



DISASTER RESPONSE ASSESSMENT AND ROADMAP FOR BOSNIA AND HERZEGOVINA


2018



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DISASTER RESPONSE
ASSESSMENT AND ROADMAP FOR
BOSNIA AND HERZEGOVINA



2018

ABOUT THE IDRM PROJECT

Interlinking Disaster Risk Management in Bosnia and Herzegovina Project (IDRM) aims at strengthening disaster risk reduction capacities at all government levels in Bosnia and Herzegovina by putting in place legal and policy frameworks and implementation of disaster and climate risk management measures.

The IDRM project is financed by the Italian Agency for Development Cooperation

and implemented by the United Nations Development Programme in Bosnia and Herzegovina in cooperation with the Ministry of Security of Bosnia and Herzegovina, the Civil Protection Directorate of the Federation of Bosnia and Herzegovina, the Civil Protection Directorate of Republika Srpska and seven local self-government units (Brčko District, Doboj, Laktaši, Lukavac, Maglaj, Tuzla and Zvornik).

EXPERT TEAM FOR THE DEVELOPMENT OF THE ROADMAP

ALEKSANDAR MANDIĆ
Head of the Operational
Communication Centre of Bosnia
and Herzegovina -112
*Ministry of Security of Bosnia and
Herzegovina*

ALMIR BERIDAN
Senior Associate for Legal Affairs
*Ministry of Security of Bosnia and
Herzegovina*

BILJANA TOMIĆ
Head of the Department
for Training International
Cooperation and Information
*Civil Protection Directorate of
Republika Srpska*

DRAGIŠA TEŠANOVIĆ
Senior Associate for Projects and
International Cooperation
*Civil Protection Directorate of
Republika Srpska*

ENISA BAJROVIĆ
Assistant Director
*Civil Protection Directorate of the
Federation of Bosnia and Herzegovina*

MAIDA MEKIĆ-SKROBANOVIĆ
Fire Safety Inspector
*Civil Protection Directorate of the
Federation of Bosnia and Herzegovina*

RAMO DAUTBAŠIĆ
Head of Department
*Civil Protection Directorate of the
Federation of Bosnia and Herzegovina*

SANJIN AVDIĆ
Sector Leader
*United Nations Development
Programme in Bosnia and Herzegovina*

AIDA HADŽIĆ HUREM
Project Manager
*United Nations Development
Programme in Bosnia and Herzegovina*

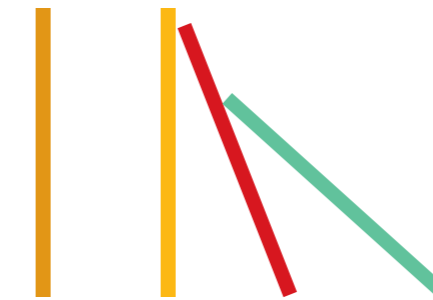
VEDRAN IBRULJ
Project Coordinator
*United Nations Development
Programme in Bosnia and Herzegovina*

ANTONIO BARBERA
Disaster Risk Reduction Expert
(external)

SANELA MUHAREMOVIĆ
Data Analysis Expert
(external)

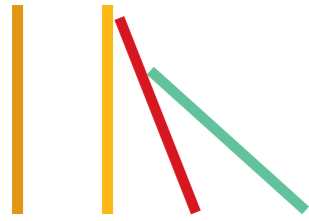
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LIST OF ACRONYMS

| | | |
|---|--|---|
| AFF <i>Aerial Forest Fire fighting</i> | FC <i>Flood Containment</i> | PS <i>Power Supply on the site of the disaster</i> |
| AMP <i>Advanced Medical Post</i> | FH <i>Field Hospital</i> | RS <i>Republika Srpska</i> |
| BD <i>Brčko District</i> | F-LAB <i>Field Laboratory for biological analysis</i> | SAR <i>Search and Rescue</i> |
| BiH <i>Bosnia and Herzegovina</i> | FRB <i>Flood Rescue using Boats</i> | UCPM <i>Union Civil Protection Mechanism</i> |
| CBRN <i>Chemical, Biological, Radiological and Nuclear Detection and Sampling</i> | GFF <i>Ground Forest Fire fighting</i> | ULS <i>Units of local self-government</i> |
| CBRN SAR <i>Search and Rescue in Chemical, Biological, Radiological and Nuclear conditions</i> | G-MEDEVAC <i>Ground Medical Evacuation System</i> | UNDP <i>United Nations Development Programme</i> |
| CPD <i>Civil Protection Directorate</i> | H&D <i>Helicopters and Drones for recognition activities</i> | USAR <i>Urban Search and Rescue</i> |
| DIV <i>Divers Unit</i> | IDRM Project <i>Interlinking Disaster Risk Management in Bosnia and Herzegovina Project</i> | WG <i>Working Group</i> |
| DPS <i>Department of Public Safety</i> | ITC <i>Information technology and communications systems</i> | WT <i>Water Storage and Transportation</i> |
| DRR <i>Disaster Risk Reduction</i> | MoD <i>Ministry of Defence</i> | WPU <i>Water Purification</i> |
| ETC <i>Emergency Temporary Camp</i> | MoS <i>Ministry of Security</i> | WP <i>Water Pumping</i> |
| EXC <i>Excavators</i> | MR <i>Mountain Rescue and technical rope operations</i> | |
| FBiH <i>Federation of Bosnia and Herzegovina</i> | | |



INTRODUCTION

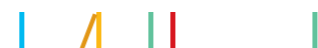
Bosnia and Herzegovina is severely exposed to disasters that are both frequent and destructive.

