as staff that change or leave their position can mostly not be replaced.

The Sector for Emergency Management under the MoI represents the key national EP&R authority, and delegations of authority are well established. SEM has transitioned from a purely operative entity dealing with EP&R to a more comprehensive and specialized entity dealing with disaster risk reduction and emergency management. SEM also oversees the functioning of civil protection measures, implements them, works on relevant data collection, and administers and operates the public alert system. It is represented at all governance levels, with units at the national, district, city, and municipal levels. The Ministry of Defense and the Serbian Army are considered as complementary (“third-pillar”) stakeholders when human resources and assets of local and national civil protection and emergency management authorities are limited. Other ministries and administrative bodies have well-defined relations with SEM and contribute to performing relevant activities and drafting and implementing key DRR and EM documents. An important actor at the local level is the Standing Conference of Towns and Municipalities (SCTM). As the national association of local authorities, it coordinates the establishment of river basin protocols against common risks with towns and municipalities.

Agencies accountable for emergency response activities should have agency-specific operational response plans, but these are reportedly often not in place. The system would greatly benefit from establishing such plans and putting them under scrutiny during inter-agency exercises.

A critical infrastructure assurance program is required in the EM legislation but is not fully implemented. Although infrastructure considered critical is reported to be resilient, there is no list of critical infrastructure, and no assessments have taken place.

Financial instruments for emergency response and early recovery are in place on the national level. Additional funding can be made available via budget amendments if required. Local self-government units most often don't set any contingency reserve for natural disasters in their budgets, and there is no legal provision that forces them to do so. So far, the existing mechanism has proven to be sufficient to respond to the recent crises.

Legal and decentralized frameworks are in place to enable faster emergency intervention in immediate response, relief, and reconstruction. However, procurement forecasting, partnership principles, and contingency planning with international organizations are currently not in place. Furthermore, technology to support emergency logistics, like geospatial information and telecommunications data, is not incorporated into emergency procurement processes. Financial management procedures are available for tracking and reporting on emergency response costs, authorizations, and processing at the local level.

Property catastrophe risk insurance aims to protect homeowners and small and medium enterprises against loss arising from property damage. Disaster risk insurance in principle is available, but usage and participation are low, and the insurance market in general has very low penetration in Serbia.<sup>16</sup> Information programs and policies could encourage households to consider insurance.

<sup>16</sup> World Bank Group, “Disaster Risk Finance Country Note: Serbia,” World Bank, Washington, DC, 2016, p. 18, <https://openknowledge.worldbank.org/handle/10986/24405?locale-attribute=eshttps://documents1.worldbank.org/curated/en/830671468184737730/pdf/105096-WP-Country-Note-Serbia-April-2016-PUBLIC.pdf>.

## Assessment of LSG capacities

The main regulation that guides response activities is the National Protection and Rescue Plan. This Plan is being prepared on the basis of a national disaster risk assessment and must be re-drafted and re-adopted every three years. In addition, there is an Autonomous Province Protection and Rescue Plan and Local Protection and Rescue plans that are prepared by the Autonomous Province and Local Self Governments units (LSGs), respectively. To date over 150 LSGs have adopted Local risk Assessments, and approximately 100 LSGs have adopted Protection and Rescue Plans. These numbers will continue to increase.

The scope of the R2R assessment is the national level EP&R capacities. As local capacities are very important in the function of the overall system, local capacities should also be assessed in more detail. This assessment is currently being carried out for eight local self-governments within the West Morava Basin to support them with the development of Disaster Risk Assessment, Protection and Rescue Plans and Disaster Risk Reduction Plans. Some preliminary conclusions of this assessment includes to following:

### Disaster Risk Assessment

- Early warning, Preparedness, Informing the public - most often general information; describe specifically what is relevant to LSG. Show only information relevant for the LSG, avoid general information.
- Include prevention, preparedness, response and recovery measures in risk treatment.

### Protection and Rescue Plans

- The structure of the PRP plans is defined by the Methodology and based on local DRAs; it contains overview of potential dangers and concrete measures
- 7 out of 8 LSGs has protection and rescue plans (except Krupanj), while PRP of one LSG had not been adopted yet. Not all LSGs that have PRP had the opportunity to execute the plan (e.g. Svilajnac)
- All LSGs have their PRPs prepared by external licensed companies or consultants
- The actors of relevance for PRP execution in all LSGs which have the plans are familiarized with the proposed measures
- Some of the LSGs have updated PRPs, in line with the new Law

### Disaster Risk Reduction Plan

- LSGs successfully cooperate with neighbouring municipalities
- However, there is no cooperation in all LSGs with neighbouring municipalities on the development of local DRR and protection and rescue plans. Good practice example: Ivanjica prepared its DRRP in cooperation with 18 LSGs members of the West Morava towns and municipalities

### Analysis of policy and legislative framework

- DRAs and local plans are aligned with the Law on DRR and emergency management, and Methodology for development of DRAs and local PRPs
- LSGs adopt Decision on organization and functioning of the emergency management headquarters
- The legislative framework is considered as appropriate but there are problems with its implementation (due to insufficient financial and human resources)
- Complexity of methodological framework results in robust local plans that difficult to execute
- Some LSGs confessed that they use copy-paste technique when updating annual operational plans

- The framework implies is a two-week gap between the start of emergency situation and permit for executing the measures from the plan of early warning and readiness, which is identified as a common issue for all LSGs
- Employees who are hired on DRM tasks mostly have no key decision or policy making power. Good practice example: the employee working on DRM tasks proposes preventive and protection measures to the emergency management headquarters
- Their authority mostly ends with submitting proposals and performing operational and administrative tasks related to the work of emergency management headquarters
- Employees on protection and rescue tasks are not necessarily members of the emergency management HQ
- Accountable to the president/mayor or the head of the emergency management HQ (if not the same person)
- The final results of the assessment of the eight LSGs will deliver important and detailed results that together with the national EP&R assessment can inform ongoing capacity development planning in Serbia.

## 1 Key Investment Opportunities

### RECOMMENDATION 1

#### Complete and fully implement the legislative framework with emphasis on missing bylaws.

Significant improvements to the legislative framework have been endorsed or are in development. But the implementation of these changes is hindered by scarce capacities resulting from budget cuts; growing staff or even replacing staff is not possible. The further implementation of new legislation could be sped up by external technical support in drafting implementation plans, filling in missing policies, and establishing or strengthening operation procedures.

### RECOMMENDATION 2

#### Implement the legislation and associated arrangements to secure critical infrastructure.

Critical infrastructure is the backbone of any society. Relevant legislation is written, but implementation has been delayed by the COVID-19 pandemic. Technical assistance is advised to speed up the process for listing of critical infrastructure, to implement the legal requirements using best practices, and ultimately to make critical infrastructure more resilient.

### RECOMMENDATION 3

#### Implement an information campaign on risks and insurance.

Although private insurance products are available, an inclusive information campaign is recommended to inform households, farmers, and businesses about possible risks and the importance of being properly insured. A communication approach to the public could be linked to a broader community engagement initiative.

For inspiration to strengthen arrangements in Serbia two best practices are referenced.

## Good practice on critical infrastructure arrangements

### CASE OF ROMANIA

In order to improve the transposition of the Directive 2008/114/EC (Identification and designation of European critical infrastructures and the assessment of the need to improve their protection) and to ensure a better correspondence with the same, Law no. 636/2018 amending and supplementing GEO 98/2010 (“Law 636/2018”) was enacted and published on August 3, 2018 in the Romanian Official Gazette.<sup>17</sup> The main changes provided by Law 636/2018 take better account of interdependencies between critical infrastructures, industry and state actors. The law also amends the list of sectors that potentially hold critical infrastructure. Among other things the amendments considers: supplementing the coordination attributions of the Prime Minister with regards to the activities of identifying, designating and protecting of National Critical Infrastructure/European Critical Infrastructure; granting the Prime Minister the attribution to manage the Critical Infrastructure Protection activities and to issue decisions with regards to its attributions; establishing a National Coordination Centre for Critical Infrastructure Protection.

## Good practice on information campaigns on risks and insurance

### CASE OF NORTH MACEDONIA

On October 28, 2020, the Government of North Macedonia adopted a decision for the establishment of a risk pooling system in the country, assigning the Ministry of Agriculture, Forestry, and Water Economy as leading institution in the process. The main objective of the Government was to gradually replace the traditional ad-hoc post disaster relief programs with introduction of nation-wide agricultural insurance system.<sup>18</sup> The system will be established based on the Law for Mandatory Agriculture Insurance:

- Mandatory insurance for all registered farmers that apply for production subsidies.
- Government subsidizes 20% of the premium.
- On top of it the minimum farmer contribution is regulated as 30% of the premium, based on which the minimum coverage that the farmer may obtain is set on 50%.
- Insurance companies will join the system on voluntary basis.
- Risks: basic risks (hail, fire, and lightning) and spring frost (only for fruits).
- Streamlined, innovative and affordable insurance products for crop and livestock will be developed.
- Cost efficient and swift claims management.
- Public system (FUND) where certain operations, mainly the management of distribution channels will be transferred through long term contractual arrangements to the Insurance Pool.

<sup>17</sup> <https://www.legal500.com/developments/thought-leadership/new-provisions-concerning-critical-infrastructure-in-romania/>

<sup>18</sup> <https://www.econstor.eu/handle/10419/234167>  
[https://www.munichre-foundation.org/content/dam/munichre/foundation/publications/inclusive-insurance/2021-learning-sessions/ceet/2021\\_CEET\\_S2\\_Boshkovska.pdf/\\_jcr\\_content/renditions/original./2021\\_CEET\\_S2\\_Boshkovska.pdf](https://www.munichre-foundation.org/content/dam/munichre/foundation/publications/inclusive-insurance/2021-learning-sessions/ceet/2021_CEET_S2_Boshkovska.pdf/_jcr_content/renditions/original./2021_CEET_S2_Boshkovska.pdf)

## COMPONENT **2** Information

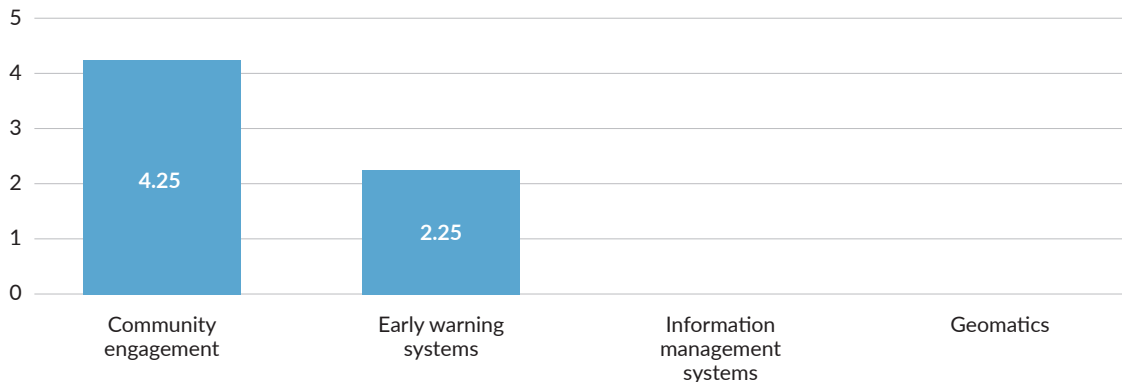
### Component Overview

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 to provide local residents and the response teams that support them with advance notice of emerging hazardous events. In addition, the coordination of emergency information from responding agencies and social media ensures horizontal and vertical situational awareness, which enables efficient, coordinated, and prioritized response operations.

Finally, access to 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 with the appropriate equipment to respond safely and effectively.

**Figure 4** Scoring for Information



Source: R2R assessment findings.

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

### Component Conclusions

To have an impact, information must be used by communities; hence voluntarism is included under the information component. Currently, there are 400 voluntary firefighter (VFF) societies (each association with at least nine members, according to the 2018 VFF law), while the number of VFFs is 3,000 in total. The VFF union goal is to have at least one VFF unit in each municipality in Serbia. VFF units have about 40 to 50 interventions per month and about 100 interventions in summer, and this level of activity makes them a very relevant actor in civil EM at the local level. Usually, the land and facilities for VFF units are provided by the municipality; this arrangement could be an obstacle to investments and receipt of donor funding.

Also, according to the law, local government units (LGUs) may define some benefits for VFF units, assuming they are willing and able to do so. Some LGUs pay daily operating costs of VFF units. Due to tradition and some other peculiarities, Vojvodina (in the north) has a regional VFF union, which is very well organized and sustainable. VFF units establish trade and professional companies to provide services related to their expertise. In that way, they provide means for their operating costs. However, they are dependent on (international) donations for any other expenses.

Community engagement is well established in Serbia through information programs and public outreach. Special attention to vulnerable groups is remarkably strong; for example, first aid trainings and information packages are available for children, families, and visually impaired persons. The SEM has been working with all relevant DRR and EM stakeholders on preparedness lessons for education programs, which aim to educate people about how to prepare for identified hazards, according to risk assessments. In addition, SEM's public awareness campaign, which informs communities about the work SEM does, is implemented annually in close cooperation with community partners. Posters and brochures are distributed to the public about protection against fires, earthquakes, and floods.

Programs to support small-scale, community-led mitigation works are in place at local government level, but they are significantly challenged because capacity to sustain such programs is lagging.

Education and tools for local leaders are mostly absent, except for a few internationally funded projects that do bring tools into the community. There is no ongoing programmatic approach that sustains the support for educational products for community leaders.

A functional monitoring and surveillance program for all major hazards is not in place, though monitoring systems for flood risk are well developed and provide significant coverage. Wildfire surveillance is weak, and monitoring equipment is available only in some high-risk areas. Much of the wildland is owned privately and thus the responsibility of the owner.

National standards have been formulated for the systematic collection, sharing, and assessment of hazard and vulnerability data, but these still need to be endorsed by the authorities. Hazard monitoring organizations are identified at national, subnational, and local levels, and there is clarity about monitoring and sharing accountabilities. Flood monitoring activities are not conducted 24 hours a day, but only when the risk of flooding is high. An evidence-based and technologically sound program to analyze data gathered by the monitoring system is absent. There are however capacities to develop simple, accurate warning messages in real time for those at risk. Common Alerting Protocols have been established, and arrangements to share warning messages are in place with key partner organizations, the mainstream media, and social media. The effectiveness of delivering warning messages to vulnerable populations has received significant attention and was recently part of a large-scale disaster exercise.

Serbia does not have a disaster management information system (DMIS) to support emergency management activities as defined in the EP&R assessment methodology. SEM reported receiving data from relevant governmental organizations at its request, but it lacks any system that integrates risk and variability data and other relevant data layers. For better operational coordination and to inform priority setting in the aftermath of disaster, a data management system is considered an essential development. Geographic information system (GIS)-referenced data are available in some systems but are not integrated in a system that could support overall EP&R-relevant situational awareness for coordination purposes and emergency first responders.

SEM in collaboration with PIMO and international partners developed an interactive electronic Risk Register maintained by MOI in cooperation with the competent state administration bodies, other state bodies and holders of public authority. The risk register contains data of importance for risk management, as follows:

- physical-geographical data on the area affected by the risk;
- data on the number and structure, as well as exposure and vulnerability of the population, which may be affected by the occurrence of the disaster;
- data on residential and other purpose buildings, infrastructure and other facilities, their exposure and vulnerability;

- data on previous disasters and their consequences;
- description and characteristics of the hazard;
- other data of importance for risk reduction.

Furthermore, SEM MOI has developed a National database of the existing capacities with reference to the location. This information is not public but it does assist SEM in the deployment of resources. The DRIS database holds information regarding the important strategic and planning documents developed on the local self-government level which provide support for decision makers.

## 2 Key Investment Opportunities

### RECOMMENDATION 1

#### Further develop forecast and early warning systems.

The early warning system should be further improved. Currently, there is no early warning system along the Morava River. Over the whole of Serbia, additional automatic measurement stations should be integrated with current ones. There is a plan for key investment in the coming 10 years, starting with the Kolubara basin. The funding to implement this plan has not been fully secured. There is a need to update risk zone maps in addition to maps of the 99 identified flood-prone areas across Serbia. The World Bank supported assessment currently in execution under eight LSGs will deliver more detailed information on the requirements for the development of the early warning system.

### RECOMMENDATION 2

#### Develop and implement a DMIS and geomatics.

Serbia could benefit significantly from an integrated DMIS that is linked to all EP&R stakeholders and first responders. A mapping of relevant available data, assessment of aggregation level, and information on data quality are currently not available. Data-sharing protocols are to be established and a data system selected and tailored to the needs of Serbia. The integrated DMIS should include georeferenced data layers to support situational awareness during response coordination, along with general DRM, risk, and vulnerability data and a disaster resources database with all the resources available (equipment, human resources, commodities, potential suppliers etc.) within government and private sector.

Feeding this data into incident management software like NICS, QGIS, or similar is strongly recommended to strengthen the disaster response headquarters (HQs) for high level decision makers as well as in the Emergency Operations Centers (EOCs) for operational coordination; see discussion of the R2R facilities component (Component 3) in the next chapter.

## COMPONENT

## 3

## Facilities

## Component Overview

Coordination of effort for emergency preparedness and response 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 facilities act as a core element in establishing a culture of preparedness, and help ensure a dependable common operating picture and resilient services when most other critical infrastructure and government service is disrupted. This component ensures that there is a nexus for information, personnel, and equipment as an 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

In accordance with the Law on Emergency Situations, the regulation on establishing a disaster response headquarters at republic, regional, and local level was adopted. The disaster emergency HQs are standing bodies at local, regional, or republic level that become engaged if a disaster occurs. Decision-makers at headquarters are the mayors and representatives of SEM. Emergency Operations Centers facilitated the operational response.. There is no assessment available of the various HQs and EOCs, but the equipment is reported to be very basic, including at SEM's national HQ and EOC. The SEM plans for a new HQ to be established in a future new SEM building. A list of equipment needs for the national emergency HQ and EOC was made available and will inform investment planning.

EOCs are staffed around the clock only during large-scale incidents and disasters. SEM has one modern and dedicated mobile EOC available on standby for emergency deployment.

The management represented by the assistant minister of MOI and Head of Sector and his team presented the following goals for the further development of the SEM:

- Enhance number of personnel within the SEM MOI, especially number of the fire and rescue units' personnel.
- improve the VFF.



- Continuous investment in equipment, vehicles, facilities, and other capacities
- Establish and equip smaller fire and rescue stations / units.
- Improve the capabilities for the aerial fire-fighting.
- Raise the awareness of the population and improve the safety culture among citizens and cooperation with local self-governments.
- Improve the international cooperation as we are all exposed to more frequent and severe emergencies.
- Establish operational 112 system.

The assessment indicates the need for further coordination among the different response organizations. Mechanisms of coordination—including coordination committees, operational–tactical staff, E-112 centers, organization-specific emergency operations centers, and civil–military coordination—should be defined, along with interactions between these mechanisms. In Serbia, this coordination of response efforts would be centered in EOCs at the various levels. For large-scale disasters, standard operating procedures (SOPs) should establish how permanent operational-tactical staff will operate and how to coordinate with ad hoc meetings of the various local EOCs. These SOPs exist and are reviewed frequently on all levels of government. Standard staff functions, communications and procedures are regulated in bylaws, specifically the regulation on Emergency Management HQ. The national emergency HQ has organized lines of authority. The coordination mechanism will be most efficient if there is synergy between national and local authorities via the local civil protection capacities and decentralized SEM units.

A process is in place for the collection, analysis, sharing, storing, and maintenance of social media and crowdsourced data. These data are also channeled to the HQ as well as to the EOCs. Relevant social media accounts with information on resources for emergency management exist and are kept ready for use during emergencies and disasters. These accounts can both send information to and receive information from the public, and can respond to false or incorrect information and rumors.

Some response stations are equipped with additional equipment relevant to the specific risk profile of a territory and could be considered hazard-specific response stations. To date, there has not been an assessment of the needs of hazard specific-response stations, the strategic distribution of such stations over Serbia, or the capacities required to meet response standards. Such an assessment is advised under Component 4, equipment.