Theory and practice has taught us that the adverse effects of disasters should be mitigated through preventive actions taken before a disaster occurs. This requires a coordinated approach that envelopes a wide range of stakeholders, such as spatial planners, institutions for economic development, social protection workers and water management institutions, that are often not linked to civil protection in their daily jobs. Although Bosnia and Herzegovina continues to progress in its effort to develop such a coordinated approach it remains over reliant on the structures of protection and rescue.

The protection and rescue system in Bosnia and Herzegovina reflects the complex administrative structure of the country, the implications of which are felt in the institutional set-up and related governance and coordination arrangements. The system is also characterised through its lack of guarantee that sufficient capacities are available to implement a contemporary approach to Disaster Risk Reduction.

The Disaster Response Capacity Assessment and Roadmap for Bosnia and Herzegovina (hereinafter, Roadmap) was developed within the framework of the IDRM project. It involved a participatory systematic assessment of existing response capacities at all administrative levels in Bosnia and Herzegovina.¹

¹ This covered the institutions and bodies of Bosnia and Herzegovina, Republika Srpska, Brčko District and the Federation of Bosnia and Herzegovina as well as the cantons of the Federation of Bosnia and Herzegovina and local self-government units in the entities.



02

SCOPE AND APPROACH OF THE DISASTER RESPONSE CAPACITY ASSESSMENT AND ROADMAP FOR BOSNIA AND HERZEGOVINA

The scope of the Roadmap is intended to contribute to:

- a) a better understanding of the current response capacities at all levels in Bosnia and Herzegovina (units of local self-government, cantons, entities and the institutions and bodies of Bosnia and Herzegovina),**
- b) determine the gaps compared to the general requirements for response operations in line with international standards and**
- c) identify what is needed in relation to future initiatives aimed at capacity development.**

The approach to the development of the Roadmap included regular consultation with civil protection and other stakeholders. Institutional support and quality assurance was ensured by referencing existing hazard knowledge and protection and rescue planning

documentation, lessons learned and the relevant EU practice under the Union Civil Protection Mechanism (UCPM).

Facilitated by the United Nations Development Programme, a working group was established in order to secure a participatory approach and provide technical expertise during all stages of the development of the Roadmap. The working group comprised of governmental stakeholders in Bosnia and Herzegovina: the Ministry of Security of Bosnia and Herzegovina, the Civil Protection Directorate of Republika Srpska and the Civil Protection Directorate of the Federation of Bosnia and Herzegovina. Representatives from the Department of Public Safety of Brčko District and local communities supported the working group and the IDRMM project engaged an international expert to assist it.



METHODOLOGY FOR THE DISASTER RESPONSE STRATEGIC CAPACITY ASSESSMENT AND ROADMAP

The Roadmap was developed by means of participative data collection on the current response capacities at all administrative levels in Bosnia and Herzegovina and subsequent analysis of the gathered data.

3.1

The sub-methodology for data collection on existing disaster response capacities

Structured data collection on the existing human resources and technical capacities available through the current range of operational units and response services in Bosnia and Herzegovina² was implemented with the support of the Ministry of Security of Bosnia and Herzegovina, the entity civil protection directorates and the Department of Public Safety of Brčko District by means of a list that was developed jointly by the members of the working group. 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. The structure of the list (see Table 1), under 'existing units/services', followed the current typology of operational units and practices present in the country.

The collected raw data files³ were first processed then submitted to the respective administrative units for validation and then consolidated into databases that provided a clear overview of the capacities and allowed for analysis.

Given that the operational capacities of civil protection are allocated mostly at the entity or lower levels, data on the capacities of the bodies of Bosnia and Herzegovina were collected to the greatest possible extent and listed as available additional capacities.

3.2

The sub-methodology for the disaster response capacities needs assessment

² At the level of the Federation of Bosnia and Herzegovina (units of local self-government, the cantons and the entity level), Republika Srpska (units of local self-government and the entity level) and Brčko District and the institutions and bodies of Bosnia and Herzegovina.

³ 10 data files for the cantons and 79 for units of local self-government in the Federation of Bosnia and Herzegovina, 58 for units of local self-government in Republika Srpska, 2 for the entity level, 1 for Brčko District and 1 for the institutions and bodies of Bosnia and Herzegovina.

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 Bosnia and Herzegovina⁴ and consisted of a list of recommendations on the specialised 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 utilised 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. The types of specialised response units recommended are given in Table 1 under 'Defined specialised units at the wider EU level', while the detailed structure of the recommended main components of the specialised units per administrative level are presented in Appendix: Recommended Types of Units per Administrative level and Fact-sheets of Specialised Response Units.

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. The assumed allocation of resources in line

with the administrative levels of the units needed in order to respond to the main recognised hazards took into account, among others, the principles of integrated disaster response, cooperation, proportionality of capacities per level and sustainability.

3.3 Data analysis

The analysis of the collected data was conducted on the basis of the cross-referencing matrix below, where data on the categories of units currently formed in Bosnia and Herzegovina is matched with the specialised units defined in the assessment framework. This allowed for overall consistency and simplification of the data on the categories of units currently formed in Bosnia and Herzegovina.

| Existing units/services | Defined specialised units at broad EU level |
|---|---|
| Urban Rescue Service | SAR |
| Unit for Rescue from Ruins | USAR |
| Mountain Rescue Service | MR |
| Unit for Rescue from Heights | MR |
| RCB Protection Service | CBRN |
| RCB Hazard Rescue Unit | CBRN SAR |
| Cover and Shelter | ETC |
| Water Purification Unit | WPU |
| Water Supply Service | WT |
| Fire Protection Service/Professional Firefighting Unit | GFF |
| Water and Underwater Protection and Rescue Service/Unit | FRB and DIV |
| High Capacity Pumping Unit | WP |
| Flood Containment Unit | FC |
| Terrain Clearing Service | EXC |

Table 1. Response capacities matching matrix adopted for data cross-referencing

Certain typologies of the response units defined within the assessment sub-methodology (field hospital, Advanced Medical Post, Ground-MEDEVAC, Helicopters and Drones for

recognition activities, ITC, Aerial Forest Firefighting, and Field Laboratory for biological analysis) do not match any of the existing capacities in Bosnia and Herzegovina and therefore were

not covered by the assessment. However, the Roadmap includes a general description of these types of units as a general reference for possible future planning purposes.

⁴ Earthquakes, floods, fires, industrial accidents, landslides, heavy snowfalls and droughts.

⁵ Small, medium and large units of local self-government in the entities, the cantons of the Federation of Bosnia and Herzegovina, and the entity level



SUMMARY OF THE FINDINGS AND THEIR IMPLICATIONS

4.1

Main findings drawn from the analysis of the collected data

Overview of the current capacities

Current response units and services in Brčko District, the Federation of Bosnia and Herzegovina and Republika Srpska have the basic general capacities to conduct firefighting operations, urban search and rescue and rescue in a mountainous environment, radiological-chemical-biological protection, water rescue and other flood response operations (water pumping and flood containment).⁶

Response capacities are also available under the Ministry of Defence of Bosnia and Herzegovina,⁷ which due to the weak overall capacity of civil protection in the country is an important actor in response to disasters.

Current capacities appear to be scattered across the territory and are generally limited in terms of components and material. Available capacities include staff (variable size), miscellaneous personal equipment, diverse response materials and

vehicles for different purposes, including boats and basic logistic equipment. The overall impression is that a significant portion of the material is not recent and sometimes rather obsolete.

Budget constraints combined with the fact that law enforcement mechanisms are not always effective and can actually hamper concrete opportunities to build systematically on the existing capacities.

The deficit in terms of the capacities and resources of the different typologies of the needed response units is significant with staff, vehicles and logistic material accounting for a remarkable share of the gap.

Formal decisions regulating the organisation and functioning of protection and rescue at the level of local self-government units have been adopted and plans and programmes of protection and rescue have also been adopted at most administrative levels. Risk assessments are conducted at most levels in accordance with current implementing acts. The collected data did not contain information or provide evidence on the quality of the existing assessments or on the relevant methodologies and tools used for this purpose.

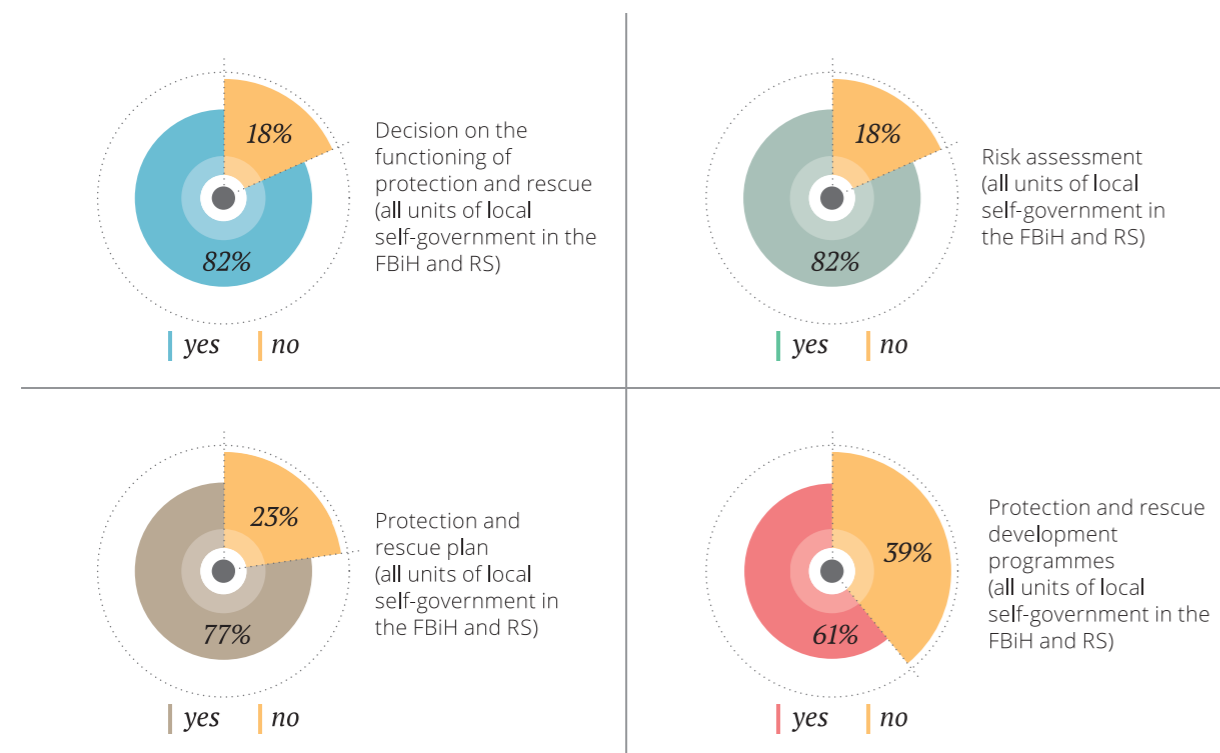
⁶ Mine action and early warning capacities were not part of the analysis conducted through the Roadmap.