A legal act is in place that regulates the use of private land for the purpose of emergency response, specifying the agreement and compensation. The designation of open spaces for disaster management operations should be included in municipalities' protection and rescue plans. The SEM does not keep information on whether this designation is adequately carried out or kept up to date.

The establishment and maintenance of disaster evacuation routes deserve further attention in the future. These routes should be clearly identified and local populations should be aware of their locations. Updated risk assessments are expected to ensure that the evacuation routes are resilient to known hazards.

According to the Law of the Serbian Red Cross, the Red Cross (along with relevant authorities) is responsible for accommodation and care of affected persons. SEM relies on the capacities of the Serbian Red Cross, but SEM also provides assistance by establishing special units for sheltering people. The sheltering capacity of the Red Cross is never under 500 persons (at national level), but local Red Cross offices bring the total number who can be sheltered to more than 800 persons.

### 3 Key Investment Opportunities

#### RECOMMENDATION 1

**Assess the need to strengthen all HQ and EOC facilities with basic and advanced equipment to support the development of prolonged operational coordination capabilities during disaster response.**

This assessment should include the operational requirements for the HQs and support the drafting of SOPs for the various functions and for coordination between all levels of government. Based on this assessment, a plan for the new outfitting of EOCs across the country, including at national level, should be developed. The upgraded EOCs should serve professional as well as volunteer units, be multi-agency, and have GIS data information and mapping systems (NICS, QSIS, or similar—see also the R2R component on information in the previous chapter). They should also have access to infrastructure to coordinate response with solid situational awareness that can be shared in real time with all emergency responders.

#### RECOMMENDATION 2

**Invest in building or reconstructing fire rescue (response) stations throughout the Republic of Serbia.**

This project aims at a better distribution of equipment and units over Serbia in order to reduce response times in urban and rural areas.

#### RECOMMENDATION 3

**Establish a multi-agency training center.**

As already envisioned by the authorities, a centrally located multi-agency emergency management training facility should be established and equipped so Serbia can provide multiple agencies with both theoretical training and practical experience in use of equipment. The center should be centrally located, include arrangements for overnight stays, and focus on a standard that allows Serbia to conduct Union Civil Protection Mechanism (UCPM) training courses. The facility might also be designed to serve as an emergency shelter facility for displaced persons.

#### RECOMMENDATION 4

**Invest in a network of predetermined shelter locations and equip these facilities with the appropriate provisions to meet (at minimum) the Sphere standards.**

Emergency sheltering can be organized in multiple ways. Shelter solutions that are appropriate and cost-efficient and meet internationally accepted standards should be pursued. After stationary, well-equipped, and well-prepared shelter solutions for population centers, Serbia should prepare multifunctional, flexible, and deployable shelter solutions similar to the ones currently pursued in several UCPM member states.

For reference of developments, a best practice to establish a multi-agency training center is shared.

### CASE FROM SLOVENIA

The Training Center in the city of Ljubljana plans, directs, coordinates and implements education and training of personnel in the field of protection against natural and other disasters.<sup>19</sup> It implements various training programs for members of the Civil Protection, members of rescue units, services and other operational structures of associations and other non-governmental organizations, companies, institutes and other organizations, namely: education and training programs for professional firefighters and fire officers; introductory, basic and supplementary training programs for civil protection bodies, units and services under state jurisdiction; training programs for members of the civil protection, especially commanders, deputies and members of the civil protection staff, heads of interventions, radiological, biological and chemical protection, protection against unexploded ordnance, technical rescue, information and communication support and logistics; training programs for members of units and services for the implementation of protection, rescue and assistance using aircraft; training programs for fire brigades to perform tasks of wider significance (traffic accidents, hazardous substances, rescue on and off the water, etc.); more demanding training programs for volunteer firefighters in agreement with the Fire Brigade Association of Slovenia; training programs for units, services and centers, organized in cooperation with state bodies or companies, institutes and other organizations, for the performance of certain protection, rescue and assistance tasks, and which are within the competence of the state; training programs agreed within the framework of international organizations or international cooperation (EU and UN).

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<sup>19</sup> <http://www.sos112.si/eng/page.php?src=aiz12.htm>

## COMPONENT

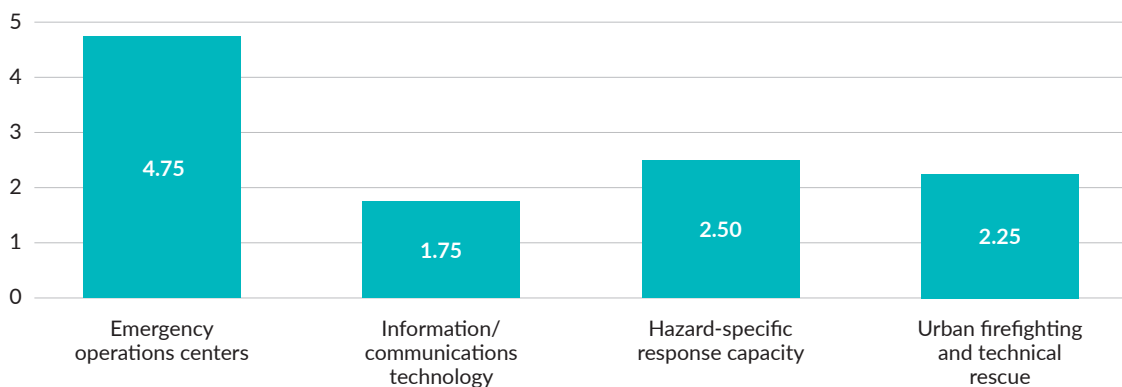
## 4

## Equipment

## Component Overview

The appropriate acquisition, use, and maintenance of preparedness and response equipment ensures timely information sharing and safe, effective rescue operations. It provides the capability to effectively communicate despite the harshest conditions. Investments in equipment help governments meet the capital requirements to ensure access to lifesaving technologies and resources. Combined with clear implementation guidance, an established parts and services supply chain, and program budgets for maintenance and upgrades, these elements ensure that the 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

Overall, medical responders, prehospital health care, and medical transportation resources are available for casualty care. However, some gaps remain. Preclinical mass casualty health care structures—covering elements such as triage, specialized treatment of hazardous material-related injuries, advanced mobile medical facilities, and transport staging—are uncommon in Serbia. The absence of these elements could potentially hinder the efficiency of a large-scale response.

The network of the emergency medical services can be reached in a short time by two-thirds of the population; one-third will have to be supported by local doctors (general practitioners). Concerning disease prevention, appropriate laws and bylaws exist, and there is a dedicated structure and workforce with the relevant equipment. Finally, concerning mortality, Serbia has guidelines on respect for 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. In addition, there are protocols and measures for funeral activities for COVID-19-related deaths. However, there is a shortage of appropriate vehicles for body recovery and transport.

Concerning information and communication technology (ICT), significant work is required to achieve redundancy. The TETRA radio system is the most used, but the coverage in some areas of the country should be improved. Backup digital

radio systems and communications supporting text are not broadly available to response organizations. Emergency response services are only partially equipped with modern and secure UHF and VHF communication equipment. Interoperability of radio communications between uniformed police, firefighters/civil protection authorities, and medical services is a pressing necessity, as the comprehensive E-112 system will be implemented in the near future. This system is expected to improve coordination with all radio systems in the country; but given that the public and private sectors use different networks, information sharing is vulnerable to failure of systems. In addition, there are challenges regarding integration, interoperability, and consistency of the procurement policies of ICT among all first responders.

The failure to identify communication infrastructure as critical could leave it less protected and less hardened than it should be. The assessment could not determine if telecom providers have sufficient backup systems and spare supplies to allow for rapid recovery of communication networks. With regard to public alerting, the text message modality has not been established yet.

Serbia has a decent EP&R system in place for forest fire risk, although the system focuses mainly on the response side and little on prevention, with the exception of public awareness communication. The organizational structure of the SEM allows professional firefighters to be relocated to the affected areas on short notice. For the water related emergencies, SEM has established, trained and equipped, 27 regional flood rescue teams consisting of regular professional fire-rescuers. These are established at all 27 SEM departments on the local level as floods are one of the most common risks. There are 8 USAR regional teams established, trained and equipped. USAR includes training and equipment for rescue capacity for structural collapse and entombed rescue, confined space rescue, but could benefit from further training and specialized equipment. The continuous need to invest in equipment and vehicles was articulated by the head of sector. In general, local and national stakeholders and private forest owners lack the overall capacities to deal with large scale forest fires. Overall, firefighting capabilities and relevant equipment need to be strengthened. It is understood that funding to adequately equip response stations and agencies is lacking. Additional vehicles are needed for the professional Firefighters. Existing vehicles are reported to be old but kept in operable conditions. Equipment requires to be strengthened for the Professional fire and rescue units. Equipment distribution appears to be skewed, but distributed according to needs and priorities defined by PFRU as well as the identified risks. Additional equipment and training for the smaller units is needed and would be beneficial. The vehicles of the volunteer units are reported to be older than those of PFRU, and more likely to be unreliable or even inoperable. The reliability of equipment is a significant problem for the volunteer fire fighters, and it effects the response times in smaller communities. SEM has initiatives scheduled to purchase equipment and provide training for Volunteer firefighters. However, budget limitations are slowing down the expansion of equipment capacities.

## 4 Key Investment Opportunities

### RECOMMENDATION 1

#### Update and support the country's system for emergency medical services.

Serbia should establish mobile preclinical mass casualty incident structures that can cover triage, treatment areas, and advanced medical posts and transport staging. It should also establish regional reserves of emergency medical response resources; these should be drawn from different areas and defined in a way to ensure that home areas are not left uncovered. Coordinate response with solid situational awareness that can be shared in real time with all emergency responders.

### RECOMMENDATION 2

#### Establish and strengthen a comprehensive radio communication system and national broadband connectivity in the country.

Investment is needed in telecommunications, especially in interinstitutional communication, as lack of financial resources appears to have hampered (inter)connection of all relevant stakeholders.

### RECOMMENDATION 3

#### Assess equipment.

An assessment of available equipment, including level of maintenance and remaining lifespan, should be carried out. In addition, there should be an analysis of the minimal equipment needs for meeting operational requirements given local risk profiles. Without these assessments, strategic planning for equipment maintenance and replacement cannot occur. The assessments will underpin a plan to make the right equipment more available, especially in rural areas, over the next five to seven years for professional and VFF.

### Best practice for capacity needs assessment: Equipment and staff

The Disaster Response Capacity Assessment and Roadmap for Bosnia and Herzegovina involved a participatory systematic assessment of existing response capacities at all administrative levels. The assessment comprised two phases:

- A structured data collection on the existing human resources and technical capacities available through the current range of operational units and response services was implemented. The required information included aspects such as the existing staff, vehicles, equipment and materials dedicated to each defined type of disaster, response operation, service or unit.
- In order to allow for an analysis of the collected data, a theoretical framework was developed for the needs assessment. The assessment framework was based on the most frequent hazards in the country and consisted of a list of recommendations on the specialized response units and a description of the main components of these response units. This determination was also based on European civil protection modules under the UCPM, which was utilized as the benchmark for the analysis at all administrative levels in the country. For the purposes of the assessment, units of local self-government were divided into small (up to 5,000 inhabitants), medium (5,000 to 10,000 inhabitants) and large (more than 10,000 inhabitants) units of local self-government. In addition to serving as a means for determining the needs in comparison to the existing capacities, this framework can serve all administrative levels as a recommendation on the type and structure of response and the disaster response units required in the event of an emergency.

Example of the assessment results: Cumulative deficits observed in the main types of response components in Bosnia and Herzegovina

Main components/items	n
<b>Human resources</b>	
Staff	-13,546
<b>Vehicles</b>	
Command vehicles/vehicles for staff	-1,616
Off-road vehicles	-1,062
Vehicles for the transportation of equipment	-216
Vehicles for extinguishing fires	-340
Water tanks	-253
Tanker trucks	-141
<b>Logistic materials</b>	
Tents	-1,216
Covers and shelters for displaced population	-47,690
Power generators	-1,252
Forklifts	-127
<b>Other equipment</b>	
Snowmobiles	-233
Transportable decontamination units	-19
Radiological detectors	-30
Chemical detectors	-20
Mobile water purification units	-104
Mobile water storage units	-106
Mobile field laboratory	-105

All units needed for Brčko District, the Federation of Bosnia and Herzegovina, the cantons, the municipal and entity level, the municipal and entity level in Republika Srpska).

## COMPONENT

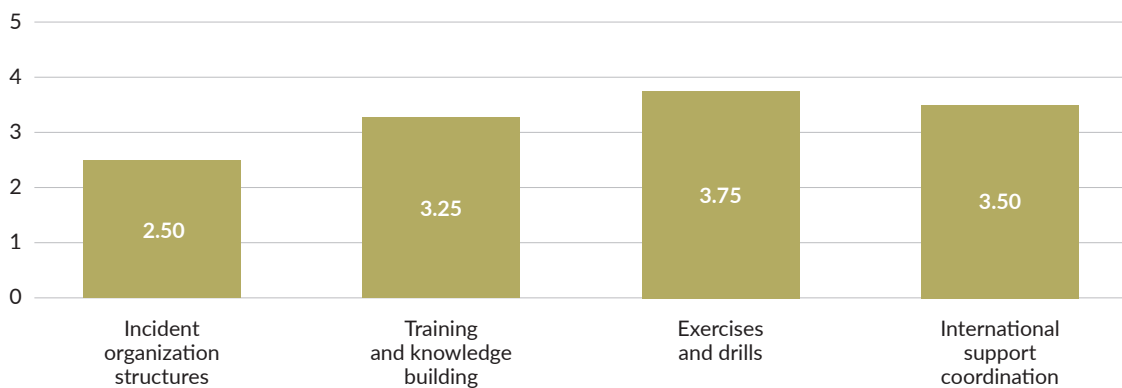
## 5

## Equipment

## Component Overview

A highly skilled and experienced workforce is the most valuable resource in any disaster preparedness and response system. Developing such a workforce requires a culture of preparedness that places the trust of the public and political bodies in the agencies tasked with ensuring public safety and minimizing economic disruptions. This in turn requires intensive and extensive training of EP&R personnel so they acquire knowledge, develop skills, and gain practical experience. The development of personnel must take advantage of the best available procedures, 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 gains in personnel development transition from the individual to the team, and from the team to the agency culture.

**Figure 7** Scoring for Personnel



Source: R2R assessment findings.

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

## Component Conclusions

The interviews indicate that the role of central authorities in EP&R is clear. The legal provisions well define the competences of all relevant stakeholders, and significant efforts were made in the last five years to invest in human capital and material resources. Challenges remain, however, mainly related to staffing levels, digitalization, technology integration in performing daily tasks, investments at local level, and lack of interagency cooperation in the broader context.

Various EP&R actors have their own training initiatives and programs, at times supported by international donors (depending on funding availability). A comprehensive training system for joint activities of various institutions is not in place, and could benefit from additional funding and certified trainers. 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, multilevel training programs.

This approach would need to be supported by an increase in the availability of certified trainers, improvements in formal assessment programs, and integration of 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.

Findings for training and knowledge equally apply to exercises and drills. In fact, various actors have their exercises and drills in place, but an ongoing national exercise and drill program is lacking, and most exercises in country are small in scale and ad hoc. Therefore, the R2R diagnostic advises consolidating these individual activities to form part of a long-term vision on emergency preparedness, one achieved through testing response plans and practicing cooperation.

## 5 Key Investment Opportunities

### RECOMMENDATION 1

#### Make the firefighting structure more efficient for response.

When a disaster strikes, professional fire and rescue units members which are part of the Regional Specialized teams with specialized training (around 15–20 percent) are deployed to the affected area. They join with other specialized teams, leaving their home fire and rescue stations understaffed. This lack of personnel is often counterbalanced by calling in designated standby personnel, followed by all off-duty personnel. For longer-lasting disasters, this approach is clearly unsustainable. Instead, an adapted shift system is needed to be considered during a disaster next to existing shift system.

### RECOMMENDATION 2

#### Establish and strengthen a comprehensive training system.

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 in line with existing UN and EU (UCPM) standards. Serbia needs a planned comprehensive training system that includes individuals from a variety of institutions to ensure a continuous learning approach.

### RECOMMENDATION 3

#### Conduct a train-the-trainers program for key personnel.

Serbia requires more certified trainers to contribute to increased levels of continuing programmatic training for all EP&R actors. A train-the-trainers program is recommended as a way to prepare experienced EP&R specialist responders to conduct training programs for national, regional, and local actors.

### RECOMMENDATION 3

#### Improvement of the capabilities for the aerial fire-fighting and search and rescue in mountains. .

A priority of SEM is the improvement of the capabilities for the aerial fire-fighting. During the interviews an additional gap was identified in the aerial support for the mountain rescue services.<sup>20</sup>

<sup>20</sup> Mountain Rescue Service, “Stations of the Mountain Rescue Service” [Stanice Gorske Službe Spasavanja], <https://www.gss.rs/stanice>.

# 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.*

After the heavy floods of 2014 and since the associated legislative and structural reform, the Serbian government has consistently and continually sought to improve disaster risk reduction and emergency management. The lessons learned from implementing the Law on Emergency Situations (2009), in particular during the 2014 floods,<sup>21</sup> informed the process of developing the new and more comprehensive law, the Law on Disaster Risk Reduction and Emergency Management.<sup>22</sup>

The Law on Emergency Situations decentralized protection and rescue activities so that local government units became responsible for the planning and organization of civil protection and for first response in emergency situations. According to that law and the Regulation on the Formation of Emergency Management Headquarters, the National Emergency Management Headquarters (NEMH) and Sector for Emergency Management of Mol manage major emergency situations or those that have affected several local self-government units.<sup>23</sup>

To provide a more comprehensive framework for prevention, preparedness, and response, in 2011 the National Strategy for Protection and Rescue in Emergency Situations was adopted. It provided for a series of laws and strategies that were developed together with UNDP (United Nations Development Programme) Serbia and the United Nations Office for Disaster Risk Reduction (UNDRR) in line with the Hyogo Framework for Action guidelines. However, the legislation had its limitations and implementation was considered as slow.

The National Disaster Risk Management Program, approved by the government in 2014, has shown itself to be a comprehensive program for disaster resilience, whose framework aims to coordinate, channel funds for, and implement activities related to reducing and managing risks in Serbia. The program defined clear responsibilities for all stakeholders in reducing existing risks, avoiding the creation of future risks, and responding more efficiently to disasters. The action plan for implementation of the National DRM Program is in accordance with the Sendai Framework's four priorities for action.

<sup>21</sup> The 2014 floods revealed which parts of the existing law were inapplicable or weak. The preventive provisions of the law lacked penal provisions and were therefore not enforced.

<sup>22</sup> Republic of Serbia, "Law on Disaster Risk Reduction and Emergency Management" [Zakon o smanjenju rizika od katastrofa i upravljanju vanrednim situacijama], *Official Gazette of the Republic of Serbia*, No. 87/2018, 2018 [in Serbian], <https://www.paragraf.rs/propisi/zakon-o-smanjenju-rizika-od-katastrofa-i-upravljanju-vanrednim-situacijama.html>.

<sup>23</sup> Republic of Serbia, "Serbia: National Progress Report on the Implementation of the Hyogo Framework for Action (2013–2015), 2015, p. 2, [https://www.preventionweb.net/files/42384\\_SRB\\_NationalHFAprogress\\_2013-15.pdf](https://www.preventionweb.net/files/42384_SRB_NationalHFAprogress_2013-15.pdf).

The new program led to the preparation of new legislation:

- The Law on Reconstruction Following Natural and Other Hazards (2015)
- The Law on Disaster Risk Reduction and Emergency Management (2018)
- The Law on Critical Infrastructure (2018)

The new Law on Disaster Risk Reduction and Emergency Management was adopted in November 2018 and regulates the national DRR strategy, which seeks to strengthen the resilience and readiness of individuals and communities to respond to the consequences of disasters, including protection and rescue of people, material, and cultural and other assets. It is intended to clarify the rights and obligations of citizens, associations and societies, legal entities, local self-governments units, autonomous provinces, and the central government and civil protection system concerning emergency management and early warning, alerting, and alarming, as well as international cooperation, inspection, and other issues relevant to the organization and functioning of the DRR system.<sup>24</sup>

With this law, risk prevention as well as preparedness for response are both recognized as areas of strategic importance, and the SEM's responsibilities are further clarified and strengthened, especially its role in coordinating prevention efforts.<sup>25</sup> As stated in May 2019 during the EU peer review on DRM and civil protection, and in December 2021 during interviews for diagnostic tools, most of the 43 bylaws that need to accompany this law are still in development.