⁷ Helicopters, road transportation and heavy machinery used in response to major disasters and response from the air.



| | Decisions on organisation and functioning of protection and rescue | | | Risk/threat assessment of natural and other disasters | | | Protection and rescue plan | | | Protection and rescue development programmes | | |
|--|--|-----|-------|---|-----|-------|----------------------------|-----|-------|--|-----|-------|
| | No | Yes | % Yes | No | Yes | % Yes | No | Yes | % Yes | No | Yes | % Yes |
| Level of institutions and bodies of BiH | | | | x | | | x | | | x | | |
| Brčko District | | x | | | x | | | x | | | x | |
| Federation BiH | | | | | | | | | | | | |
| Entity level | | x | | | x | | | x | | | x | |
| Cantons | 5 | 5 | 50,0% | 1 | 9 | 90,0% | 4 | 6 | 60,0% | 2 | 8 | 80,0% |
| Units of local self-government (total) | 16 | 63 | 79,7% | 15 | 64 | 81,0% | 18 | 61 | 77,7% | 20 | 59 | 74,7% |
| Large | 12 | 50 | 80,6% | 11 | 51 | 82,3% | 13 | 49 | 79,9% | 15 | 47 | 75,8% |
| Medium | 1 | 6 | 85,7% | 1 | 6 | 85,7% | 2 | 5 | 71,4% | 2 | 5 | 71,4% |
| Small | 3 | 7 | 70,0% | 3 | 7 | 70,0% | 3 | 7 | 70,0% | 3 | 7 | 70,0% |
| Republika Srpska | | | | | | | | | | | | |
| Entity level | | x | | | x | | | x | | | x | |
| Units of local self-government (total) | 9 | 49 | 84,5% | 9 | 49 | 84,5% | 13 | 45 | 77,6% | 34 | 24 | 41,4% |
| Large | 6 | 31 | 83,8% | 6 | 31 | 83,8% | 9 | 28 | 75,7% | 20 | 17 | 45,9% |
| Medium | 1 | 7 | 87,5% | 1 | 7 | 87,5% | 2 | 6 | 75,0% | 3 | 5 | 62,5% |
| Small | 2 | 11 | 84,6% | 2 | 11 | 84,6% | 2 | 11 | 84,6% | 11 | 2 | 15,4% |

Table 2. Status of protection and rescue planning at all administrative levels



Main hazards

Floods and fires are recognised as the most recurring hazards at all levels.

A general listing of the recurrence of the main hazards in Bosnia and Herzegovina is given below.

- Brčko District: floods, fires and landslides.
- Federation of Bosnia and Herzegovina (entity level):

earthquakes, floods and fires.

- Federation of Bosnia and Herzegovina (cantonal level): floods (100% of cantons), fires (80%), landslides (50%), earthquakes (30%), heavy snowfall, drought and Chemical, Biological, Radiological and Nuclear Detection and Sampling (CBRN) accidents.
- Federation of Bosnia and Herzegovina (municipal level): floods (81% of all

municipalities), fires (71%), landslides (54%), heavy snowfall, earthquakes, drought and CBRN accidents.