According to the Law on Disaster Risk Reduction and Emergency Management, local governments must draw up three key documents: a risk assessment, a DRR plan, and a protection and rescue plan. In addition, according to Article 18 of the law, chemical industry facilities (e.g., SEVESO plants) located within a municipality must have their institutional plan for protection and rescue approved first by the municipality and then by the Ministry for Environmental Protection. Such plans should be integrated into the municipality plan for protection and rescue. Initiatives contained in these local plans can be financed from the national budget through specific projects (allocated by the Public Investment Management Office, PIMO) or through their own (limited) resources.

The legislative reform in 2018 introduced laws regulating risk management related to different hazards: the Law on Water, Law on Water Management, and Law on Forests. In addition, several other laws were adopted (or had been adopted earlier) as part of a comprehensive approach to disaster risk reduction and emergency management:

- The Law on Voluntary Firefighting Service (2018)
- The Law on Amendments to the Law on Fire Protection (2018)<sup>26</sup>
- The Law on National Spatial Data Infrastructure (2018)
- The Law on Meteorological and Hydrological Activities (2010)

The Law on Voluntary Firefighting Service helps municipalities strengthen their responsive capacities through support for VFF organizations.<sup>27</sup> The law defines the specifications of the personal equipment needed by VFF units and the modalities for educating local communities so as to help VFF units.

<sup>24</sup> Republic of Serbia, "Law on Disaster Risk Reduction and Emergency Management," *Official Gazette of the Republic of Serbia*, No. 87, 2018, p. 1.

<sup>25</sup> European Commission, "Peer Review Republic of Serbia: 2018–2019 Programme for Peer Reviews in the Framework of EU Cooperation on Civil Protection and Disaster Risk Management," 2019, p. 9, [https://ec.europa.eu/echo/system/files/2020-03/peer\\_review\\_-\\_report\\_serbia.pdf](https://ec.europa.eu/echo/system/files/2020-03/peer_review_-_report_serbia.pdf).

<sup>26</sup> On November 21, 2018, Articles 58–64 and 66–72 of the Law on Fire Protection (*Official Gazette of Republic of Serbia*, No. 111/2009 and 20/2015) were amended with the entry into force of the Law on Disaster Risk Reduction and Emergency Management (*Official Gazette of the Republic of Serbia*, No. 87/2018); Article 65 of the Law on Fire Protection was amended with the entry into force of the Law on Voluntary Firefighting (*Official Gazette of Republic of Serbia*, No. 87/2018).

<sup>27</sup> European Commission, "Peer Review Republic of Serbia: 2018–2019 Programme for Peer Reviews in the Framework of EU Cooperation on Civil Protection and Disaster Risk Management," 2019, p. 27, [https://ec.europa.eu/echo/system/files/2020-03/peer\\_review\\_-\\_report\\_serbia.pdf](https://ec.europa.eu/echo/system/files/2020-03/peer_review_-_report_serbia.pdf).

Given this top-down approach to establishing the legal framework and organizational structure, the local capacities will need time and resources to incorporate the vision of the central authorities in their structures and to reach the necessary level of functionality.

However, both central and local authorities are aware that this is a long process, and also that more substantial investments are needed in human capital and equipment to follow the trends in civil protection in Europe.

#### Indicator 1.1.2: Appropriate Delegations of Authority

*Rationale given by the R2R diagnostic: During disasters and emergencies, decisions must be made quickly and often by those directly involved in the management of response operations or priority setting for those operations. Clarity about the decision-making process, 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 Sector for Emergency Management of the Ministry of Interior represents the key national authority in Serbian civil protection and emergency management for natural or man-made disasters. Analyzing the period from 2007, when the SEM's predecessor (Sector for Protection and Rescue of the MoI) was established, to 2009, when the SEM was formally reformed, through to the present (2021), one can notice the transition of SEM from a purely operative entity dealing with EP&R to a more comprehensive and specialized entity for dealing with DRR and EM. SEM currently oversees the functioning of civil protection measures, implements them, works on relevant data collection, and administers and operates the public alert system. The SEM is represented at all governance levels, with units at the national, district, city, and municipal levels. It comprises of the following departments: (i) Department for Fire Prevention, (ii) Department for Fire and Rescue Units, (iii) Department for Risk Management and Civil Protection, and additional 2 departments (iv) Division for Legal Affairs and International Cooperation, and (v) Division for Economic and Material and Technical Support. Furthermore, Sector for emergency management replicates this organization into local level dispatched / territorial units in 27 Cities and Municipalities.

As additional forces, Ministry of the Interior - SEM is forming the Specialized civil protection units (SCPU) in accordance with the National Disaster Risk Assessment identified risks and hazards. In the Republic of Serbia, there are 7 types of SCPU formed for following activities: 1. Firefighting, 2. Rescue on water and under water, 3. Rescue from ruins, 4. Sheltering, 5. First aid, 6. RHB protection, and 7. First aid and sheltering. A total of 3,715 members of the SCPU within 111 formed SCPU. Members of SCPU are adult citizens of the Republic of Serbia who are therefore also obliged to civil protection and can be assigned to civil protection units. The SCPU can also be accessed voluntarily with the consent of the competent service of the Ministry of the Interior (SEM), and their previously acquired knowledge, ability, inclination and expressed wishes are taken into account. This is regulated by the Law on Disaster Risk Reduction and Emergency Management and the Regulation on Civil Protection Units, Purpose of Tasks, Mobilization and Manner of Use ("Official Gazette of RS", No. 84/20) regulates the legal framework for education and engagement of civil protection units. Specialized civil protection units can be engaged independently or in cooperation with other protection and rescue forces in the following situations:

- 1) when an emergency situation is declared;
- 2) in case of an emergency event;
- 3) when there is an immediate danger of natural disasters and technical-technological accidents.

The main challenge for the operational engagement of the SCPU is the lack of uniforms, equipment and other resources.

The Ministry of Defense and the Serbian Army are considered as complementary (third-pillar) stakeholders when human resources and assets of local and national civil protection and emergency management authorities are limited. Other ministries and administrative bodies have well-defined relations with SEM, contributing to its activities and drafting and implementing the key DRR and EM documents.

The NEMH was established in 2011 and incorporated into the National Platform for Disaster Risk Reduction,<sup>28</sup> the international framework developed following amendments made to the Law on Emergency Situations. NEMH is the main coordinating and operational body in the country. It is composed of high-ranking representatives from public and private authorities, and its goal is to coordinate activities in the field of emergency management at national, regional, and local levels, to implement the concept of DRR in national and local policies, and to promote sustainable development strategies and protection and rescue strategies.

The NEMH's commander-in-chief is the minister of interior; the head of the SEM also chairs the NEMH. Districts and municipalities have their own district and local emergency management headquarters, led by the district commissioner or the mayor. The mayor's second in command is the district or local commander of the SEM, a body that administers the work and provides support to the NEMH's activities. The director of the national broadcasting service (RTS) is a member of the national emergency HQ.

The national emergency HQ is composed of

- Decision-makers. These include ministers, directors, and heads of central agencies, headed by the minister of the Interior.
- Expert Operational team that meet in the SEM facility. There are four operative teams established for flooding, landslides, wildfires, and earthquakes.
- Expert groups. Two groups, one for floods and one for landslides, carry out project-oriented work and implement medium- and long-term activities for preventing disasters.

An important actor at the local level is the Standing Conference of Towns and Municipalities. As the national association of local authorities, it coordinates the establishment of river basin protocols against common risks in cooperation with towns and municipalities. The city of Kraljevo, widely supported by the Ministry of Local Self-Government, the Ministry for Environmental Protection, PIMO, the SCTM, the UNDP, and Caritas, initiated this original form of nonmandatory cooperation. Under the Law on DRR and EM, LGUs establish civil protection units at local level, as well VFF units to be integrated in those civil protection units. LGUs are categorized in four groups by the Ministry of Public Administration and Local Self-Government. The main challenges for the LGUs come from understaffing and a mismatch between needs and staff educational and professional profiles (lack of talents and motivation to be involved in protection and rescue activities). In addition, the position of civil protection in the priorities and human resources policy of the local authorities varies. LGU representatives stated that they expect some competences in civil protection to be returned from national to local level. At the local level, climate change issues are incorporated into the local civil protection approach.

The Mountain Rescue Service (GSS) of Serbia is a voluntary nonprofit organization whose main goal is assistance and rescue in inaccessible mountain and urban conditions. Saving human life and helping those in need are the basic tasks of the GSS. According to the Law on Emergency Situations, the GSS is one of the components for protection and rescue in Serbia and is defined as a strategic partner of the SEM for conducting rescue on inaccessible terrains. The chief of the Mountain Rescue Service is a member of the NEMH. The GSS is a member of the International Rescue Organization for Surface Rescue–International Commission for Alpine Rescue, as well as the International Rescue Organization for Underground Rescue–European Cave Rescue Association. It harmonizes its work with the recommendations of these organizations.<sup>29</sup>

Such delegations of authority have the strong potential to ensure success in operations and reduce inaccuracies in coordination and application of the subordination principle, which the multi-stakeholder approach to DRR and EM entails.

<sup>28</sup> In 2013 the national emergency HQ was proclaimed the National Platform for Disaster Risk Reduction.

<sup>29</sup> Mountain Rescue Service, "What is Mountain Rescue Service?" [Šta je Gorska Služba Spasavanja?], <https://www.gss.rs/sta-je-gss>.

### 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 different stakeholders have their respective response and preparedness plans, but institutional SOPs are mostly not in place.<sup>30</sup> Disaster risk assessment in Serbia was adopted at the government session on March 14, 2019.<sup>31</sup> The content of the disaster risk assessments and protection and rescue plans is regulated by the Instruction on the Methodology of Preparation and Content of Disaster Risk Assessment and Protection and Rescue Plan.<sup>32</sup> According to the methodology, 12 types of hazards are identified.

Concerning the disaster risk reduction plan, the decree on its content and manner of drafting was adopted by the government only in March 2020.<sup>33</sup> The national protection and rescue plan is also undergoing a development process, but national disaster preparedness and contingency plans have not been developed to date. In terms of disaster preparedness and contingency plans, the law provides important guidelines, some of which are still under development. In addition to including aspects as prescribed by law, these plans will need to facilitate a predefined, gradual scale-up of response. Finally, they should integrate the use of international resources and define the best resources to call upon in specific circumstances.

At the local level, in spite of the advancement in adopting risk assessments, there is little or no progress in developing and adopting protection and rescue plans.

Although there is no intermediate-level authority (between local and national), a regional approach toward DRM and disaster response, based on subject matter principles, was noticed. Using the legal provisions of Article 88a of the Law on Local Government<sup>34</sup> along with the Agreement on Cooperation of Local Self-Government Units, several groups of municipalities from several river basins (Zapadna Morava, Danube, Kolubara, and Drina<sup>35</sup>) merged their flood risk management resources to deal with the floods on their combined territory. This kind of regionalization, although not explicitly mentioned in laws, is followed by adopting all three relevant documents (disaster risk assessment, DRR plan, and protection and rescue plan) for the river basins. There is an ongoing effort to incorporate these regionalized entities within the Ministry of Public Administration and Local Self-Government.

Once the national protection and rescue plan is adopted, it will be possible to determine how efficient the interagency cooperation and coordination is.

<sup>30</sup> SOPs are integrated in some way into the local and institutional plans for protection and rescue.

<sup>31</sup> Ministry of Interior, "Disaster Risk Assessment in the Republic of Serbia" [in Serbian], 2019, <http://prezentacije.mup.gov.rs/sektorzastituispasavanje/HTML/licence/Procena%20rizika%20od%20katastrofa%20u%20RS.pdf>.

<sup>32</sup> Official Gazette of the Republic of Serbia, No. 80/2019.

<sup>33</sup> Official Gazette of the Republic of Serbia, No. 21/2020, <http://www.pravno-informacioni-sistem.rs/SIGlasnikPortal/eli/rep/sgrs/vlada/uredba/2020/21/5>.

<sup>34</sup> Official Gazette of the Republic of Serbia, Nos. 129/2007, 83/2014, 101/2016, and 47/2018, [https://www.paragraf.rs/propisi/zakon\\_o\\_lokalnoj\\_samoupravi.html](https://www.paragraf.rs/propisi/zakon_o_lokalnoj_samoupravi.html).

<sup>35</sup> A similar process is ongoing among the municipalities from the Juzna Morava and Velika Morava river basins.

#### Indicator 1.1.4: Critical Infrastructure Assurance Program

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

The Law on Critical Infrastructure, adopted in November 2018, serves to govern national critical infrastructures. It identifies and designs the critical infrastructure network of Serbia, including critical infrastructure protection, competencies and responsibilities of relevant national authorities and organizations, reporting, decision-making support, data protection, and management and supervision.<sup>36</sup> This law also provides for the designation of a liaison officer—someone employed by an operator of critical infrastructure who serves as a contact point between the operator and the ministry responsible for home affairs.

The R2R assessment does not collect data and opinions from critical infrastructure representatives, but several of the interviews mentioned that full implementation of the Law will be possible following the adoption of bylaws, namely: Proposal of Regulation on Sector Determination, Criteria for Identification of Critical Infrastructure and Method of Reporting, Proposal of Instruction on Methodology, Manner of Preparation and Content of the Risk Management Plan of the Operator Security Plan and Proposal of Rulebook professional examination for liaison officer.

### 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 liability 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 of readily available resources to be used in the aftermath of a natural disaster. This element refers to the financial allocations, budget contingencies, emergency reserve funding mechanisms, and insurance instruments that exist to support effective preparedness, response, and early recovery.*

There is a clear division of competences between the Ministry of Finance, which deals with prevention, preparedness, and response, and PIMO,<sup>37</sup> which deals with recovery activities. During the interviews, PIMO representatives confirmed that there is local ownership of, and that sustainability has been achieved for, the implemented activities and projects.

As an addition to national and local budgets, an important part of the country's EP&R finances come from international funding streams and donations, both financial and in-kind donations or credits. The ambitious legislative standards set in the DRR program and action plan are to a considerable extent supported by projects (grants and loans) from the international community, for instance the EU, UN, and World Bank. Such projects mainly address implementation of structural and nonstructural measures in prevention, adaptation, and mitigation. Many of the project applications and activities for recovery and reconstruction are managed or facilitated by the PIMO.

Each local self-government unit has funds designated for emergency situations within its budget planning; budgeting is done in accordance with local capacities and possibilities for financing the defined tasks. Financing represents a limiting factor that is present at all levels of government.

<sup>36</sup> Republic of Serbia, "Law on Critical Infrastructure," *Official Gazette of the Republic of Serbia*, No. 87/2018, p. 1.

<sup>37</sup> The Law on Reconstruction (2015) established PIMO as a permanent body within the government and the legal successor to the Government Office for Reconstruction and Flood Relief.

### 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 cost, and speed up delivery times.*

The government has established contingent budgetary reserves and several other mechanisms, mainly managed by PIMO. PIMO provides a budget from various funding points (PIMO's own budget, national reserve for disasters, and the World Bank), but only for recovery actions (according to PIMO's mandate). The Ministry of Finance and the Ministry of Agriculture, Forestry and Water Management fund disaster prevention and preparedness activities in regular conditions. Even though a practice of setting aside some contingency budgetary reserves exists, the Ministry of Finance of Serbia uses mostly ex post instruments such as budget reallocation, international aid, and debt financing, as well as emergency borrowing and donor financing.

Local governments have legal responsibility for DRR but no regular/systematic budget allocations for it. State institutions within their competence have their own resources for this purpose (e.g., State Enterprise for Forest Management "Srbijašume," State Enterprise for Water Management "Srbijavode" and "Vode Vojvodine"); but they are normally insufficient, so these situations are financed from the budget reserve. According to the national regulations, the state budget has designated reserve funds in case of a major emergency or a disaster. Municipal budgets likewise have designated reserve funds in case of emergencies. Allocation of the financial means in the budget is the obligation of each local self-government unit. The National DRM Program is financed through different mechanisms, including a multi-donor fund.

Social safety nets do not exist to increase the resilience of risk-prone households and communities, though crop and property insurance are available.<sup>38</sup> There is no investment in place to reduce the risk of vulnerable urban settlements.

Local self-government units most often don't set any contingency reserve for natural disasters in their budgets, and there is no legal provision that forces them to do so. The frequent practice in Serbia is to pass a supplemental budget to reallocate funds if needed after a disaster. The reliance on supplementary budgets leads to delays in the availability of funds (the delay was five months in 2014), comes with a high opportunity cost because of the reallocation of funds away from already planned expenditures, and entails uncertainty.

The country has a central system for procurement. The pragmatic approach in dealing with disasters and their consequences is established in Article 62 of the Law on Public Procurement. It provides exemptions from regular/usual procedures in public procurements, and states that "the ordering party is not obliged to act in the manner prescribed by para. 1-6 of the same Article (where usual procedures are prescribed)," when providing "basic living conditions in cases of natural disasters or technical-technological accidents whose consequences endanger the safety, health and lives of people, material goods or the environment, in accordance with regulations governing emergencies."<sup>39</sup> However, most municipalities are constantly in debt, and DRR and EM are not top priorities for all local authorities, so it is not clear how implementation of this provision and reallocation of funds look in practice.

<sup>38</sup> Republic of Serbia, "Serbia: National Progress Report on the Implementation of the Hyogo Framework for Action 2013-2015," 2015, p. 30, [https://www.preventionweb.net/files/42384\\_SRB\\_NationalHFAprogress\\_2013-15.pdf](https://www.preventionweb.net/files/42384_SRB_NationalHFAprogress_2013-15.pdf).

<sup>39</sup> Republic of Serbia, "Law on Public Procurement," *Official Gazette of the Republic of Serbia*, No. 91/2019, <https://www.paragraf.rs/propisi/zakon-o-javnim-nabavkama.html>.



### 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 Ministry of Finance does not currently have a strategy in place to meet the financial costs imposed by disasters, and the current disaster funds seem insufficient to cover even smaller recurrent losses. A major problem with collecting any substantial amounts for disaster risk financing and insurance—and in general for DRM activities—lies in the Budget System Law, which does not allow for the accumulation of resources over a multiyear period. A mechanism that did so would be useful for responding to contingencies. In addition, the current lack of fiscal space resulting from ongoing fiscal consolidation efforts pursued by the government means it is difficult to set aside substantial budgetary resources for contingencies. In addition to sustaining a budget shock from the May 2014 floods, Serbia was caught without an adequate system in place to respond to the overwhelming social and infrastructure needs in a coordinated fashion.<sup>40</sup>

Public financial management policies and procedures are subject to the legal framework governing the operation of key national entities during different phases of emergency management. PIMO, as the key stakeholder in dealing with large-scale recovery activities, shows capacity in its work. Based on interviews and on observations of how policies and procedures work, it is not clear whether PIMO has sufficient resources to manage disaster recovery at the local and national levels. The reason for the uncertainty is that PIMO manages funds in several areas as part of the mandate of the central government, and it is not known whether PIMO places a high priority on emergency management, or whether the funds available to it are sufficient to meet disaster needs.

### 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.*

Theoretically, disaster risk insurance is available in Serbia, but usage and participation is low; the insurance market in general has a very low penetration.<sup>41</sup> Property catastrophe risk insurance aims to protect homeowners and small and medium enterprises against loss arising from property damage. An annual insurance premium of €30–60 remains unaffordable for many of the poorest households, who also have the highest exposure to natural risks. The Law on Self-Government calls assuring the safety of all citizens one of the major responsibilities of local government.<sup>42</sup> However, the law relates to DRR and EM only in one of its articles (Article 20), which states that the municipality is “obliged to organize, through its units, and in accordance with the Constitution and legislation, protection from hazards and other threats as well as fire protection, providing mechanisms for its reduction and mitigation of its consequences.”

<sup>40</sup> World Bank Group, “Disaster Risk Finance Country Note: Serbia,” World Bank, Washington, DC, 2016, <https://openknowledge.worldbank.org/handle/10986/24405?locale-attribute=es>.

<sup>41</sup> Ibid., p. 18.

<sup>42</sup> Official Gazette of the Republic of Serbia, Nos. 129/2007, 83/2014, as amended, and 101/2016; Official Gazette of the Republic of Serbia, Nos. 129/2007, 83/2014, 101/2016, and 47/2018, [https://www.paragraf.rs/propisi/zakon\\_o\\_lokalnoj\\_samoupravi.html](https://www.paragraf.rs/propisi/zakon_o_lokalnoj_samoupravi.html).

Practically, there is a need to implement catastrophe insurance facilities and financial risk transfers for households and businesses. UNDRR and UNDP are attempting to replicate the activities for development of the national risk transfer market with a mechanism to protect farmers, private households, and the private sector from damages caused by disasters. However, progress in the rate of insurance uptake remains slow. This is in spite of efforts by national authorities to facilitate this process through participatory actions and financial stimulations for farmers.<sup>43</sup> The national bank has data about the rate of insured houses. Companies, businesses, and households have not shown great interest in the natural catastrophe-based personal or homeowners insurance offered by Swiss Re; it is not expected that market penetration will significantly increase soon, given the costs for households.

To assist in meeting the cost of repairing houses, the national legal framework recognizes six categories of damages, ranked from 1 to 6, where category 6 means that the house/building is fully ruined. Financial assistance is provided according to this scale. However, PIMO does not provide financial assistance to the agricultural sector, as it gets assistance/subventions from relevant ministries to insure its lands. PIMO has an instrument for assisting small and medium enterprises and is involved with the development of a new methodology for damage assessment (new software) that will be introduced soon.

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<sup>43</sup> Zoran Pavic, "Agricultural Insurance in Serbia / Serbian Farmers Still See Insurance as an Expense" [Osiguranje poljoprivrede u Srbiji / Srpski poljoprivrednici i dalje gledaju na osiguranje kao na trošak], energyobserver.com, March 11, 2021, <http://www.energyobserver.com/sr/post/28682>.

## 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: 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.*

Concerning community engagement, the SEM maintains a network with a variety of professional associations and representatives from the civil society sector. SEM provides training and funds for buying equipment for volunteer firefighters as an integral part of the local civil protection capacities. VFF units complement capacity of professional firefighters in urban areas, while they represent primary capacity in rural areas. Although legal provisions on involvement of volunteers in the EP&R system exist, the absence of a systematic approach results in ad hoc budgeting and in an imbalance in the geographic distribution of volunteer societies. The status of serving as a volunteer and the history of voluntarism differ across regions. There are significant differences in the extent and number of VFF personnel and VFF organizations between the north and center of the country on the one hand, and the south and east on the other.

Currently, there are 400 VFF societies (each with at least nine members, according to the 2018 Law on Voluntary Firefighting Service), while the number of VFFs is 3,000 in total. The VFF union goal is to have at least one VFF unit in each municipality in Serbia. VFF units have about 40 to 50 interventions per month and about 100 interventions in summer, and this level of activity makes them a very relevant actor in civil EM at the local level. VFF units do not have their certificates for land and premises. Usually, the land and facilities for VFF are provided by the municipality, and this arrangement could be an obstacle to investment and receipt of donor funding.

There is an ongoing program for the development of VFFs. Currently VFFs are not offered privileges or benefits by their company or community, but the ongoing program includes provisions that regulate financial benefits if VFFs are declared as members of local civil protection units. Then employers may apply for reimbursement. Such provisions are part of the VFF law.

Also, according to the law, LGUs may define some benefits for VFFs if they are able and willing to do so. Some LGUs pay daily operating costs of VFF units. Due to tradition and some other peculiarities, in Vojvodina (in the north) there is a regional VFF union, which is very well organized and sustainable. VFF units establish trade and professional companies to provide services related to their expertise, and in this way they cover their operating costs. However, they are dependent on (international) donations for any other expenses.

The integration of government first responders into the training and drills of volunteer emergency response teams varies across the country.

The volunteer program of the Serbian Red Cross is best known and provides basic training and equipment. About a third of Red Cross staff and volunteers (1,000 to 2,500 people) contribute directly or indirectly to disaster preparedness and response activities, including providing assistance to local and national civil protection authorities in implementing adaptation and mitigation measures.<sup>44</sup> NGOs dealing with disability are usually involved in the training programs, but rarely in drills and scenarios. The need to have more substantial trainings and budget was identified.

<sup>44</sup> In 10 to 15 LGUs, local Red Cross staff is involved in activities related to flood prevention and mitigation (cleaning rivers/channels and giving support to construction of flood protection infrastructure).

### 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 SEM has been working with all relevant DRR and EM stakeholders on preparedness lessons for education programs, which aim to educate people about how to prepare for identified hazards, according to risk assessments. SEM's public awareness campaign, which informs communities about the work it does, is implemented annually in close cooperation with community partners. Posters and brochures are distributed to the public about protection against fires, earthquakes, and floods.

SEM conducts training and drill sessions in the elementary schools (in grades 1, 4, and 6) and organizes excursions to FF units. Some of those programs for community education are funded through projects. SEM representatives confirm that activities are sustainable and continue once the project ends. Funding and project applications take both sustainability and continuity into consideration. Public awareness campaigns are considered as efficient.

LSGs cooperate with CP trustee and SEM offices on the local level.. The trustee is trained and enjoys a good reputation in the micro-community, which allows him or her to be the community's link between local civil protection authorities and SEM. Continuous training for civil protection trustees is needed.

Caritas is involved in education activities with vulnerable groups and doing remarkably good work. The Serbian Red Cross trains citizens in first aid, maintains youth clubs in its local branches, and works with civil protection and firefighting units to implement program activities in elementary schools. The Serbian Red Cross has received support from the International Federation of Red Cross and Red Crescent Societies (IFRC), partner organizations, and other donors and programs to support its efforts to strengthen risk reduction in kindergarten and schools in selected areas. The Red Cross educates the population on health and first aid in tourist areas. It also educates mountain rescue staff and volunteers, aiming to transfer knowledge to the local population and mitigate the consequences of disasters and focusing first on vulnerable rural areas. However, Red Cross staff has pointed to the need for further engagement of local communities in line with the approach of the IFRC.

### 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 still a challenge for local authorities with limited capacities. The R2R diagnostic has identified international mitigation and integrated flood risk management projects, which are mainly being carried out by UNDP and focus on existing hazards and hazards influenced by climate change, in accordance with the national, provincial, and local DRR plans.<sup>45</sup> The World Bank supports infrastructure projects to enhance the resilience and sustainability of hard structures in river basins. A remaining challenge is the sustainability of the works, including the recovery projects after the 2014 floods. Serbia continues to receive funds for building disaster/flood resilience through various programs, mainly through UNDP and PIMO.

<sup>45</sup> The plans determine specific preventive, organizational, technical, financial, normative, supervisory, educational, and other measures and activities that the competent authorities and other entities, based on the assessment of certain risks, are obliged to undertake in the future period in order to reduce the risk of disaster and mitigate their consequences.

Needs for larger-scale infrastructural protection in relation to known flood risks include the following:

- The use of mobile dikes for parts of cities that are lower than river water levels to provide urgently needed protection
- Better maintenance of dikes, investment in the identified weak structural point of dikes, and use of technology to better monitor the resilience of protective flood structures

#### 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 directed at community leaders or regional information-sharing forums to establish a local culture of preparedness. SEM is implementing training activities to educate journalists to form part of a pool of journalists specializing in crisis communication; it also seeks to educate representatives from the Ministry of Defense, political leaders, and civil protection representatives at local level (as local decision-makers within local HQs). Following the structure of local HQs, SEM decentralized units have the key role in supporting the decision-makers (mayors) and performing EP&R activities, but participation of civil society actors in civil protection activities varies, in keeping with the local rate of involvement of nonstate actors in the more comprehensive civil protection structure.

SEM and Mol, as the central public relations point for building capacity in crisis communications, participate in projects' tabletop exercises about crisis communication (funded by the Organization for Security and Co-operation in Europe, OSCE) and in development of the public relations strategy.

PIMO together with SEM organizes the training in DRR, civil protection, and recovery. Trainings focus on building disaster resilience according to EU policies, and they are funded via projects. PIMO together with SEM engages in designing curriculums for three components (disaster risk and recovery, civil protection, and recovery) and implements activities through subprograms in close cooperation with National Agency for Public Administration. PIMO together with SEM implements a train-the-trainers project through an e-module for LGUs.

## 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 is the foundation of an effective early warning system. Ideally, there should be an existing system that allows for the predicting 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/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 and the State Enterprise for Water Management "Srbijavode" continuously monitor weather events, river systems, air pollutants, and potential industrial risks. The Hydromet Services and "Srbijavode" made significant investments in water monitoring and a flood early warning system. "Srbijavode" has a "smart" room (which uses the Siemens platform), an automated and sophisticated form of early warning system, and a real-time monitoring system. "Srbijavode" is a member of the Sava Convention; the system is maintained by the Hydrogeological National Authority and implemented by the Dutch organization Deltares and the US Army Corps of Engineers. As indicated during the interviews, lessons learned from 2014 have been identified; they are reflected in

improved management and organization and in increased preparedness after every alert for critical situations. Such an approach exists at the provincial level, and it refers to the provincial water management company “Vojvodina Vode.” According to its mandate, it covers 44 LGUs.

Several needs to further improve the early warning system have been identified:

- An early warning system is needed on the Morava River.
- More automatic measurement stations are needed and should be integrated with all current ones.
- There is a financing plan for key investments in the next 10 years, starting with the Kolubara basin.
- Risk zone mapping should be updated beyond the 99 identified flood-prone areas across Serbia.

Monitoring information is gathered by the SEM and its 27 local centers working on a 24/7 basis, and they also operate the recently introduced E-112 emergency number. The number has started working, though full integration of the system is still ongoing.

During the interviews, SEM representatives shared their thoughts about the priorities for setting up the early warning system, including E-112. The system has to be based on various hazards, using the thematic approach in identifying the threat, which is different from hazard to hazard. There is a need for strong cooperation and mutual assistance in capacity building with the Hydromet Services. E-112 has to issue an alert with an information kit about what needs to be done in the preparedness stage. Color coding, alarming, and textual warnings are the key elements of functionality and community outreach. There is a need for more automatic measurement stations (that gauge water levels), autonomous in terms of maintenance and power supply.

Requests were made by many relevant stakeholders for more monitoring systems with greater geographical coverage, and for more equipment and personnel to gather more data in real time. There is room for more cooperation in terms of sharing and integrating data and digitalizing/automating the system.

#### 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 SEM carries out its analytical work and planning, but as it uses a multi-agency approach, key issues remain, including interconnectivity (i.e., in current conditions, before a digitalized operations center is established), along with integrative and digitalized data management and analysis. Although SEM has the opportunity to train its staff according to international standards, the analysis and surveillance centers are not properly equipped; in addition, SEM depends on data and capacities provided by other institutions and on the way those institutions are able to translate those data into actions.

The Red Cross and local Red Cross branch offices collect and manage data about vulnerable groups. The Red Cross does mapping of its capacities and those of target groups.

#### 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 SEM is responsible for warning and informing the public in case of an emergency, while local authorities have competences in establishing and maintaining the warning system. Acoustic studies have been delayed for 3 years since the adoption in of the Law in 2018.

A procedure exists for communicating with the public through the media during an emergency situation. MoI uses SEM competences and capacities for alerting and alarming as well as SEM's partnership with private operators and network providers. 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 SEM is responsible for alerting the population in an emergency. The main warning method is sirens, but most of the sirens—a legacy of the system established during the Yugoslavia period—are currently not functional due to a lack of finances for maintaining and upgrading the equipment. Upgrading the system will require additional acoustic measurement to determine whether existing sirens are correctly placed and where local authorities need to situate the new ones.

SEM faces technical challenges in remotely managing the alerting system. There are some ongoing developments to improve the system in Novi Sad, Nish, and Kraguevac that should resolve most of the issues.

### 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 Serbia is a challenge for a functional and common information management system. Despite the number of portals and systems at the national and local levels, data sharing remains a considerable challenge, and suffers from a lack of formal agreements among various administrations, agencies, and private stakeholders at both national and local levels. It is recommended that formal and consolidated agreements be established among different national and local administrations and the SEM, which would coordinate the process.<sup>46</sup> This arrangement has not been implemented yet.

Standards that provide details on reporting lines, information platforms, and technical communications, along with easy-to-use reporting templates, are missing. Plans and easy-to-use templates should define the kind and amount of data to be collected during needs assessments.<sup>47</sup>

<sup>46</sup> B. Draskovic, D. Vicetic, and R. Tonchovska, “Geospatial Information in Response to COVID-19 Pandemic: Serbian Experience,” paper presented at Smart Surveyors for Land and Water Management: Challenges in a New Reality, virtual conference, June 21–25, 2021, [https://www.fig.net/resources/proceedings/fig\\_proceedings/fig2021/papers/ps\\_fao\\_3/PS\\_FAO\\_3\\_draskovic\\_vucetic\\_et\\_al\\_11111.pdf](https://www.fig.net/resources/proceedings/fig_proceedings/fig2021/papers/ps_fao_3/PS_FAO_3_draskovic_vucetic_et_al_11111.pdf).

<sup>47</sup> European Commission, “Peer Review Republic of Serbia: 2018–2019 Programme for Peer Reviews in the Framework of EU Cooperation on Civil Protection and Disaster Risk Management,” 2019, p. 54, [https://ec.europa.eu/echo/system/files/2020-03/peer\\_review\\_-\\_report\\_serbia.pdf](https://ec.europa.eu/echo/system/files/2020-03/peer_review_-_report_serbia.pdf).

Implementation of E-112 is in the very beginning stage, while some form of interconnectivity and interoperability is done in a “manual way.” The SEM is the central point for gathering data from stakeholders and for sharing the information within the EP&R system. SEM has its own SOPs for mutual communication, coordination, and cooperation. Decision-making processes in the interagency cooperation model, even at national level, are not supported by relevant digitalized and comprehensive solutions. SEM supports coordination and decision-making by use of a routine and experience-based model, but this model is far from the one that must be present at the central and local levels, as in more-developed countries. Stakeholders’ meetings are organized to discuss upcoming season-related hazards, but information is often shared ad hoc and face-to-face when disaster strikes.

Regarding an intra-institutional approach, there are some examples of a sophisticated approach to DRR (“Srbijavode”) and emergency management (Red Cross), but there is still huge space for improvement and investments. PIMO is indirectly involved in implementation of the plans and strategies for water and flood risk management, and the PIMO representatives confirmed their contribution to developing the cadaster for disasters (in the form of a layer for reconstructed area) and in defining the flood risk zones.

There is an impression that several EP&R institutions operate according to different laws and bylaws; this situation impedes effective information sharing, which currently occurs through informal channels.

#### 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 in order to ensure that it functions appropriately and that valid information is available when required.*

A DMIS is to be established, but its development and continuing operation have not been budgeted for and could benefit from external investments. There is the potential for integration of all stakeholders’ systems in one system. The absence of a DMIS is perceived as a significant gap in the EP&R structure of Serbia.

#### 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 update of GIS data, often by mobile and wireless device users, provides current data for disaster and emergency response and recovery planning.*

The high rate at which risk assessments have been adopted and updated, at national and local levels, creates a great opportunity for integration of all available data into a DMIS once it is established. The objective is for DMIS to collect all data from relevant institutions, including SEM, LGUs, public enterprises, and other actors producing and/or preserving 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.



## 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.*

Most of the risk prevention plans are currently provided in document form and are available via the disaster risk information system (DRIS) platform. It is very important in the future to address the need to digitalize and geotag the plans to facilitate integration, while building them on the information provided by the DRIS. Except for the Dewetra platform, which is not yet fully functional, there is no additional information support for this purpose.

Concerning the capacity of GIS to support emergency management activities, 105 flooding events were entered into a GIS database, and these data can now be consulted. Most of the floods registered were torrential and occurred in the period 2012–2019; they were local and resulted in minor damages. Overall, the data available on GIS is not sufficient for a multi-hazard risk assessment.

The capacity for a geographic information system depends on the further development of the DMIS. Thus the available GIS capacities for emergency management activities are currently limited.

### 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, as necessary.*

Some georeferenced data exist for most hazards, based on piloting work supported by international actors such as UNDP, World Bank, German Agency for International Cooperation (GIZ), and Japan International Cooperation Agency (JICA). The Law on National Spatial Data Infrastructure (2018) and the Law on Critical Infrastructure are the basis for creating related data. However, there is no integration into a singular system providing historical data on previous disaster impacts and georeferenced vulnerabilities. Separate systems have been developed.

SEM in collaboration with PIMO and international partners developed an interactive electronic Risk Register maintained by MOI in cooperation with the competent state administration bodies, other state bodies and holders of public authority. The risk register contains data of importance for risk management, as follows:

- physical-geographical data on the area affected by the risk;
- data on the number and structure, as well as exposure and vulnerability of the population, which may be affected by the occurrence of the disaster;
- data on residential and other purpose buildings, infrastructure and other facilities, their exposure and vulnerability;
- data on previous disasters and their consequences;
- description and characteristics of the hazard;
- other data of importance for risk reduction.

Furthermore, SEM MOI has developed a National database of the existing capacities with reference to the location. This information is not public but it does assist SEM in the deployment of resources. The DRIS database holds information regarding the important strategic and planning documents developed on the local self-government level which provide support for decision makers.

### 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.*

In Serbia, the Republic Geodetic Authority (RGA) is a national spatial data infrastructure (NSDI) coordinator and INSPIRE national contact point. RGA is a special governmental organization that performs state surveys, maintains the real estate cadaster, and manages geospatial data at the national level. The RGA plays an important role in making the available geospatial information and services accessible to all by creating innovative solutions that help the government, municipal authorities, the general public, and businesses make better use of available data and technologies. This role has included providing information in order to plan the necessary social, health, and economic measures related to the COVID-19 pandemic. The NSDI represents an integrated geospatial data system that enables users to identify and access spatial information acquired from different sources—local, national, and global—in a comprehensive manner.

In addition, the Disaster Risk Management Support for End-to-End Early Warning System Project (under a Swiss grant implemented by the World Bank and PIMO) supports municipalities in assessing disaster risk and carrying out rescue planning. This project also developed the DRIS. The development of DRIS secures data on potential risks from local self-government units in one place, establishes a digital database that provides a clear picture of the situation, and enables accurate updates. DRIS has two levels of access:

1. Municipality users can change, add, and update all relevant data in the platform regarding risk assessments and protection and rescue plans.
2. National level users (for example SEM, PIMO, Ministry of Finance) can access municipalities' protection and rescue plans and risk assessments in read-only mode.

Serbia has been making considerable effort to collect and record disaster loss data in the DesInventar database, which is UNDRR supported database. This effort is an important starting point for meeting the EU requirements for recording loss data. The database was initially set up in 2013 in collaboration with the Statistical office when the methodology and standardization of the data form was standardized. Following that, SEM has taken ownership and maintenance of the Database and is working on adaptation of the Form for data collection. The database is regularly populated according to the existing methodology. It contains data from 1980 until 2021.

### 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 ensures understanding of and transparency around how hazardous areas, community vulnerability, etc. are established, and it improves situational awareness for focusing preparedness activities.*

There is a progressive process ongoing to establish a fully matured Risk Register that contains the GIS information for identified risks within the NDRA.

The Disaster Risk Information Systems (DRIS) Database contains the data provided by the LSGS.

## 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 fully capable of operation in the event the primary EOC is not available.*

In accordance with the Law on Emergency Situations, the regulation on establishing disaster response headquarters at national, regional, and local levels was adopted. The disaster response headquarters are standing bodies engaged in the event of disaster or emergency at local, regional, or republic level. Decision-makers at headquarters are the mayors and representatives of SEM. The headquarters of SEM can be seen as an alternative to what the R2R methodology calls an “emergency operations center.” It constitutes the coordinating entity for emergency response in Serbia. A backup EOC location has not been formally established, but the Palace of Serbia (Parliament building) has been used as a HQ in the past.