- Republika Srpska (entity level): earthquakes and floods.
- Republika Srpska (municipal level): fires (95% of all municipalities), floods (67%), heavy snowfall (41%), earthquakes (40%), landslides, drought and CBRN accidents.

| | Earthquakes | | | Floods | | | Fires | | | CBRN industrial accidents | | | Landslides | | | Snowfall | | | Droughts | | | | |
|---|-------------|-----|------|--------|------|------|-------|------|------|---------------------------|-----|------|------------|-----|------|----------|-----|------|----------|-----|------|--|--|
| | No | Yes | %Yes | No | Yes | %Yes | No | Yes | %Yes | No | Yes | %Yes | No | Yes | %Yes | No | Yes | %Yes | No | Yes | %Yes | | |
| Brčko District | x | | | | x | | | | | | x | | | | | | | | | | x | | |
| Federation BiH | | | | | | | | | | | | | | | | | | | | | | | |
| Entity level | | x | | | x | | | | | | x | | | x | | | | | | | x | | |
| Cantons | 7 | 3 | 30% | 10 | 100% | 100% | 2 | 80% | 80% | 9 | 1 | 10% | 5 | 5 | 50% | 9 | 1 | 10% | 9 | 1 | 10% | | |
| Units of local self-government (total) | 59 | 20 | 25% | 15 | 64 | 81% | 23 | 71% | 71% | 75 | 4 | 5% | 36 | 43 | 54% | 55 | 24 | 30% | 73 | 6 | 8% | | |
| Large | 47 | 15 | 24% | 8 | 54 | 87% | 20 | 68% | 68% | 59 | 3 | 5% | 24 | 38 | 61% | 49 | 13 | 21% | 56 | 6 | 10% | | |
| Medium | 6 | 1 | 14% | 3 | 4 | 57% | 1 | 86% | 86% | 7 | 0% | 0% | 4 | 3 | 43% | 2 | 5 | 71% | 7 | 0% | | | |
| Small | 6 | 4 | 40% | 4 | 6 | 60% | 2 | 80% | 80% | 9 | 1 | 10% | 8 | 2 | 20% | 4 | 6 | 60% | 10 | 0% | | | |
| Republika Srpska | | | | | | | | | | | | | | | | | | | | | | | |
| Entity level | | x | | | x | | | | | | x | | | x | | | | | | | x | | |
| Units of local self-government (total) | 35 | 23 | 40% | 19 | 39 | 67% | 3 | 95% | 95% | 54 | 4 | 7% | 41 | 17 | 29% | 34 | 24 | 41% | 52 | 6 | 10% | | |
| Large | 20 | 17 | 46% | 7 | 30 | 81% | 2 | 95% | 95% | 35 | 2 | 5% | 28 | 9 | 24% | 24 | 13 | 35% | 36 | 1 | 3% | | |
| Medium | 7 | 1 | 13% | 3 | 5 | 63% | 1 | 88% | 88% | 7 | 1 | 13% | 4 | 4 | 50% | 5 | 3 | 38% | 6 | 2 | 25% | | |
| Small | 8 | 5 | 38% | 9 | 4 | 31% | | 100% | 100% | 12 | 1 | 8% | 9 | 4 | 31% | 5 | 8 | 62% | 10 | 3 | 23% | | |

Table 3. Main hazards in Bosnia and Herzegovina

Assessed deficits in capacities

The current response capacity in Bosnia and Herzegovina was analysed by cross-referencing the data collected on the existing operational units against the data contained in the tentative description for the corresponding specialised units, as defined under the sub-methodology for the disaster response capacities needs assessment.

The analysis process entailed defining which specialised

operational units were needed under each administrative level or unit of local self-government. This was based on the respective hazard exposure and by calculating the differences between the recommended types of specialised response units according to the data gathered on the existing human and technical resources available for response under the current types of operational units and response services in Bosnia and Herzegovina⁸ (based on

the recommended unit size per administrative level).

Deficits at the level of the institutions and bodies of Bosnia and Herzegovina were not analysed within the context of this Roadmap because operational capacities are located mainly at the entity and lower levels. However, given the extent to which this level and in particular the Ministry of Defence and the Armed Forces of Bosnia and Herzegovina are

⁸ According to the matching matrix shown in Table 1.

| Main components/items | n. |
|--|---------|
| Human resources: | |
| Staff | -13,546 |
| Vehicles: | |
| 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 |
| Logistic materials: | |
| Tents | -1,261 |
| Covers and shelters for a displaced population | -47,690 |
| Power generators | -1,252 |
| Forklifts | -127 |
| Other equipment: | |
| Snowmobiles | -233 |
| Transportable decontamination units | -19 |
| Radiological detectors | -30 |
| Gas detectors | -30 |
| Chemical detectors | -20 |
| Mobile water purification units | -104 |
| Mobile water storage units | -106 |
| Mobile field laboratory | -105 |

Table 4. Cumulative deficits observed in the main types of response components (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)

involved in responses to disaster it is imperative that an adequate level of resources is also available at this level.

Deficits in relation to the main response items across different types of units indicate remarkable gaps within the system. The means of transportation utilised for different response operations and general logistic equipment merit particular attention.

In this respect, it is necessary to underline the fact that the sub-methodology for the disaster response capacities needs assessment did not include corrective factors. The latter relates to the hypothetical allocation of the required

units per the respective administrative levels in order to measure specific aspects such as the actual available budget, the geography, environment and land usage as well as the infrastructure, the proximity of municipalities and opportunities for municipalities to build joint response units. Consequently, the observed gaps in capacity might appear overly significant, especially in relation to the total surface of Bosnia and Herzegovina. It is therefore important to keep in mind the overall rationale of the agreed theoretical assessment sub-methodology when considering the calculated deficits.