A detailed assessment of the various HQ facilities around Serbia is not available, but the facilities are reported to be very basic. SEM runs the national emergency HQ/EOC, which is equipped with very basic systems and backup devices. The absence of a DMIS resonates in poor information availability and low situational awareness at the national emergency HQ/EOC. The decision-making process is implemented based on a good command chain structure and experience.

Communication systems to support the HQ/EOC are somewhat redundant, but the distribution of alternative communication equipment is insufficient, with only a few satellite cell phones available. Up until now the primary communication equipment has proven to be sufficient.<sup>48</sup>

As there is an ongoing process for building a new SEM office building, including a headquarters, the goal is to equip the headquarters with advanced technology, to be integrated with the interagency E-112 system.

The Red Cross of Serbia has its own EOC with backup infrastructure, but this includes only cloud devices, MS Office 365 apps, and power generators, and the system should be upgraded. The Red Cross also has seven regional facilities for emergency operational coordination.

#### 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.). Additionally, 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 between 36 and 72 hours without resupply.*

Mobile command posts are temporarily set up in response to crisis situations. SEM has one mobile HQ command post available, and the organization has experience with improvising HQ centers in any facility that can be made available to manage multiple agencies during disaster response, building on existing networks and collaboration. The Red Cross has an improvised mobile command post in an adapted trailer.

<sup>48</sup> More details are provided under Indicators 4.2.1 and 4.2.3.

### 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 assessment indicates the need for further coordination among the different divisions. For example, plans should be developed to define both the horizontal division (agencies involved) and the vertical division (chain of command). They should also define mechanisms of coordination and their interaction, including coordination committees, operational-tactical staff, the E-112 center, and organization-specific emergency operations centers, as well as civil-military coordination. In Serbia, these mechanism would largely be centered on the HQ/EOC at the various levels. For large-scale disasters, it would be important to establish how permanent operational-tactical staff would operate (at least during office hours) and how they would coordinate their operations with ad hoc meetings of the emergency situations headquarters. For this purpose, definitions of standard staff functions, communication procedures, and decision-making protocols would be needed. The national emergency HQ has an organized structure for lines of authority. It is clear that the system's efficiency depends on achieving synergy between national and local authorities via the local civil protection capacities and decentralized SEM units.

### Indicator 3.1.4: Standardized Process for Social Media and Crowdsourced Data

*Rationale given by the R2R diagnostic: Controlling the messaging surrounding an incident entails the ability to find out what is being said on social and conventional media and responding to rumors and incorrect information with an authoritative voice and clear messaging. Collecting, aggregating, and analyzing media can help to identify needs for messaging, and can be a valuable tool for analyzing the effectiveness of messaging and overall response.*

There is a process in place for gathering, monitoring, and analysis of social media and crowdsourced data. A small trained team of government officials use social media to inform the public and to analyze and aggregate information shared on the media that is relevant for disaster response. This team will also respond to false or wrong information and rumors. Social media accounts are available for use during disasters.

## 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 Law on DRR and EM, the SEM has the responsibility for providing training to all relevant stakeholders at local and national level. Currently SEM does not have its own training center to fulfill training needs as required according to its mission and mandate. For theoretical classes, simulation exercises, and work groups, SEM uses the police training facilities that belong to the Ministry of Interior. The Law on Disaster Risk Reduction and Emergency Management envisages the establishment of a national training center that—together with the Red Cross of Serbia—would organize the trainings required to sustain and grow Serbia's DRM and EP&R capacities.

The PIMO has assessed what training facilities are needed. There is one regional center in Kraljevo in the Raška district dedicated to the training of municipal staff, but according to the PIMO, four centers are necessary for the education of local government members of emergency management headquarters. These staff should be trained regularly on executing specific tasks of protection and rescue, recognizing risk, and acting to reduce disaster risks. Training centers could be located in a multipurpose building to maximize efficiency through cost sharing.

### Indicator 3.2.2: Options for Multi-agency Training

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

SEM should provide training for all EP&R stakeholders, as well as multi-agency training. At the moment multi-agency training is insufficiently organized because a proper facility is lacking. The police training center was reportedly not suited or available for this purpose.

### 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 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 SEM has no training facilities available, and as a result this indicator is not applicable. Within the Red Cross structure there are currently multi-use facilities, dispersed regionally, that the Red Cross occasionally makes available for multi-agency training.

### 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 transportation access will improve usage patterns for training centers, increase the opportunity for collaborative learning, and establish a culture of preparedness across public, private, nongovernmental, and academic sectors.*

The majority of currently used training sites are located around the capital. Given the lack of specialized training sites, SEM uses the Belgrade and Pancevo fire stations for some training purposes. A suitable location for a national training center has been identified (40 km) outside of Belgrade.

## Criterion 3.3: Logistics Warehouses and Response Stations

### Indicator 3.3.1: Entities & Frameworks for Logistic Hubs and Warehouses

*Rationale given by the R2R diagnostic: Logistics management is often a complex process even during 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.*

According to Article 3 of the Law on Commodity Reserves,<sup>49</sup> commodity reserves are formed and used to ensure supply and market stability in the event of

- Emergency situations, including natural disasters, technical-technological accidents, catastrophes, and other major accidents and disasters that may interrupt basic supply, or render basic supply insufficient or unstable
- Occurrence, or imminent danger of occurrence, of serious market disturbances
- State of emergency or war

The supply referred to in Paragraph 1 of this article is the supply of the population with agricultural and food products, medicines and medical devices, and products necessary for human life and animal health, as well as strategic raw materials and supplies for production of special importance or strategic interest for Serbia. The autonomous province and the units of local self-government may, depending on their needs and possibilities, form commodity reserves, in accordance with this law.

The SEM is coordinating national institution for the reception or deployment of the international assistance for rescue and protection in form of teams or protection and rescue related items and equipment. The Law proscribes the procedures and related activities. In case of incoming assistance, SEM coordinated the deployment of the international assistance in terms of teams and equipment to the affected area in close cooperation with Local emergency management HQs. The military facilitates the logistics during disasters. SEM has no warehouses in which to stock significant food and nonfood items for emergency deployment to the public. The Serbian Red Cross, using the international partner network and its structure at local and national levels, is recognized as a very relevant stakeholder in logistic and distribution activities, given that it has a stock of food and nonfood items (for up to 5,000 persons for two weeks) available for deployment in Serbia.

### 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.*

Logistics is a separate operational component of the Serbian Red Cross structure, but it is interconnected with the Red Cross's preparedness and response unit. Almost every Red Cross branch office has its own warehouse, and there are two main and four regional ones. The main warehouses are near identified flood-prone areas (Zemun and Mladenovac), as is one of the regional warehouses (Kraljevo). The Red Cross register of available goods and commodities is centralized. The register contains data such as donor information and commodity expiration dates and quantities. An automatic notification is generated when the expiration date is reached or the quantity of certain items falls below a certain threshold. Rules for stocking exist. Delivering items from national to local Red Cross offices takes from six hours to three days, depending on the distance and circumstances. There is a need to significantly increase the number of transport vehicles. The Belgrade Red Cross office was assisted by the National Postal Service in delivering items to critical hot spots. There is no formalized agreement with the Ministry of Defense to provide assistance in the distribution of relief items.

The specialized civil protection units (SCPU), formed by the Ministry of Interior – SEM, for various purpose and functions: Firefighting, Rescue on water and under water, Rescue from ruins, Sheltering, First aid, RHB protection, First aid and care, SEM could benefit from the additional stocking of the existing capacities for the Civil protection units.

<sup>49</sup> Official Gazette of the Republic of Serbia, Nos. 104/2013, 145/2014, and 95/2018, <https://www.pravno-informacioni-sistem.rs/SlGlasnikPortal/eli/rep/sgrs/skupstina/zakon/2013/104/4/reg>.

### 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 among 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 responding to disasters until more specialized aid is deployed. Daily emergencies will not cease during disasters, and the ability of local response stations to continue their regular duties is key to building a resilient population. Local response stations include resources such as ambulance or paramedic response, firefighters, police, and search and rescue.*

There are Professional Fire and Rescue units in most of the Municipalities, organized in 27 Local level Emergency management departments and additionally dispatched on Municipal level. There are 3300 of professional Fire and Rescue Units of the SEM, that are first responders to any emergency.

For example, Belgrade Fire and Rescue Brigade is operational part of the Department for Emergency Management for the City of Belgrade. It consists of professional Firefighter and Rescuers. This Fire and Rescue Brigade at the moment has 17 stations in total, including the HQ in Zvezdara, with additional new Fire and Rescue station in Novi Beograd (as a 18<sup>th</sup> station). The interviews and observations confirmed that (i) equipment and capacity of response stations are generally up to standards, however it is necessary to further invest into enhancement into equipment and facilities, through both reconstruction of existing and building new ones; and (ii) response time can be decreased only by building, equipping, and staffing additional firefighting stations within the city. Due to the city's increase in size, implementation of building plans, and traffic issues, response times are continuously increasing, posing a serious challenge to firefighting work. VFF units are an integral part of emergency management capacities, but they support professionals only in emergencies and disasters. The VFF facilities are in many cases far below minimal requirements; some lack even a garage to store vehicles and equipment. An assessment of the equipment and other needs in the various response facilities is not available and would be of great help in prioritizing investments. The distribution and operative capacity of the police are sufficient, as police are mainly involved in traffic, search and rescue operations, registration, and forensic activities.

The Serbian Mountain Rescue Service is organized in one central station located in Belgrade and in five regional stations.<sup>50</sup>

### 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.*

Municipalities are required to draft protection and rescue plans in case of all known risks and hazards within the jurisdiction. Some municipalities do not have these plans in place. Out of 174 LSGs with the obligation to adopt Local Risk Assessment and Plans for Rescue and Protection, at the moment, there are 151 that adopted assessments, and 97 adopted plans for rescue and Protection. As a result, it is difficult to assess the strategic distribution of specialized response equipment across hazard-specific response stations. The assessment did indicate that flood-related response equipment is distributed to flood-prone areas, and personnel at these locations are specifically trained in the use of this equipment. In general too little information is available on the specific needs for specialized equipment and equipment in general (see also the discussion under Component 4, equipment). There are no specific budgets for special hazard response, only one general budget that is prioritized according to the most urgent needs.

<sup>50</sup> Mountain Rescue Service, "Stations of the Mountain Rescue Service" [Stanice Gorske Službe Spasavanja], <https://www.gss.rs/stanice>.

### 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 shelters 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 (as opposed to beforehand) is not pragmatic and will likely not provide suitable protection to a displaced population.*

According to the Law of the Serbian Red Cross, the Red Cross is responsible (along with other relevant authorities) for accommodation and care of affected persons. SEM relies on the capacities of the Serbian Red Cross, but SEM also helps in establishing CP units for sheltering people.

The Serbian Red Cross demonstrated excellent capacities in all the relief efforts analyzed; over 7,500 active volunteers were used in the 2014 floods in areas like assessment, water pumping and technical aid, water rescue, evacuation, shelter, global water sanitation and hygiene, first aid, relief goods, and tracing. However, according to the review, these improvised solutions lack proper regulation, services, and standards and are not suited for vulnerable groups.

The Red Cross is a key stakeholder in so-called complex sheltering. Its sheltering capacity is never under 500 persons (at national level), but local Red Cross offices bring the number who can be sheltered to more than 800 persons. The Red Cross maintains a significant number of accommodation containers, which it provided during the migrant crisis, and it organizes the locations where tents will be set up. The shelter locations are indicated within local plans for protection and rescue. The equipment for sheltering is subject to renewal.

#### 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 be suitable locations for disaster-specific operations, such as mobile command posts and resource staging areas. Identifying and planning use of open spaces will help save time and manage resource deployment during a disaster.*

A legal act is in place that regulates the use of private land for the purpose of disaster management operations, specifying the agreement and compensation. The designation of open spaces for disaster management operations should be included in municipalities' protection and rescue plans. The SEM does not maintain records on whether these designations are adequate or kept up to date.

#### 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. Local populations 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 ensure routes are clearly visually identified and local populations are 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 a lack of the 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.*

There are very limited predetermined shelter facilities in the various municipalities in Serbia. Mostly sheltering is improvised in public buildings like schools, which are not specifically designed to meet accepted shelter standards like those of SPHERE. The Red Cross has expertise in supporting sheltering needs, and capacities and experience in dealing with displaced persons. In situations in which sheltering is required, a realistic timeline for transition to permanent housing is not established.

## 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 to track and document injuries and patients transported from the field to the hospital—from admittance to discharge—to ensure continuity of care. Appropriately equipped responders with medical training or training in environment-specific first aid are the ideal personnel for providing medical patient transportation to higher-level medical facilities or hospitals.*

Public health institutions in Serbia are reported to lack a minimum of 450 doctors and 1,000 nurses, but it is not known how many of these jobs can be filled. Total beds in hospital institutions in Serbia in 2018 numbered 39,399, equal to 5.6 beds per 1,000 population (a decrease of 0.1 percent since 2011).<sup>51</sup> This number excludes beds in the private health sector. The number of discharged patients from inpatient institutions in Serbia in 2018 was approximately 1,047,450,<sup>52</sup> the average length of stay per patient was 9.7 days,<sup>53</sup> and the average hospital bed occupancy rate was 65 percent.<sup>54</sup> Serbia has over 350 health care institutions.<sup>55</sup> In recent years, the growing private health care sector is supplementing the public health care system, and medical tourism is on the rise. The country provides national health insurance, and private health care is offered by various insurance providers as well.

Medical response capacities are reported to be further overstretched during disasters, given that emergency medical services have limited capacity in advanced life support systems. On top of that, according to the information received from the SEM, there are no specific preclinical mass casualty incident structures in place that would cover elements such as triage, treatment areas, and advanced medical posts and transport staging. Regional emergency medical response reserves (along the lines of regional fire and rescue reserves) also seem not to exist. The presence of mass casualty incident structures would allow for more efficient use of the limited resources.<sup>56</sup>

The review identified a shortage of emergency social services and dedicated equipment available.

Emergency medical care is the responsibility of the public institutions (Institutes for Public Health). The Law on Health Care<sup>57</sup> contains general provisions about engagement of public health entities in emergencies and disasters, while Article 42 defines the obligations of private health care entities to national and local emergency management authorities. The role of the health care institutions is integrated into local plans for protection and rescue, and will be in the national plan once adopted. The Serbian Red Cross assists at public or sport events and provides logistical support during emergencies and disasters. The Ministry of Health and the Red Cross have an ongoing need for new and well-equipped ambulance vehicles, given the scope of their needs and work. In the COVID-19 crisis, the local and national health system was said to be coping with the level of hospitalizations.

<sup>51</sup> Eurostat, "Hospital Beds by Type of Care, 2018," [https://ec.europa.eu/eurostat/statistics-explained/index.php?title=File:Hospital\\_beds\\_by\\_type\\_of\\_care\\_2018\\_Health20.png](https://ec.europa.eu/eurostat/statistics-explained/index.php?title=File:Hospital_beds_by_type_of_care_2018_Health20.png).

<sup>52</sup> This number is calculated based on 15,000 discharges per 100,000 inhabitants.

<sup>53</sup> Eurostat, "Hospital Discharges and Length of Stay Statistics," 2018, [https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Hospital\\_discharges\\_and\\_length\\_of\\_stay\\_statistics](https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Hospital_discharges_and_length_of_stay_statistics).

<sup>54</sup> Eurostat, "Healthcare Resources Statistics—Beds," 2018, [https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Healthcare\\_resource\\_statistics\\_-\\_beds](https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Healthcare_resource_statistics_-_beds).

<sup>55</sup> Export.gov, "Healthcare Resource Guide: Serbia," November 2019, [https://2016.export.gov/industry/health/healthcareresourceguide/eg\\_main\\_108616.asp](https://2016.export.gov/industry/health/healthcareresourceguide/eg_main_108616.asp).

<sup>56</sup> European Commission, "Peer Review Republic of Serbia: 2018–2019 Programme for Peer Reviews in the Framework of EU Cooperation on Civil Protection and Disaster Risk Management," 2019, p. 64, [https://ec.europa.eu/echo/system/files/2020-03/peer\\_review\\_-\\_report\\_serbia.pdf](https://ec.europa.eu/echo/system/files/2020-03/peer_review_-_report_serbia.pdf).

<sup>57</sup> *Official Gazette of the Republic of Serbia*, No. 25/19.

The emergency medical service is organized within two functionally connected subsystems: prehospital emergency medical care and emergency medical care within hospital activity.

Prehospital emergency medical care is a continuous activity of health care institutions at the primary health care level. It includes indication of medical assistance at the scene and in the health institution; medical transport of critically ill and injured to the inpatient institution, with continuous monitoring of the situation; and provision of the necessary assistance during transport. Prehospital emergency medical care at the municipal level is performed within the regular activities of the selected doctor, his or her associates, and the doctor on standby or on duty team at night, on Sundays, and on public holidays. In a municipality of over 25,000 inhabitants, an emergency medical service can be organized for the admission and care of emergencies.

Emergency medical care within hospital activity is provided through professional teams at the emergency departments of general hospitals and clinical hospital centers, clinics, institutes, and clinical centers.

The Institute for Emergency Medical Aid is a health institution that provides emergency medical care and medical transport of the acutely ill and injured to appropriate health institutions; it also transports patients on dialysis and supplies of medicines in emergencies. There are four such institutes in Serbia, specifically in Belgrade, Novi Sad, Nis, and Kragujevac.

The four institutes cover 33.27 percent of Serbia's population and 12.31 percent of its territory.

Health centers with an organized emergency medical service cover 36.85 percent of Serbia's population and 48.84 percent of its territory.

Health centers that cover less than 25,000 inhabitants do not have a special emergency medical service, but emergency care is performed at the level of the chosen doctor in health centers. These centers cover 29.88 percent of Serbia's population and 33.87 percent of its territory.

One-third of Serbia's population is not covered by an organized emergency medical service.<sup>58</sup>

#### Indicator 4.1.2: Disease Prevention and Core Services

*Rationale given by the R2R diagnostic: A breakdown in public health and WASH (water, sanitation, and hygiene) after disasters 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 that in more developed countries 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 exist, and there is a dedicated workforce in place. The key law referring to disease prevention is the Law on Protection of the Population from Infectious Diseases.<sup>59</sup> According to Article 7, the Institute of Public Health coordinates the implementation of epidemiological surveillance in Serbia and issues expert instructions for epidemiological surveillance for infectious diseases and special health issues. Article 12 regulates the establishment of the interagency governing cooperation and relationship with the World Health Organization, and Articles 51 and 52 address implementation of measures in emergency situations. Epidemiology departments are responsible for disease control in the public hospitals and public health centers.

Equipment is decentralized in concentrated local public health institutes. There are Centers for Disease Control and Prevention within local Institutes for Public Health. The City Institute for Public Health "Belgrade" consists of four units:<sup>60</sup> (i) unit for control and prevention of infectious diseases; (ii) unit for immunization; (iii) unit for health surveillance; and (iv) unit for control and prevention of noncommunicable diseases.

<sup>58</sup> Ministry of Interior, "Disaster Risk Assessment in the Republic of Serbia" [in Serbian], 2019, pp. 79–80, <http://prezentacije.mup.gov.rs/sektorazastituispasavanje/HTML/licence/Procena%20rizika%20od%20katastrofa%20u%20RS.pdf>.

<sup>59</sup> Official Gazette of the Republic of Serbia, Nos. 15/2016, 68/2020, and 136/2020, [https://www.paragraf.rs/propisi/zakon\\_o\\_zastiti\\_stanovnistva\\_od\\_zaraznih\\_bolesti.html](https://www.paragraf.rs/propisi/zakon_o_zastiti_stanovnistva_od_zaraznih_bolesti.html).

<sup>60</sup> City Institute for Public Health Belgrade, "Center for Disease Control and Prevention," <https://www.zdravlje.org.rs/index.php/otnana/centri/epidemiologija/centar-za-kontrolu-i-prevenciju-bolesti>.