Roadmap users, in particular protection and rescue planners

in Brčko District, the entities, the cantons and the units of local self-government, are however advised to make general reference to the recommended description of response units as per the sub-methodology in order to self-assess the respective gaps and identify the major needs.

Tables 5.a – 5.o report the detailed cumulative deficits for Brčko District, the Federation of Bosnia and Herzegovina (entity level), the cantonal and the units of local self-government level in the Federation of Bosnia and Herzegovina, and the units of local self-government and the entity level in Republika Srpska respectively. They were calculated for the main items

and assessed according to the level of correlation that existed between the collected data and the components listed in the

summary description of the benchmark units, as per the assessment sub-methodology.⁹

| SAR (Search and Rescue) | Brčko District | FEDERATION OF BIH | | | | | Total FBiH | REPUBLIKA SRPSKA | | | Total RS | Total BiH | |
|--|----------------|-------------------|---------|--------------------------------|--------|-------|------------|------------------|--------------------------------|--------|----------|-----------|--------|
| | | Entity level | Cantons | Units of local self-government | | | | Entity level | Units of local self-government | | | | |
| | | | | Large | Medium | Small | | | Large | Medium | | | Small |
| Staff | -18 | 0 | 0 | -889 | -54 | -81 | -1.024 | 0 | -619 | -63 | -74 | -756 | -1.798 |
| Protective suits | -18 | 0 | 0 | -990 | -63 | -81 | -1.134 | 0 | -648 | -72 | -117 | -837 | -1.989 |
| Protective helmets | -18 | 0 | 0 | -1.001 | -63 | -81 | -1.145 | 0 | -648 | -72 | -117 | -837 | -2.000 |
| Protective masks | -18 | 0 | 0 | -1.012 | -63 | -81 | -1.156 | 0 | -666 | -72 | -117 | -855 | -2.029 |
| Protective gloves | -18 | 0 | 0 | -991 | -63 | -81 | -1.135 | 0 | -648 | -72 | -117 | -837 | -1.990 |
| Protective boots | -18 | 0 | 0 | -983 | -63 | -81 | -1.127 | 0 | -666 | -72 | -117 | -855 | -2.000 |
| Protective shoes | -18 | 0 | 0 | -991 | -63 | -81 | -1.135 | 0 | -666 | -72 | -117 | -855 | -2.008 |
| First aid kit | | | | | | | | | | | | | |
| Command vehicles | -1 | 0 | 0 | -55 | -7 | -9 | -71 | 0 | -36 | -8 | -13 | -57 | -129 |
| Vehicles for the transportation of staff | -2 | 0 | 0 | -108 | -7 | -9 | -124 | 0 | -72 | -8 | -11 | -91 | -217 |
| Vehicles for the transportation of search dogs | -1 | 0 | 0 | -59 | -7 | -9 | -75 | 0 | -37 | -8 | -13 | -58 | -134 |
| Trailers for the transportation of search dogs | -1 | 0 | 0 | -59 | -7 | -10 | -76 | 0 | -37 | -8 | -13 | -58 | -135 |
| Off-road vehicles | -2 | 0 | 0 | -100 | -7 | -9 | -116 | 0 | -70 | -8 | -12 | -90 | -208 |
| Search dogs | -3 | 0 | 0 | -184 | -14 | -20 | -218 | 0 | -111 | -16 | -26 | -153 | -374 |
| Ultra-shortwave radio devices | -18 | 0 | 0 | -1.108 | -63 | -88 | -1.259 | 0 | -658 | -72 | -117 | -847 | -2.124 |
| Tents | -3 | 0 | 0 | -179 | -14 | -20 | -213 | 0 | -110 | -16 | -25 | -151 | -367 |
| Power generators | -3 | 0 | 0 | -167 | -14 | -18 | -199 | 0 | -105 | -16 | -26 | -147 | -349 |
| Lighting equipment (set) | | | | | | | | | | | | | |
| Trailers | -2 | 0 | 0 | -114 | -7 | -9 | -130 | 0 | -74 | -8 | -13 | -95 | -227 |

Table 5.a. Cumulative deficits Search and Rescue (SAR)

The deficit totals for search and rescue included, among others, 1,798 trained personnel, around 2,000 protective suits, helmets, masks, gloves, boots and shoes

as well as around 130 command vehicles, 220 vehicles for the transportation of staff, 134 vehicles for the transportation of search dogs, 208 off-road

vehicles, 2,124 ultra-shortwave radio devices and 374 search dogs.