The unit for control and prevention of infectious diseases is responsible for maintaining the readiness and equipment of epidemiological teams so they can react and take appropriate measures in situations of imminent danger and risk to health, i.e., emergency situations. According to Article 14 of the statute of the institute, the unit for control and prevention (i) participates in the rapid assessment of the new situation in emergencies, considers the magnitude and extent of the consequences of the disaster, determines the necessary needs of the affected population, identifies immediate health hazards and risk factors, and proposes and takes necessary protection measures; and (ii) determines and implements measures in normal situations and during major disasters and emergencies.<sup>61</sup>

#### 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 and victimization, are the populations most devastated by a disaster. Certain populations, such as the elderly and those with ongoing mental health issues, 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 either exploit or traumatize specific vulnerable populations.*

Besides the general provisions on human rights and freedoms defined in the Serbian Constitution, the Law for Social Protection is the primary law that regulates assistance to vulnerable populations in times of crisis. The law defines social protection as an organized social activity of public interest seeking to provide assistance and empowerment for independent and productive life in the society of individuals and families, to prevent and eliminate the consequences of social exclusion, to ensure material security and independence of the individual and the family in meeting life needs, and to create equal opportunities for independent living and encouraging social inclusion. The law stipulates that the right to social protection belongs to every individual or family who needs social assistance and support to overcome social and life difficulties and create conditions for meeting basic living needs. Under the law, the right to different types of material support may be exercised to ensure a minimum level of subsistence and to support social inclusion.

Issues related to social vulnerability fall under the responsibility of the Ministry of Labour, Employment, Veteran and Social Affairs. The ministry, together with SEM, foreign donors, and NGOs, engages in various program and project activities that provide assistance to vulnerable groups before, during, and after emergencies and disasters.

For example, counseling for disaster-related issues is normally conducted by NGOs, such as Caritas; however, this is not systematic. Some NGOs offer gender support services for women and LGBT groups. The ministry and NGOs provide specific services for children and the elderly in accordance with the Law for Social Protection. SOS Children's Villages, for instance, focused on children during the refugee crisis in the country in 2015.<sup>62</sup> The SEM, donors, and NGOs undertake targeted capacity-building, public awareness, and education activities related to different needs of citizens, including people with disabilities. Other programs have been initiated to support women in emergencies. According to OSCE, women are more affected by disasters than men. The NGO Phenomena, supported by OSCE, has therefore been delivering training courses on emergency response to empower women to respond during unpredicted events.<sup>63</sup> During the COVID-19 crisis, the Serbian Red Cross received access to a ministry database and identified elderly people and those with specific diseases; this information was then integrated into Red Cross response plans. According to its mandate and national legal framework, the Serbian Red Cross provides assistance to vulnerable people and people in isolation, including the chronically ill, children, homeless people, and specific communities such as the Roma population.

<sup>61</sup> City Institute for Public Health Belgrade, "Excerpt from the Statute," <https://www.zdravlje.org.rs/index.php/o-nama/dokumenta/statut>.

<sup>62</sup> SOS Children's Villages, "Serbia: Building Partnerships to Help Refugees," August 23, 2017, <https://www.sos-childrensvillages.org/news/serbia-building-partnerships>.

<sup>63</sup> Organization for Security and Co-operation in Europe, "Strengthening the Role of Women in Disaster Management," August 21, 2019, <https://www.osce.org/mission-to-serbia/428348>.

#### 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 body disposal will slow disaster recovery. Body identification is important if resources permit, as this may give family members their last opportunity for closure.*

If deceased bodies are not dealt with properly, they can attract vectors causing disease. Guidelines concerning respect for the cultural, spiritual, and religious beliefs of the deceased exist. 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, there is a problem with transportation of bodies due to the absence of appropriate and designed vehicles for body recovery and transport. There are protocols and measures for funeral activities taking place 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 communications form a crucial lifeline for responders and provide 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.*

Digital radio systems and communications supporting text are only partially available to responding organizations. Emergency response services are only partially equipped with modern and secure radio communication equipment.

The Ministry of Interior uses last-generation ICT. TETRA coverage is good (at 100 percent) in border areas, but not within the country's interior. SEM depends on the MoI IT network and infrastructure and may provide some suggestions for ICT procurement policies; but it cannot make decision about ICT use within the MoI. TETRA devices and terminals are used in many ways, such as locators or radio stations or for data sharing. Huawei's eLTE is used for video calls, security checks, camera, radio, and cell phones, among others. As part of a pilot project, 30 terminals from this system have recently been put into use in the Belgrade Firefighting Brigade.

In 2021, the United States Agency for International Development (USAID), in partnership with the UNDP, donated ICT equipment to the National Communication Center, the public health institute "Batut" in Belgrade, and 23 local and regional health institutions. Serbia's medical experts are expected to use this equipment to coordinate their COVID-19 response efforts.<sup>64</sup>

SEM uses a so-called "unique" IT system, and SEM's Risk Department does coordination with LGUs regarding the use of this system.

Financial resources appear to pose a problem for (inter)connecting all relevant stakeholders.

#### 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 damage or loss of life. Radio systems for responding agencies should be capable of communicating together to allow for a unified response and to ensure efficient information flow between responders, the command post, and EOC as necessary.*

<sup>64</sup> U.S. Embassy in Serbia, "Batut Establishes National Communication Center with U.S. Assistance," September 24, 2021, <https://rs.usembassy.gov/batut-establishes-national-communication-center-with-u-s-assistance/>.

Observation has shown that interoperability of radio communications between uniformed police, firefighters/civil protection authorities, and medical services is a must, as the comprehensive E-112 system will be implemented in the upcoming period. The latter is expected to improve coordination with all radio systems in the country, but not all public and private institutions are connected to the same network. This situation needs to be remedied to enable rapid information sharing. As uniformed police and SEM are housed together (in Mol), equipment interoperability is not a big issue for them; but there are still some challenges regarding integration, interoperability, and consistency of the procurement policies of ICT for all first responders.

#### 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. It allows voice, data, and video communication that improves situational awareness, provides crucial links to the world outside the emergency or disaster area, and supports use of GIS, incident management systems, and early warning systems technologies.*

There is room to improve connectivity within the country. Serbia has not yet established the criteria, definitions, and interoperability procedures for critical infrastructure. That situation poses serious challenges to communication in emergency operations: communication infrastructure is not officially recognized as critical infrastructure, and specific arrangements for restoration after disasters are not in place. Instead, private sector initiatives are relied on. There are three network operators.

However, some developments have taken 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 under the Digital Agenda. 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.<sup>65</sup>

#### 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. Thus a program for communication infrastructure protection and recovery must include participation of industry partners, and all levels of government. Such participation often requires a legislated mandate that ensures cooperation by all parties and provides some level of protection to private business information.*

Consultations identified an important gap in the free transmission of notifications to the public. Namely, the national E-112 center, responsible for receiving and transmitting information related to the protection and rescue of people, material, and cultural goods, did not send requests to mobile phone operators for free transmission of notifications (SMS messages).<sup>66</sup>

The system of sending generic text messages to citizens as part of the warning system has long been established in European countries and is used in a wide range of situations.

Serbia has an E-112 service (of which the national E-112 center is a part). The competence and functioning of the E-112 service is quite well regulated by the Law on Disaster Risk Reduction and Emergency Management of 2018. The law specifically discusses the system for early warning, notification, and alerting of the population, competent authorities, companies, and other legal entities in the endangered zone, for protection and rescue.

<sup>65</sup> Sanja Grčić and Katarina Tomic, "Broadband Mapping & Development in the Republic of Serbia," paper presented at Regional Conference for Europe on Mapping of Broadband Infrastructure, Warsaw, November 4, 2016, [https://www.itu.int/en/ITU-D/Regional-Presence/Europe/Documents/Events/2016/Broadband%20Mapping/6.%20Tomic%20Serbia\\_BB\\_map\\_2.pdf](https://www.itu.int/en/ITU-D/Regional-Presence/Europe/Documents/Events/2016/Broadband%20Mapping/6.%20Tomic%20Serbia_BB_map_2.pdf).

<sup>66</sup> Nina Nicović, "Zovi E-112" [Call E-112], Danas, October 30, 2021, <https://www.danas.rs/vesti/drustvo/vladavina-prava/zovi-E-112/>.

Still, the main challenge is to capture offenders at the scene of the crime. Even for offenders who are caught in the act and brought to court, denial is quite easy. Understaffing of the inspection services is a huge challenge.

SEM representatives stated that the Serbia Forest Department has an early warning system, like the Macedonian Forest Fire Information System in DELIBLATSKA PEŠČARA, while Hydromet monitors temperatures in forests and has weather alarms (interconnected with the European system).

UNDP is involved in providing personal protective equipment for firefighting and is exploring development of a project to support evaluation of wildfire preparedness. Some actions are envisaged within the annual work plan of the firefighting units, but nothing specific.

There is an ongoing IPA Regional Program with Serbia as one of the Beneficiaries called IPA Floods and Forest Fires. This is EU Support to Flood Prevention and Forest Fire Risk management in the Western Balkan and Turkey.

The Program is structured into two components: Floods and Forest-fires. By fostering regional cooperation and exchange of good practices, the IPA Floods and Fires implementing Consortium collaborates with the local authorities of civil protection and other relevant local agencies and institutions to improve the legal and institutional framework related to the EU floods directive (EUFD), and institutional coordination among all the actors involved in the EUFD implementation, and to improve prevention, preparedness and capacity to respond to forest fires at central, regional and EU level. Activities will include workshops, trainings, table-top and field exercises, exchange of experts, procurement of ground forest firefighting equipment and awareness raising campaigns.<sup>67</sup>

Article 98, Paragraph 2 states that “mobile telephony operators are obliged to provide free transmission of notices of interest for protection and rescue to telephone subscribers at the request of the Ministry of the Interior.”

To make sure that the competent authorities receive important disaster-related information on time, so they can process it and warn the population, the law identifies the E-112 service, which is under the jurisdiction of the Mol, as the main “channel” to which all entities will send the necessary information in times of emergency (such as when pollution exceeds normal limits or when it is necessary to evacuate people due to fire/flood/landslide).

### 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, 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.*

Different methodologies exist to address forest fire risk. The Forest Management Plan contains mitigation actions. The Forest Fire Protection Plan has been implemented and approved by the SEM. In terms of prevention, each forest must have a fire protection plan, and several measures are foreseen to prevent, prepare for, and improve protection against fires: different firefighting vehicles are spread over Serbia according to identified needs; several awareness projects are in place; and a joint cross-border project with Bosnia for forest monitoring is underway. Educational projects are also being delivered in close collaboration with the SEM. One of the main risks concerns limited regulations for private forests where most of the unexploded ordnance from recent conflicts remain, especially in the south. Despite the improvements brought about by the Law on Fire Protection and the Amendment to the Law on Fire Protection, the system seems to focus mainly on the response side. The peer review conducted in 2019 recommends strengthening prevention measures by improving firefighting infrastructure (e.g., creating fire corridors) and establishing continuous training programs for private owners and public authorities.<sup>68</sup> It also suggests improving the regulation of private

<sup>67</sup> More information about project available in the project website at: <https://www.ipaff.eu/>

<sup>68</sup> European Commission, “Peer Review Republic of Serbia: 2018–2019 Programme for Peer Reviews in the Framework of EU Cooperation on Civil Protection and Disaster Risk Management,” 2019, p. 43, [https://ec.europa.eu/echo/system/files/2020-03/peer\\_review\\_-\\_report\\_serbia.pdf](https://ec.europa.eu/echo/system/files/2020-03/peer_review_-_report_serbia.pdf).

forests and conducting educational programs for their owners. The Hydrometeorological Services provide the fire weather index, used to identify meteorological conditions under which forest fires can develop. However, this index does not consider other important parameters (such as vegetation type), and it is mainly used as a starting point in a forecasting system. The peer reviewers suggest improving the fire early warning system by developing a more sophisticated index and using the Copernicus European Forest Fire Information System.<sup>69</sup>

The forest owners can own their own fire units, but these are insufficient for forest fires. In general, local and national stakeholders as well as forest owners lack the needed capacities to deal with forest fires.

SEM does not have a special unit for dealing with wildfires, but all firefighters are trained to deal with them. VFF units intervene in case of wildfires, but they have limited resources, and it is very hard to calculate their response time. In general, it can be noted that there is a need to further strengthening of equipment for dealing with wildfires.

Currently, the national and local stakeholders recognize the importance of implementing the prevention activities during critical seasons. Prior to every fire season, firefighters conduct awareness raising campaigns because wildfires in Serbia are mostly man-made, and from the agriculture sector. The criminal policy and legal provisions contain some articles prohibiting fire ignition in forests and banning fires in some or all forest areas. Inspectors are supposed to find the people who fail to adhere to these policies. Under the law it is forbidden to ignite fire and set fire to crops after restrictions are in force.

#### 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 are 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 ensure effective rescue.*

In accordance with the provisions of the Law on Water, water management is understood as a set of measures and activities aimed at maintaining and improving the water regime, as carried out by several entities:

- The Ministry of Agriculture, Forestry and Water Management, through its administrative body, the Republic Directorate for Water
- The Provincial Secretariat for Agriculture, Water Management and Forestry in the territory of the autonomous province Vojvodina
- Public Water Management Companies, namely “Vode Vojvodine” Vojvodina and “Srbijavode” in the rest of Serbia
- Competent bodies of local self-government units

According to the Floods Directive and its requirements, the Republic Water Directorate completed the Preliminary Flood Risk Assessment (PFRA) in 2012, but this included only fluvial floods. Based on the PFRA, 99 Areas of Potentially Significant Flood Risk (APsFR) have been defined. In the meantime, the Republic Water Directorate started updating and amending the PFRA. The collection of data on flood occurrences in the past (2012–2018) has already been completed. Preparation of flood hazard and flood risk maps was completed in 2020. The adopted methodology is based on the assessment of two types of flood areas: those under current flood hazard (defined as “real”), and those under hazard in the case of overtopping/breaching of flood defense structures (defined as “potential”). The potential impact of climate change was assessed by modeling the effect of higher peak flows.<sup>70</sup> Of the 99 defined APsFR locations, 24 are already mapped within the frameworks of several different projects through different methodologies.

<sup>69</sup> Ibid.

<sup>70</sup> Global Facility for Disaster Reduction and Recovery, Government of Serbia, and World Bank, “Flood Hazard and Risk Mapping: Component 2 of Serbia National Disaster Risk Management Plan (NDRMP),” 2021, <https://documents1.worldbank.org/curated/en/765821614928681676/pdf/Flood-Hazard-and-Risk-Mapping-Component-2-of-Serbia-National-Disaster-Risk-Management-Plan-NDRMP.pdf>.



The IPA (Instrument for Pre-Accession Assistance) II 2014–2020 document entitled “Flood Recovery and Prevention” provides the framework for the flood hazard maps and flood risk maps of the remaining APSFR locations.<sup>71</sup>

Based on the flood hazard maps and flood risk maps, a flood risk management plan will be prepared. An important segment of flood risk management and the operational implementation of flood protection is the role of public water management companies. These are responsible for the implementation of flood protection on waters that are declared as first-order water. Public water management companies also work closely with local self-government units for second-order waters. The Republic Water Directorate and the Hydrometeorological Services are responsible for the early warning systems for flood risk.

The national water management company “Srbijavode” has most of the competences for dealing with flood management in the main river basins of Serbia. At regional level, the Vojvodina region has its own company dealing with waters in its territory. Existing infrastructure is mature and lacks new technology—in some parts of the country the dams are 100 years old. Based on needs assessment and flooding experiences, there is a need to upgrade and update the infrastructure, and serious investment activities will need to be implemented in the next 10 years.

The current flood risk assessment done by Serbia Water Management company covers 95 percent of the territory, and flood-prone areas are identified within this. Serbia Water is responsible for 46 dams (>15 m high) and 350 to 500 smaller dams.

Dam renewal and reconstruction projects are ongoing, with support of the national budget and donors. However, the institutions need to take into consideration the needs for climate change adaptations.

UNDP is involved in the flood protection/DRR activities and in activities referring to climate change and climate-related disasters.

Representatives from the Serbia Water Management company highlighted the need to raise the Kolubara dike and to create retention facilities around it.

The following points are relevant to critical infrastructure in water management:

- The investor must provide all relevant documentation before building starts.
- Critical infrastructure consists most often of retention structures and dikes, but also includes canals/trenches.
- There is a new arrangement with the World Bank for building flood defense facilities.
- Vojvodina is well protected, while central Serbia has challenges with streams that occur after heavy rainfalls.
- Climate change effects are integrated in the work activities and documents.

Recognizing the risk of floods as one of the main ones, over the past years, SEM has established 27 Specialized water rescue teams, consisting of professional fire and rescuers, in all territorial departments for Emergency management on the local level. Members of the teams have undergone the specialized additional training and are equipped for water rescue activities with regular schedule of training and drills. Regional water rescue and rescue teams are equipped with boats with outboard engines and associated specialist equipment.<sup>72</sup>

<sup>71</sup> European Commission, “Serbia: Flood Recovery and Prevention. Instrument for Pre-Accession Assistance (IPA II) 2014-2020.” [https://ec.europa.eu/neighbourhood-enlargement/system/files/2016-12/ipa2014\\_037788.06\\_rs\\_floods\\_recovery\\_and\\_prevention.pdf](https://ec.europa.eu/neighbourhood-enlargement/system/files/2016-12/ipa2014_037788.06_rs_floods_recovery_and_prevention.pdf).

<sup>72</sup> Ministry of Interior, “Disaster Risk Assessment in the Republic of Serbia” [in Serbian], 2019, p. 80, <http://prezentacije.mup.gov.rs/sektorzazastituispasavanje/HTML/licence/Procena%20rizika%20od%20katastrofa%20u%20RS.pdf>.

### 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 inaccessible 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.*

In response to the earthquake risk, over the past years, SEM has formed 8 Regional Medium USAR teams in Belgrade, Novi Sad, Nis, Kragujevac, Valjevo, Bor, Uzice, and Krusevac.

Team members are professional fire and rescue units members that have undergone the specialist training for USAR, at home and abroad by international and local experts. They are equipped with the appropriate specialist equipment and specially trained dogs to find people buried under rubble. They have regular training and drills.

### 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 are weak in Serbia. There is a need for educated personnel, in particular staff trained in chemical, biological, radiological, and nuclear (CBRN) incidents.

Every industrial facility, according to the fire regulation, must have its own firefighting unit that is equipped and trained to respond to any industrial fire. If there is a need, these units call in the professional firefighting unit of SEM.

Depending on the scale of a disaster and the need for additional resources, professional firefighters are usually reinforced with members of the VFF.

In addition, specialized civil protection units are educated, equipped, and trained as operational forces of SEM by the responsible local authority (municipality, city, district) or by companies and other legal entities in accordance with the assessment of risks that represent a potential threat to the territory. Consequently, as a hazard-specific response capacity in the country, a corps of volunteers trained to respond to various imminent risks is mobilized for fire protection, water rescue, and rescue on inaccessible terrain.

Firefighter representatives stated that when hazardous materials are present, their response depends on the emergency's specific characteristics. According to the law, the legal entity should oversee cleanup of any spill, and so on. The same entity oversees the mitigation and recovery as well as decontamination activities.

## 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 their equipment capabilities if responder safety has been fully considered.*

Urban Firefighting and technical rescue is the main responsibility of the professional Fire and Rescue Units of SEM as first responders throughout the country. There are around 3300 Fire-rescuers in SEM, in all 27 territorial Departments for Emergency management of SEM MOI. They are equipped and trained for urban firefighting and technical rescue

since the first Basic course and onwards with obligation to train and educate every day. The Equipment is reported to be old, but maintained in accordance with capabilities for operational everyday use. Professional FRU stated that there is a database with information on available resources. There is a database for vehicles, boats, and hydraulic tools. The maintenance of equipment is done at the local-unit level. Additional and renewal of the existing equipment would be beneficial to the Professional FRU.

Regarding everyday response capacities for the whole territory of Serbia, earlier assessment efforts did not include data on the area and population covered by fire stations, ambulance stations, and civil protection units, or on average response times and average calls per day. The overall picture is that professional fire fighter is adequately equipped but could benefit from additional equipment, and VFF with very limited reliable equipment, especially in rural areas.