⁹ The rows with no values refer to items included in the tentative description of benchmark units that were not included in the templates submitted for the collection of data from the various administrative levels (the estimated recommended number of these items per unit size is reported in the unit-specific fact-sheets shown in Chapter 5 under 5.3). Columns with '0' values refer to those units that were assessed as not needed at a given administrative level in relation to the hazards links.

| USAR | Brčko District | FEDERATION OF BIH | | | | | Total FBiH | REPUBLIKA SRPSKA | | | | Total RS | Total BiH |
|--|----------------|-------------------|---------|--------------------------------|--------|-------|------------|------------------|--------------------------------|--------|-------|----------|-----------|
| | | Entity level | Cantons | Units of local self-government | | | | Entity level | Units of local self-government | | | | |
| | | | | Large | Medium | Small | | | Large | Medium | Small | | |
| Staff | 0 | 0 | 0 | -252 | -18 | 0 | -270 | -40 | -162 | 0 | 0 | -202 | -472 |
| Protective suits | 0 | -34 | 0 | -270 | -18 | 0 | -322 | -40 | -270 | -18 | 0 | -328 | -650 |
| Protective helmets | 0 | 0 | 0 | -270 | -18 | 0 | -288 | -40 | -270 | -18 | 0 | -328 | -616 |
| Protective masks | 0 | 0 | 0 | -270 | -18 | 0 | -288 | -40 | -288 | -18 | 0 | -346 | -634 |
| Protective gloves | 0 | 0 | 0 | -270 | -18 | 0 | -288 | -40 | -270 | -18 | 0 | -328 | -616 |
| Protective boots | 0 | 0 | 0 | -270 | -18 | 0 | -288 | -40 | -270 | -18 | 0 | -328 | -616 |
| Protective shoes | 0 | -40 | 0 | -270 | -18 | 0 | -328 | -40 | -306 | -18 | 0 | -364 | -692 |
| First aid kit | | | | | | | | | | | | | |
| Command vehicles | 0 | -2 | 0 | -15 | -1 | 0 | -18 | -2 | -15 | -1 | 0 | -18 | -36 |
| Vehicles for the transportation of staff | 0 | 0 | 0 | -30 | -2 | 0 | -32 | -3 | -30 | -2 | 0 | -35 | -67 |
| Vehicles for the transportation of search dogs | 0 | 0 | 0 | -15 | -1 | 0 | -16 | -1 | -17 | -1 | 0 | -19 | -35 |
| Trailers for the transportation of search dogs | 0 | -1 | 0 | -15 | -1 | 0 | -17 | -1 | -17 | -1 | 0 | -19 | -36 |
| Off-road vehicles | 0 | -2 | 0 | -30 | -2 | 0 | -34 | -3 | -24 | -2 | 0 | -29 | -63 |
| Search dogs | 0 | 0 | 0 | -45 | -3 | 0 | -48 | -3 | -51 | -3 | 0 | -57 | -105 |
| Ultra-shortwave radio devices | 0 | -20 | 0 | -270 | -18 | 0 | -308 | -40 | -296 | -18 | 0 | -354 | -662 |
| Tents | 0 | 0 | 0 | -44 | -3 | 0 | -47 | -4 | -50 | -2 | 0 | -56 | -103 |
| Power generators | 0 | 0 | 0 | -44 | -3 | 0 | -47 | -4 | -42 | -2 | 0 | -48 | -95 |
| Lighting equipment (set) | | | | | | | | | | | | | |
| Trailers | 0 | 0 | 0 | -29 | -2 | 0 | -31 | -3 | -32 | -2 | 0 | -37 | -68 |

Table 5.b. Cumulative deficits Urban Search and Rescue (USAR)

The deficit totals for search and rescue in urban areas included, among others, 472 trained personnel, around 650 protective

suits, helmets, masks, gloves, boots and shoes, 36 command vehicles and 67 vehicles for the transportation of staff, 35

vehicles for the transportation of search dogs, 63 off-road vehicles, 662 ultra-shortwave radio devices and 105 search dogs.

| MR (Mountain Rescue Service) | Brčko District | FEDERATION OF BIH | | | | | Total FBiH | REPUBLIKA SRPSKA | | | | Total RS | Total BiH |
|-------------------------------|----------------|-------------------|---------|--------------------------------|--------|-------|------------|------------------|--------------------------------|--------|-------|----------|-----------|
| | | Entity level | Cantons | Units of local self-government | | | | Entity level | Units of local self-government | | | | |
| | | | | Large | Medium | Small | | | Large | Medium | Small | | |
| Staff | -8 | 0 | 0 | -818 | -63 | -90 | -971 | 0 | -630 | -72 | -99 | -801 | -1.780 |
| Protective clothing | | | | | | | | | | | | | |
| Helmets | -18 | 0 | 0 | -938 | -63 | -90 | -1.091 | 0 | -648 | -72 | -108 | -828 | -1.937 |
| Protective glasses | -18 | 0 | 0 | -1.057 | -63 | -90 | -1.210 | 0 | -661 | -72 | -112 | -845 | -2.073 |
| Gloves | -18 | 0 | 0 | -1.072 | -63 | -90 | -1.225 | 0 | -654 | -72 | -108 | -834 | -2.077 |
| Boots | | | | | | | | | | | | | |
| First aid kit | | | | | | | | | | | | | |
| Passenger vehicles | -3 | 0 | 0 | -180 | -14 | -20 | -214 | 0 | -111 | -16 | -26 | -153 | -370 |
| Snowmobile | -2 | 0 | 0 | -122 | -7 | -10 | -139 | 0 | -72 | -8 | -12 | -92 | -233 |
| Off-road vehicles | -1 | 0 | 0 | -114 | -7 | -9 | -130 | 0 | -68 | -8 | -11 | -87 | -218 |
| Search dogs | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ultra-shortwave radio devices | -18 | 0 | 0 | -1.042 | -63 | -90 | -1.195 | 0 | -648 | -72 | -109 | -829 | -2.042 |
| Tents | -3 | 0 | 0 | -168 | -14 | -20 | -202 | 0 | -111 | -16 | -26 | -153 | -358 |
| Heaters | -3 | 0 | 0 | -178 | -14 | -20 | -212 | 0 | -111 | -16 | -26 | -153 | -368 |
| Power generators | | | | | | | | | | | | | |
| Lighting equipment (set) | | | | | | | | | | | | | |