Firefighting representatives stated in interviews that there are sufficient capacities to extinguish fires in high-rise buildings, but only in the large cities. Smaller towns do not have such capacities and will ask for assistance in relevant cases. There is a need to carry out an assessment for equipment needs and distribution.

According to the rulebook on staffing and equipment,<sup>73</sup> VFF units must have equipment that corresponds with the first (basic) to third (advanced) equipment categories. About one-third of VFF units are equipped with third-category equipment through a financial injection by the government (RSD 100 million). Only 30 VFF units/societies are equipped with first- and second-category equipment. The average age of vehicles is 40 years, and over time the VFF units have become skilled in maintaining their equipment. In Vojvodina every village has its garage for vehicles. In the south and east the situation is totally different. There is a serious lack of modern and fully equipped firefighting stations. In general, VFF units need significant investment in interconnected and interoperable fixed and mobile radio communication devices.

With regard to protection in the event of fire, the Law on Fire Protection states that all industrial facilities that are classified as being in the first category of risk must have an industrial fire-fighting unit.

Special civil protection units play a limited supporting role due to the lack of adequate equipment and organization; if these were in place, they would enable the units to function independently so they could be easily shifted within the country and could act as a reserve.

Moreover, as firefighters do not have their own training center, finding suitable facilities and training grounds represents a serious challenge. There is limited equipment for training purposes.

#### 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 patient 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 become trapped inside something (household items, farm equipment, commercial/industrial machines, etc.).*

The SEM and Belgrade Firefighting Brigade reported having sufficient equipment and new technology for entrapment rescue, as well as regular experience with it. Having in mind the frequency of traffic accidents, SEM has developed a training program for Traffic accidents and rescue operation in such cases. Professional FRU undergo the training for the traffic accidents, including the Entrapment and Extrication Rescue Capabilities, cutting the vehicles and rescue of trapped people. These training are organized in cooperation with Emergency medical Services responsible for patient care. These training are organized within a facility in Ruma, close to Belgrade. Professional FRU are first responders in traffic accidents, and all of them have training for the extraction and rescue operations using the hydraulic equipment. According to the statistics, there are locations and traffic routs with more frequent accidents. Therefore, within the Belgrade Fire Brigade capabilities, standard hydraulic tools are available in the eight departments with most

<sup>73</sup> Official Gazette of the Republic of Serbia, No. 37/88.

traffic accidents, while the remaining departments have less equipment. There needs to be a rational approach to equipment distribution that takes into account the departments' needs, priorities, and renewing policies. The Department for Emergency Management for the city of Belgrade and its Belgrade Fire and Rescue Brigade require additional equipment.

#### 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.*

Firefighter representatives stated during interviews that rope rescue is not part of the usual training program, and that they do not have specific training or relevant equipment for rope rescue, however, it is a part of USAR training at SEM.

The Mountain Rescue Service has two modalities of functional rope rescue in vertical conditions: trench and cave rescue, and rock rescue.<sup>74</sup>

The Red Cross disaster preparedness program, uniformed police, SEM, and army have rope rescue teams, as they are usually involved in rescue operations for lost or 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 expensive and considered at the apex of emergency response service delivery.*

The Law on DRR and EM includes general safe working practices in confined spaces. Safe working practices in general are covered in the Law on Occupational Safety and Health;<sup>75</sup> they are more specifically included in a series of bylaws on regulated work in confined places. The Law on Occupational Safety and Health specifies obligations in the field of safety and health that all employers must comply with. As indicated in Article 2, however, this law does not apply to military service in the Serbian Army, or to police and protection and rescue activities within the scope of the competent state body, or to protection and rescue activities performed by other entities in accordance with a special law. For those excepted jobs, health at work is regulated by a special law and regulations adopted on the basis of that law. "The employer is obliged to provide first aid, to train the appropriate number of employees for first aid and provide means and equipment for first aid taking into account the assessed risks, technological process, organization, nature and scope of the work process, the number of employees [in the] work process, number of work shifts, number of location-separated units, frequency of injuries at work and distance to the nearest medical care. The provision of first aid must be organized in such a way that first aid is available to every employee during working hours, in all shifts and at all locations."<sup>76</sup> New buildings are inspected prior to first use; however, this is done according to the plans and law on fire prevention, and not to determine the structural safety of the building.

This specialized rescue capability is not a part of the regular training program for the professional FF, but it is part of the USAR training of SEM. Professional FF of SEM on the local level, have a number of USAR trained and or experienced fire-rescuers and limited equipment for confined space rescue. The teams are equipped with various tools and devices for locating, finding, and rescuing missing persons in the rubble. These include equipment for rescue from heights and depths; for drilling, breaking, and piercing concrete structures; and for lifting and pulling loads. Audio and visual terrain search devices are used, as well as rescue dogs.<sup>77</sup>

<sup>74</sup> Mountain Rescue Service, "Rescue Domains," <https://www.gss.rs/domeni-spasavanja>.

<sup>75</sup> Official Gazette of the Republic of Serbia, Nos. 101/05, 91/151, and 113/17.

<sup>76</sup> Law on Occupational Safety and Health, Official Gazette of the Republic of Serbia, Nos. 101/05, 91/151, and 113/17.

<sup>77</sup> The information is from the SEM Facebook page, May 24, 2021, <https://www.facebook.com/SVSMUP/posts/4123783940998428/>.

## 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 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 manage incidents. Ideally an incident organization structure is consistent with internationally best practice when forming system standards.*

In accordance with the Law on Emergency Situations and the regulation on the formation of Emergency Response Headquarters, the Serbian government will, through the National Emergency Management Headquarters and SEM, directly manage major emergency situations or those that have affected several local self-government units. The commander of the national headquarters will be a member of the government (minister of interior), while the chief officer will be the head of SEM. On the local level, the commander of the Municipal Emergency Response HQ is the mayor, and the chief officer is the head of the territorial Department for Emergency Management of SEM.

According to this institutional setup, professional firefighters in Serbia are organized over 27 districts at the local level. In total, there are 158 firefighter units in Serbia, SEM is responsible for prevention activities, and their competences encompass procurement, managing goods and vehicles, and training. They receive financial means from the budget of the MoI, but they are still working on increasing the budget for capital investment in infrastructure.

In the case of disasters, the following fire and rescue and civil protection units and teams can be used:

- Everyday professional fire and rescue (SEM) and ambulance personnel (MoH).
- Specialized teams staffed by professional fire and rescue personnel.
- Volunteer firefighting units.
- Specialized civil protection units staffed by voluntary personnel.
- General civil protection units staffed by voluntary personnel.

The civil protection units are educated, equipped, and trained as operational forces for the execution of civil protection tasks. They come in two forms: specialized units and general-purpose units.

- Depending on the scale of a disaster and the need for additional resources, professional firefighters are usually reinforced with members of specialized or general-purpose civil protection units, which are reserve volunteer forces. Specialized civil protection units are formed by the responsible local authority (municipality, city, district) or by companies and other legal entities in accordance with the assessment of risks that represent a potential threat to the territory. They are formed around the following areas of expertise: 1. Firefighting, 2. Rescue on water and under water, 3. Rescue from ruins, 4. Sheltering, 5. First aid, 6. RHB protection, 7. First aid and sheltering. In addition specialized CP Units are created by the LSG for Alerting.

Professional Fire Rescue units of SEM and its specialized teams are fundamental actors in the emergency response in Serbia. In addition to the everyday fire and rescue calls and requests, they can for example perform water rescue, high-capacity pumping, and urban search and rescue (although teams were not certified by the International Search and Rescue Advisory Group as of May 2019). The specialized teams are staffed by professional firefighters with specialized training. This is a sensible approach, as it ensures that specialized responders are experienced rescuers whose specialized training supplements their experience with everyday fire and rescue calls.

However, that approach further strains the already overstretched ordinary fire and rescue response capacity: when a disaster strikes, the firefighters with specialized training (around 15–20 percent of the firefighter workforce) leave their station and meet with specialized firefighters from other stations to form the specialized teams—an arrangement that leaves their home fire stations understaffed.

That lack of personnel may then be counterbalanced first by calling in designated standby personnel and then by calling in all off-duty personnel. Initially, all personnel may then work on a 24/7 basis. For longer-lasting disasters, this is clearly unsustainable. Instead, during the disaster, an adapted shift system is needed.<sup>78</sup>

The review identified an unsustainable incident organization structure for long-term disasters.

Interviews and observation suggest that the central authorities have a clear EP&R outlook. Local civil protection authorities are still not able to follow that vision, even though some significant efforts were made to invest in human capital and material resources during the last five years. The legal provisions well define the competences of all relevant stakeholders, but understaffing, inadequate integration of digitalization/technology in performing daily tasks, insufficient investments at local level, and lack of interagency cooperation in broader context are still a challenge. The side and complementary stakeholders (critical infrastructure, private sector, VFFs, specialized NGOs, professional societies, etc.) still have challenges regarding the rate of integration in the system, interaction with formal structure, and equipment.

#### 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 fully in place yet, the E-112 aims at being flexible and scalable and at prioritizing response options. Interoperability, multi-agency involvement, coordination, and flexibility in performing tasks/activities are achieved in a “manual” way, based on already established relationships and communication between the persons who manage and coordinate relevant stakeholders. Of course, there are certain subjective dimensions in communication, which the introduction of certain technical solutions can partially overcome.

#### 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 provide responders the opportunity 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.*

As the comprehensive E-112 is in a very early stage of its design, the need for appropriate training and materials has been identified, but current discussions and actions are not at the point when reference materials, training materials, and exercise scenarios should be integrated and tested.

<sup>78</sup> European Commission, “Peer Review Republic of Serbia: 2018–2019 Programme for Peer Reviews in the Framework of EU Cooperation on Civil Protection and Disaster Risk Management,” 2019, p. 63, [https://ec.europa.eu/echo/system/files/2020-03/peer\\_review\\_-\\_report\\_serbia.pdf](https://ec.europa.eu/echo/system/files/2020-03/peer_review_-_report_serbia.pdf).

#### 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. To ensure collective preparedness of response agencies, sharing of personnel and resources through a formal process can help manage costs and improve response efficiency. This personnel and resource sharing begins with shared understanding of what supports may be available to responding agencies when they need them the most.*

In Serbia, the local civil protection authorities have the key role in dealing with emergencies and disasters. They rely on central institutions for 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 on which types of support to send is made at central level; it does not depend on municipal authorities' request for specific functions according to the situation at hand. Serbia does not have a database of available common resources.

There are cases when a single person is nominated as specialist/expert in several stakeholders/institutions, creating an impossible situation in which a single individual holds several capacities. Some forms of advisory councils/boards do not exist even under routine circumstances, let alone during emergencies.

### 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. This requires 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 be used in support of emergency planning or response.*

Organized trainings, seminars, and exercises have been held to improve capabilities and capacities of the management of the municipal HQs. Regarding personnel, at least in Belgrade, there is a relatively high turnover in the municipalities, which necessitates continuous training programs.

Training for emergency management headquarters is planned and performed at the national and local levels to increase the local coping capacities. These are conducted through a series of workshops and / or table top exercises to enhance the coordination and collaboration of the different level Emergency management HQ in case of an Emergency. As mentioned, there are 3300 of professional Fire and Rescue Units of the SEM, that are first responders to any emergency. A total of 3,715 members of the SCPU within 111 formed SCPU. Members of SCPU are adult citizens of the Republic of Serbia who are therefore also obliged to civil protection and can be assigned to civil protection units. The SCPU can also be accessed voluntarily with the consent of the competent service of the Ministry of the Interior (SEM), and their previously acquired knowledge, ability, inclination and expressed wishes are taken into account. After basic training, units have only one day of continuous training per year.

All DRR capacity-building activities include structures of the protection and rescue system at all levels, from the municipal to the national.

SEM conducts training and seminars for commanders and members of the municipal emergency management HQs. In accordance with this training, general-purpose civil protection units are formed at the local level (from rural settlements to the municipality/city level with the involvement of volunteers) and specialized civil protection units at the national level.<sup>79</sup>

<sup>79</sup> Republic of Serbia, "Serbia: National Progress Report on the Implementation of the Hyogo Framework for Action (2013–2015)," 2015, p. 45, [https://www.preventionweb.net/files/42384\\_SRB\\_NationalHFAPprogress\\_2013-15.pdf](https://www.preventionweb.net/files/42384_SRB_NationalHFAPprogress_2013-15.pdf).

With limited personnel and training, officers are overworked and required to deal with many conflicting priorities, which in turn leads to a lack of capacity or willingness to meet legal obligations. As a result, the level of readiness, equipment, and training at the local level is generally quite low, though with some variation.

Despite all these training initiatives, there is apparently no comprehensive training and exercise program at this time. Rather, the various activities occur on an ad hoc basis, when funding is available from national and international actors. However, activities are not necessarily coordinated.

All members of professional fire and rescue units undergo regular basic training for fire-rescue activities, so-called basic course. Following that, there are regular trainings, education and drills on regular basis. There are additional specialized trainings for specialized teams – WR, USAR and HCP as well as the technical traffic accidents rescue activities. The national training center for emergency management, placed in another Sector within the MOI defines a yearly program for training of all SEM personnel for various topics to ensure the professional development. The main source for learning remains daily practice on the job, used as lessons identified and learned and practiced for the future events and are included in regular training. Trainings are conducted by experienced fire-rescuers that have undergone the training of trainers program but are limited in number. Besides the national level trainings, there are additional international trainings with partners ensuring the development of the interoperability with international actors, especially for the specialized teams.

The firefighting units' representatives stated that the emergency first responders have specialized USAR training. Even if this training was to be offered to firefighters, there would not be enough certified personnel to deliver it. The training is provided through cooperation with foreign civil protection authorities (the French civil protection service, for example) and uses a train-the-trainer approach. There are 20–25 people trained per year.

Training priority is given to firefighters (as of May 2019) and then to civil protection volunteers. The firefighters certainly need training, as they have so many roles to fulfill—classical fire and rescue response, specialized tasks like urban search and rescue, water rescue, and high-capacity pumping—and as they essentially form the backbone of Serbia's disaster response. The Red Cross delivers first aid training to firefighters.

During the interviews, firefighter representatives stated that they provide first aid but not medical assistance to the concerned parties. Concerning the relationship between firefighters and medical staff in providing first aid training, the firefighter representatives stated that they tried to involve medical personnel in common training, but the arrangement was very problematic due to special conditions and did not work out. Firefighters are trained to extract people and hand over the injured persons to the medical response team from the ambulance. Sometimes medical teams are available and sometimes they are not, due to scarcity. In Serbia, medical aid cannot legally be provided by anyone who is not a doctor. Firefighters do not have any advanced paramedic training and appropriate equipment to deal with medical support. They have some 20 persons in total trained beyond first aid.

Traditional emergency responders, including the uniformed police and armed forces, have their own trainings (mostly for emergencies, with almost no training for search and rescue); but training programs for nontraditional responders do not exist.

State organizations cooperate with private sector companies for specific training and exercises. According to the Law on DRR and EM, public enterprises and trade companies are obliged to participate in training and exercises on how to handle emergency situations.



### 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 or on-site training, instructor-led classroom training, self-directed training, hands-on study, etc. While online training for basic concepts may be easy to deliver for those whose primary role is not emergency preparedness and response, in-person training coupled with workshop activities is the most meaningful and is better absorbed by participants. Having a variety of training methods is important to ensure comprehensive understanding of the material.*

In addition to not being comprehensive, emergency management training programs for all relevant stakeholders is not robust and could use more systematic approach. This should include that training material and the activities associated with updating it according to the latest developments, technologies, and equipment. Various donors, through different Projects and Donors, like UNDP, facilitate and fund training for relevant EP&R stakeholders at different levels and on different topics. Besides being trained by SEM as specified in the Law on DRR and EM, VFF units provide training and drills for themselves and for the beneficiaries within the local civil protection system.

The insufficient number of qualified trainers—except in the Red Cross and SEM—is a concern. SEM recruits the trainers from its more experienced practitioners, but without an appropriate training facility it is hard to establish an internal training unit within SEM.

There are experts in disaster management within academia, specifically in the Faculty of Security in Belgrade University, the Policing and Criminalistics University, and the Military Academy.

### 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 and also 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.*

The firefighter representatives stated during the interviews that there is a formal assessment program to ensure the quality of training. There are some evaluations of the knowledge acquired, of the trainers, and of the conditions and the facilities provided for training purposes.

### Indicator 5.2.4: Planning and Tracking of Personnel Development

*Rationale given by the R2R diagnostic: Formally and deliberately planning for, and tracking results of, personnel development across responder agencies ensures agency-specific capacity is known. This information provides agencies with heightened awareness and advanced knowledge of when additional resources or special emphasis may be required to ensure they have the capacity to continually meet their assigned accountabilities.*

There is an official Professional development Program for the education of the professional FRU following their Basic course following their employment within the SEM MOI. This is a proscribed activity by the SEM and National training center for Emergency Management of the Sector for Human resources within the MOI. There are certain standards all professional FRU of SEM need to undergo each year and then additional trainings and courses for further development for specialized functions such as WR, USAR, Technical interventions in Traffic, HCP and etc. with addition of international trainings. Furthermore, according to the Law, members of professional FRU are employed following the enrolment into the Basic course for the Fire and Rescue Units following the public contest with defined set of preconditions to be met (physical, psychological and an interview) for the enrolment. Only candidates that successfully pass the basic course will get the chance to become the member of the professional FRU of SEM MOI.

Members of Fire and rescue Units of SEM MOI undergo the same revision as do the Police forces. On the other hand, having in mind that the VFF are voluntary associations of citizens they comply to different set of standards set by the Law on Voluntary firefighters. Bearing in mind that this force is its recent renewal, all of the VFF have to undergo a Basic Training Program proscribed by the SEM.

## 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.*

Since 2011, training sessions for elected officials have been designed to provide at least a basic level of knowledge in DRM and EP&R specifically. For instance, the SEM complements municipal emergency management capacities through three-day training sessions for the HQ commanders (that is, the mayors), heads, and all members of the local emergency management headquarters. SEM local unit commanders work closely with the mayors and brief them on how to act in times of emergency; however, there is a need for further training and exercises. The OSCE and Caritas have supported municipal training with, for example, tabletop exercises. SEM with OSCE are adding additional TTX for the Emergency management HQ..

Most exercises in the country are small in scale and ad hoc, but as stated in its work plan, SEM organizes one or two large-scale exercises per year. In November 2021, a multi-stakeholder exercise was organized. This exercise, named "SYSTEM2021" included more than 8,000 people, from various subjects and forces of protection and rescue system including the 50 LSGs and their emergency management HQ practicing collaboration and cooperation in a multi-hazard emergency situation.

### Indicator 5.3.2: Collaboration and Coordination

*Rationale given by the R2R diagnostic: Collaborative and centrally coordinated exercises that involve multiple response agencies provide opportunity 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 that involve a variety of sectors and agencies to respond effectively to incidents.*

An example of the further need for collaboration and coordination of exercises as observed by the VFF association of Serbia is the need for coordination and collaboration in trainings for all relevant stakeholders. The need of joint trainings for complex rescue maneuvers involving airlifting of injured persons was specifically mentioned. 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 always room for more training and exercises at regional level with neighboring countries.

Collaborative and centrally coordinated exercises are considered and perceived as team-building modules; beside testing the operative plans, they offer the people and institutions involved an opportunity to meet each other, work together, and develop a long-term cooperative relationship in EP&R.

There is need to establish a platform/formal system for sharing knowledge from local, national, and international exercises and projects.

### 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 both 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.*

SEM representatives stated in interviews that all drills are evaluated according to SEM's methodology and existing templates for evaluation.

The main focus is the lessons learned about coordination between different actors, testing of the response time, and chain of command (principle of subordination).

The firefighter units' representatives stated that there is a systematic approach to evaluating response to actual emergencies. After every emergency, firefighters conduct analysis to identify weak points. If the same patterns start occurring more frequently, they incorporate the solutions and lessons learned in training modules.

#### 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 a complex field exercise with multiple stakeholders. Significant time and money must be dedicated to developing 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 is equal to 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.*

While SEM representatives indicated that they have operational capacities for organizing robust exercises, the budgets for organizing exercises and drills are very limited, which influences the planning process.

### Criterion 5.4: International Support Coordination

#### Indicator 5.4.1: Agency Assigned to Coordinate International Support

*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, operational framework, and oversight to ensure outcomes are being met.*

Serbia cooperates with a broad range of international partners. In 2015, Serbia signed an agreement with the EU to participate in the UCPM. From the EU side, there are several programs under the IPA aiming to increase Serbia's effective cooperation with the mechanism, foster regional cooperation, and support capacity building. These include programs under EU-IPA I, EU-IPA II (including IPA Floods), and IPA DRAM (Disaster Risk Assessment and Mapping and the current IPA in the region on Floods and Fires). Other donors and international players, such as the OSCE, UNDP, UNDRR, the Capacity for Disaster Reduction Initiative, and the World Bank, have contributed to the same aim. The same is true for individual governments such as Sweden and Japan. The Russian-Serbian Humanitarian Center has been operating for nine years within the framework of bilateral cooperation between the EMERCOM of the Russian Federation and the Republic of Serbia.<sup>80</sup>

Serbia participates in regional cooperation initiatives like the Disaster Preparedness and Prevention Initiative for Southeastern Europe (DPPI SEE). Serbia has signed agreements on cooperation in the field of emergency situations with Ukraine (2004), Russia (2009), Bosnia and Herzegovina (2010), Montenegro (2010), Azerbaijan (2011), Slovakia (2011), Hungary (2013), Croatia (2014), Slovenia (2015), Bulgaria (2019), Austria (2021), Republic of Cyprus (2021),

<sup>80</sup> Law on Confirmation of the Agreement between the Government of the Republic of Serbia and the Government of the Russian Federation on the Establishment of the Serbian-Russian Humanitarian Center, International Negotiations No. 6/12, December 24, 2012.

and North Macedonia and Albania (trilateral, 2021). The Law on DRR and EM anticipates the receipt and provision of international assistance and envisages for this purpose direct communication with the competent authorities of other states and international organizations (the national E-112 center will be the contact point). In addition, the law highlights the coordination required for crossing of state borders, for activities of international protection and rescue forces, and for the actual acceptance and distribution of international assistance on Serbian territory.

Considering the limited response capacity the country has at its disposal, the coordination support mechanism, once put into action, helps ensure timely and organized international relief operations.

The country has bilateral cooperation agreements and has established collaboration with UCPM, NATO, UNDP, UNDRR, JICA, OSCE, and GIZ, among others. Serbia has established regional cooperation on natural hazards with other Western Balkan countries, and also cooperates on a bilateral basis and within DPPI SEE.

The Law on DRR and EM regulates the participation of international organizations in the prevention, handling, and early warning of an eventual emergency or disaster. SEM represents the government in this context and is focal point for the UCPM and for sending requests to (or receiving requests from) the Euro-Atlantic Disaster Response Coordination Centre (EARDCC) of NATO. Currently, there are no comprehensive plans for coordination in place, and decisions are made ad hoc. Although experienced individuals do contribute to relevant decision-making, a database of their profiles is missing.

Political leaders should be better trained on the international EP&R system so that incoming assistance is based on the actual needs on the ground and so that donations can be coordinated.

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

*Rationale given by the R2R diagnostic: Evaluation is the key to a successful exercise. It is where both 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 coordination between the EU, the World Bank, and the UN was 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 SEM formally follows Sphere standards, but the standards are not adopted within legislation. The SEM also has contracts in place with private companies to support national –though not international–response in country. There are no processes to track and evaluate the quality of international support.

There is an ongoing DG ECHO (Directorate-General Humanitarian Aid) project (X-Stock, 2020–2022) with the Red Cross in the region that focuses on movement of personnel, equipment, and materials in both directions in emergencies and disasters.<sup>81</sup> One of the goals is developing the proposal for procedures and elaborating an e-platform for items needed and available, and for providing and receiving international assistance.

The SEM representatives stated that the country is seeking to implement the EU's Host Nation Support Guidelines and to transform them into a national legal framework and procedures.

<sup>81</sup> European Commission, "Enhancing Cross-Border Preparedness through Shared Management of Emergency Stock in South East Europe (X-STOCK)," [https://ec.europa.eu/echo/funding-evaluations/financing-civil-protection/prevention-and-preparedness-projects-civil-protection/overview-past-track-i-and-track-ii-projects/enhancing-cross-border-preparedness-through-shared-management-emergency-stock-south-east-europe-x\\_en](https://ec.europa.eu/echo/funding-evaluations/financing-civil-protection/prevention-and-preparedness-projects-civil-protection/overview-past-track-i-and-track-ii-projects/enhancing-cross-border-preparedness-through-shared-management-emergency-stock-south-east-europe-x_en).

#### 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. The agency coordinating support should have agreements or memorandums of understanding established with warehouses, airports, and transportation entities before a disaster to enable expedited and efficient movement of aid resources.*

SEM follows the Host Nation Support Guidelines of the EU; however, no actual formal agreements are in place for handling and receiving incoming disaster aid resources. In general, incoming EU relief personnel have visa-free status as EU citizens or through other bilateral agreements.

#### 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. 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 weak, with no government-supported process in place for the prioritization of disaster aid distribution and no formal agreements that include cost-recovery elements.

However, in practice, these functions have been executed by the Red Cross.

There is a need for more training and experience in how to manage complex logistics system under difficult circumstances.

# Annex 2

## Ready2Respond methodology and approach

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### Methodology

#### Goal

Ready2Respond improves national, sub-national and city resilience mechanisms and protects development gains through investments in emergency preparedness and response (EP&R) systems informed by the encompassing City Resilience Program (CRP) and other World Bank platforms.

#### Objective

Ready2Respond provides timely, technical expertise, and global support to World Bank teams with implementation tools and techniques as they pursue EP&R development investments. The purpose of this framework document is to provide a knowledge base for the generation of more targeted guidance and reference materials for task team leaders and their clients regarding EP&R programs, and to inform future World Bank Group (WBG) operations and technical assistance to countries.

#### Methodology in detail

Within EP&R systems, there are five primary components that enable a high-functioning capacity. These are a) Personnel, b) Facilities, c) Equipment, d) Information, and e) Legal and Institutional Framework. These elements, whether implied or explicitly categorized, are common across various national disaster preparedness systems, development partner preparedness platforms and international organizations that address disaster resilience. Development partner preparedness platform examples include International Federation of Red Cross/Red Crescent, Business Continuity Institute and the Global Preparedness Partnership. Effective and contextualized preparedness system examples from other national governments include the United States of America's National Incident Management System, Canada's National Emergency Response System, the United Kingdom's Emergency Response and Recovery Guidance, Mexico's National Civil Protection System, and notably, Japan's Disaster Management System, amongst many others. Ready2Respond will look to these established national programs, and their city level applications, as well as more recent developments, such as those capacitated by ISMEP and BURP, for best practices, lessons learned, knowledge exchange/study tours and twinning peer-to-peer learning events. It is also vital to assess the systems, equipment, and protocols formally or informally developed for addressing emergencies in cities with similar typologies, hazard and exposure profiles, and available response resources. Additionally, the Ready2Respond will identify specific training programs on EP&R and training facilities around the world which could benefit the EP&R project design and implementation.

#### Legal and Institutional Framework

Internal and external clarity about the role of various public and private agencies is critical during disaster and emergency response. Where ambiguity exists, so does inefficiency and jurisdictional overlap. When lives and economic loss are threatened during an event, this ambiguity can increase both potential and actual losses. To address this challenge, improvements regarding preparedness and response roles can be a potent means to improve resilience at various levels of government. Further, clarity in this area ensures that World Bank investments do not lead policy through capacity improvements; rather these investments ensure that financial and technical support is provided at the right time, to the right agency. Ideally these accountabilities are clearly enshrined in legislation with directive regulations. Where possible, deconflicted policy instruments identify the operational expectations on those agencies that are assigned a preparedness and response mandate. However, even in the absence of complete organizational clarity, investment in preparedness and response can often improve on a jurisdiction's ability to mitigate impacts and limit disaster and emergency related losses.

## Information

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 to provide local residents, and the response teams that support them, with advance notice of emerging hazardous events. As well, the coordination of emergency information from responding agencies and social media 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 geo-referenced emergency information, captured digitally and shared electronically, provides decision-makers with a key resource for planning across time scales to reduce risk. However, for quality information to have an impact, it must be utilized by well-trained, committed personnel that have the appropriate equipment to respond safely and effectively.

## Facilities

Coordination of effort for emergency preparedness and response 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 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 service is disrupted. This component ensures that there is a nexus for information, personnel and equipment as an emergency preparedness and response system matures through focused investment.

## Equipment

The appropriate acquisition, use and maintenance of preparedness and response equipment ensures timely information sharing and safe, effective rescue operations. It ensures the ability to effectively communicate despite the harshest possible conditions. These investments assist governments to overcome the capital requirements to ensure access to life-saving technologies and resources. Combined with established parts and service supply chain, it enables governments to ensure its core preparedness and response agencies have the tools to safely and effectively deliver their service.

## Personnel

A highly skilled and experienced workforce is the most valuable resource in any disaster preparedness and response system. To achieve this, a culture of preparedness must be established that places the trust of the public and political body in the agencies tasked with ensuring public safety and minimizing economic disruptions. This requires intensive and extensive training of those involved in emergency preparedness and response to acquire knowledge, develop skills and gain practical experience. This development of personnel must take advantage of the best available plans and information, facilities and equipment to Ready2Respond 16 ensure an interoperable systems approach is broadly understood. It must also enable deep capability in focused areas of expertise to ensure investment in personnel development transitions from the individual to the team, and from the team to the agency culture.

## Mission and data collection

PPI completed a one week mission in Serbia. The mission objective was to collect the needed data using the forms and guidance provided by the R2R guide. This included a project initiation meeting coordinated and proceeding to gather and collate the data to complete the diagnostic. Interviews were conducted with a broad range of relevant stakeholders, as determined by the pre-mission planning and guided by the proposed interview list in the Field Guidance section of the R2R user guide.

Prior to each interview questionnaires were shared to facilitate preparation and a memo on the assessment process was shared. The information note is included on the following pages. Annex 3 contains the interview schedule.



## Emergency Preparedness and Response Assessment in Serbia 2021

September 2021

### Why this note?

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This note is to inform Governmental and non-Governmental Emergency Preparedness and Response (EP&R) contact persons on the goal of the World Bank assessment project in Serbia, the diagnostic methodology, the phases and activities required in preparing for interviews and reporting on the outcome.

### Possible alternative approach due to the COVID 19

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The information gathering for assessments would normally take place during face to face interviews and group workshops in Serbia. The assessment team is planning to visit Serbia during the third or fourth week of October. If during this period the appropriate precautionary measures related to Covid prevent face to face interviews to take place, PPI will propose alternative online methods of interviewing. Because of the importance of the project, the World Bank has given its consent to use alternative approaches which includes online video conferencing interviews, and when deemed necessary, other digital ways of data gathering. This way of working creates the possibility to move forward with the assessment that will inform capacity development in order to strategically build resilience against future shocks.

### Objective of the project

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*The objective of the project is to generate:*

1. **Country-specific assessment of the emergency preparedness and response (EP&R) capacity;**
2. **To identify priority EP&R investment opportunities**

### Why this assessment and investment plan?

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#### *Introduction*

The World Bank, the EU, UN(DP), individual countries and different entities have been - and are still - engaged in assisting the strengthening of disaster preparedness and response capacities in support of local authorities in Serbia. Initiatives are ongoing and the implementation will continue independent of this assessment. Related to the many different initiatives and projects, assessments have been executed, project documents were written and evaluations were completed. Up until now the different program and project approaches—although positive and beneficial to Emergency Preparedness and Response (EP&R)—were guided by a variety of methodological approaches. As a result of utilizing different approaches, it is felt by the World Bank and the EU that there is insufficient comprehensive insight into the overall state of affairs in EP&R development.



### Future development financing and planning

A transition of existing written documentation on EP&R—and newly to be obtained additional data by means of interviewing and or workshops—into one accepted methodological framework is expected to benefit future development and investment planning. The World Bank “Ready to Respond” framework (R2R) has been chosen for this specific assessment context and will be applied in Serbia as the single methodological diagnostic approach<sup>82</sup>.

*Using your country expertise, knowledge and network of connections, your assistance is required to execute this project by means of: 1. Assistance in the inventory of relevant documents, 2. help with preparations for and assistance while carrying out online interviews and other forms of information gathering, and 3. gathering feedback from relevant experts regarding the outcomes of interviews and meetings.*

### About the R2R Diagnostic

In order to enable simplicity, the R2R diagnostic in essence is a set of no less than 360 yes or no questions (0/1). In the diagnostic these 360 questions are known as attributes. Very mature and well developed EP&R systems will already have all these attributes in place, whereas in less than fully matured systems, various elements of the R2R diagnostic will be absent. The diagnostic will help to identify these missing elements so that they could be acknowledged as capacity development needs and opportunities.

Country specific situations and/or disaster threats that fall outside of the scope of the R2R diagnostic, but are nonetheless important for the further development of EP&R capacities, can, should, and will also be recorded in the overall assessment observations, conclusions and recommendations. Although the R2R diagnostic can appear to be rigid, it should actually be implemented with some degree of flexibility in order for it to grasp and fit a given jurisdictional context and eventually become part of its system. Examples of observations that could be relevant to EP&R, but fall outside the scope of the R2R diagnostic could be: oil or chemical spills and other large scale environmental hazards, Hydro-electric power plants, potential terrorist threats or the undermining and destabilizing effects of organized crime. Some of these examples could be considered part of the National Security policy domain and for that reason might end up being excluded from the scope of EP&R. This is where tailoring the R2R diagnostic to the specific policy definitions and approaches in a jurisdiction comes into play.

*Your assistance in identifying EP&R topics that fall outside of the R2R diagnostic is highly appreciated.*

The 360 “attributes” are the most detailed elements of the R2R Diagnostic. “Attributes” are linked to “Indicators”, that are linked to “Criteria” that are in turn linked to Components. In the PPI “R2R diagnostic tool” Excel sheet - also shared with you- all 5 components, 18 Criteria, 72 Indicators and 360 Attributes are recorded. You can use the Excel tool to prepare for upcoming meetings. Every online interview will focus on a selection of R2R diagnostic attributes. The results of the desk review will assist in acquiring the correct focus and the interviewees will be informed of the content of the interviews prior to the meeting.

### Project phases and planning

- Step 1.** PPI Analysts are in the process of transitioning the content of relevant EP&R documents that are currently available to the PPI team into the R2R diagnostic for Serbia;
- Step 2.** Draft a synopsis of approximately 10 pages and identify any R2R diagnostic information gaps;
- Step 3.** Bring focus on the R2R diagnostic elements that require additional data gathering during the interview meetings;

<sup>82</sup> Reference is made to the following World Bank document: “R2RFramework Document” 2017.

- Step 4.** Interact with identified (non) governmental organizations and contact persons on desk review findings and request for assistance in finding additional documentation and to identify, inform and (assist in) preparing key stakeholder representatives for the interviews;
- Step 5.** During the last week of October: Interviews with keystakeholders with the goal to 1. confirm the desk review findings and 2. gather additional data and information to complete the R2R diagnostic;
- Step 6.** Draft final assessment results;
- Step 7.** Advise on investment planning;
- Step 8.** Integrate assessment results and advice on investment planning into onefinal document.
- Step 9.** Present final results to the World Bank and the authorities in Serbia.

### **PPI field work team and priorities**

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Data gathering will be done by key expert individual interviews. Translation will be available if necessary. It is expected that 20 confirmed meetings with interviewees of approximately two hours will still allow for some flexibility for additional meetings during the five-day field work trips.

*The majority of the interviews will be held with governmental authorities and response agencies, three to four sessions with NGO's and two or three with the private sector responsible for critical infrastructure like communication, utilities and or fuel companies.*

The focus and selection of interviewees is determined by the results of the desk review. All interviews will target a certain set of attributes that will be identified and sent to the interviewees prior to the online interview sessions. Our local PPI expert will assist in preparing relevant (non) governmental stakeholders and inform them on the upcoming assessment goals and process. The information in this document and its attachments can be used for this.

# Annex 3

## Ready2Respond methodology and approach

### Methodology

#### Goal

Ready2Respond improves national, sub-national and city resilience mechanisms and protects development gains through investments in emergency preparedness and response (EP&R) systems informed by the encompassing City Resilience Program (CRP) and other World Bank platforms.

October 25		
Time	Institution(s)	Representative(s)
08.30 – 10.45	Coordination meeting with Ministry of Interior, Sector for Emergency Management Department for Legal Affairs and International Cooperation	Mr. Ivan Baras, Assistant Head of Sector Ms. Jelena Dimic, Deputy Head
11.00 – 12.00	Meeting with Acting Assistant Minister of Interior and Head of Sector for Emergency Management	Mr. Luka Causic
13.00 – 14.00	Meeting with Public Investment Management Office	Ms. Sandra Nedeljkovic, Acting Deputy Director Ms. Neda Maletic
October 26		
09.00 – 11.00	Meetings with Department for Fire and Rescue Units and Civil Protection Department for Economic, Material and Technical Support Section for Projects and Donations Sector for Material and Financial Affairs of Mol Sector for International Cooperation, European Affairs and Planning	Mr. Sasa Rancic, Assistant Head of Department Mr. Milorad Spasojevic Ms. Ana Mozgon Kuneski, Deputy Head of Department Ms. Nina Nikolic, Head of Section Ms. Gordana Popovic Mr. Predrag Jovanovic
12.00 – 13.00	Meeting with UNDP	Mr. Zarko Petrovic Ms. Jelena Maric Lukovic
13.00 – 15.30	Meeting with EU Delegation	Mr. Spyros Afentoulidis

October 27		
Time	Institution(s)	Representative(s)
08.00 – 11.00	Meeting with Department for Risk Management Topics: EOC contact, planning documents, cooperation with local self-government units, E-112 system, National Emergency Management Headquarters	Ms. Jelena Jasovic, Deputy Head of the Department Ms. Marija Todic Ms. Nina Mijatovic Ms. Angelina Redzic
12.00 – 15.30	Meeting with Water Management Authority and public companies	Ms. Natasa Milic, Acting Director, Directorate of Water Mr. Goran Puzovic, Director, Public Water Management Company (PWMC) Srbijavode Mr. Milos Radovanovic, Executive Director, PWMC Srbijavode Mr. Aleksandar Nikolic, Head of Technical Sector, PWMC Srbijavode Mr. Bozidar Belos, Head of Flood Protection Unit, PWMC Vode Vojvodine Mr. Rade Marcetic, Chief Flood Protection Engineer, PWMC Vode Vojvodine
October 28		
08.30 – 09.30	Department for Fire and Rescue Units and Civil Protection, Section for Coordination and Control of Voluntary Firefighting Units Voluntary Firefighting Association of Serbia	Mr. Milos Milenkovic Mr. Dragan Capin, President
10.00 – 11.00	Red Cross of Serbia	Mr. Ranko Demirovic
11.30 – 12.30	Standing Conference of Towns and Municipalities Local self-government units: City of Kruševac City of Loznica	Mr. Darko Drndic Mr. Dusan Todorovic, Civil Protection Mr. Aleksadar Glisic, Civil Protection
13.00 – 14.00	National Organization for People with Disabilities	Ms. Ivanka Jovanovic Mr. Damjan Tatic
14.30 – 15.30	Public Water Management Company Srbijavode	Mr. Milos Radovanovic, Executive Director, PWMC Srbijavode
October 29		
09.00 – 10.00	Department for Economic, Material and Technical Support	Mr. Vladimir Nikolic
10.30 – 12.00	Coordination meeting Ministry of Interior, Sector for Emergency Management Department for Legal Affairs and International Cooperation	Mr. Ivan Baras, Assistant Head of Sector Ms. Jelena Dimic, Deputy Head
13.00 – 14.00	Department for Emergency Management of City of Belgrade Belgrade Fire Brigade	Mr. Milan Vasovic, Head of Department Mr. Nebojsa Panic, Deputy of Head of Department Mr. Milos Majstorovic, Commander of Fire Brigade Mr. Dragan Mikovic, Deputy Commander
October 29—End of on-site mission		

## Annex 4

# Literature Included in Desk Review

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