The deficit totals for mountain rescue services included, among others, 1,780 trained personnel,

around 2,000 protective helmets, glasses, gloves and boots, 370 passenger vehicles, 233

snowmobiles and 218 off-road vehicles.

| MR (Unit for Rescue from Heights) | Brčko District | FEDERATION OF BIH | | | | | Total FBiH | REPUBLIKA SRPSKA | | | | Total RS | Total BiH |
|-----------------------------------|----------------|-------------------|---------|--------------------------------|--------|-------|------------|------------------|--------------------------------|--------|-------|----------|-----------|
| | | Entity level | Cantons | Units of local self-government | | | | Entity level | Units of local self-government | | | | |
| | | | | Large | Medium | Small | | | Large | Medium | Small | | |
| Staff | -18 | 0 | 0 | -1.038 | -63 | -90 | -1.191 | 0 | -620 | -72 | -117 | -809 | -2.018 |
| Helmets | | | | | | | | | | | | | |
| Protective glasses | | | | | | | | | | | | | |
| Gloves | | | | | | | | | | | | | |
| Boots | | | | | | | | | | | | | |
| First aid kit | | | | | | | | | | | | | |
| Passenger vehicles | | | | | | | | | | | | | |
| Off-road vehicles | -2 | 0 | 0 | -121 | -7 | -10 | -138 | 0 | -73 | -8 | -13 | -94 | -234 |
| Ultra-shortwave radio devices | -18 | 0 | 0 | -1.096 | -63 | -90 | -1.242 | 0 | -661 | -72 | -117 | -850 | -2.117 |

Table 5.c. Cumulative deficits Mountain Rescue (MR)

| CBRN (Chemical, Biological, Radiological and Nuclear Detection and Sampling) | Brčko District | FEDERATION OF BIH | | | | | Total FBiH | REPUBLIKA SRPSKA | | | | Total RS | Total BiH |
|--|----------------|-------------------|---------|--------------------------------|--------|-------|------------|------------------|--------------------------------|--------|-------|----------|-----------|
| | | Entity level | Cantons | Units of local self-government | | | | Entity level | Units of local self-government | | | | |
| | | | | Large | Medium | Small | | | Large | Medium | Small | | |
| Staff | 0 | 0 | -36 | 0 | 0 | 0 | -36 | 0 | 0 | 0 | 0 | 0 | -36 |
| Protective suit type A (with external air supply connector) | 0 | -6 | -60 | 0 | 0 | 0 | -66 | -6 | 0 | 0 | 0 | -6 | -72 |
| Protective coveralls | 0 | -6 | -60 | 0 | 0 | 0 | -66 | 0 | 0 | 0 | 0 | 0 | -66 |
| Disposable protective suits | 0 | 0 | -103 | 0 | 0 | 0 | -103 | -12 | 0 | 0 | 0 | -12 | -115 |
| Protective aprons | 0 | -6 | -60 | 0 | 0 | 0 | -66 | -6 | 0 | 0 | 0 | -6 | -72 |
| Protective helmets | 0 | -2 | -60 | 0 | 0 | 0 | -62 | -6 | 0 | 0 | 0 | -6 | -68 |
| Protective glasses | 0 | -4 | -54 | 0 | 0 | 0 | -58 | -6 | 0 | 0 | 0 | -6 | -64 |
| Protective masks | 0 | 0 | -54 | 0 | 0 | 0 | -54 | 0 | 0 | 0 | 0 | 0 | -54 |
| Insulated breathing device and protective masks | 0 | -6 | -60 | 0 | 0 | 0 | -66 | -6 | 0 | 0 | 0 | -6 | -72 |
| Spare air tanks for breathing devices | 0 | -6 | -60 | 0 | 0 | 0 | -66 | -6 | 0 | 0 | 0 | -6 | -72 |
| Protective gloves | 0 | 0 | -54 | 0 | 0 | 0 | -54 | -6 | 0 | 0 | 0 | -6 | -60 |
| Working gloves | 0 | 0 | -60 | 0 | 0 | 0 | -60 | -6 | 0 | 0 | 0 | -6 | -66 |
| Protective rubber boots | 0 | -6 | -54 | 0 | 0 | 0 | -60 | -6 | 0 | 0 | 0 | -6 | -66 |
| Set for personal RCB protection | 0 | -6 | -60 | 0 | 0 | 0 | -66 | -6 | 0 | 0 | 0 | -6 | -72 |
| Transportable decontamination units | 0 | -1 | -10 | 0 | 0 | 0 | -11 | 0 | 0 | 0 | 0 | 0 | -11 |
| Tools for CBRS agents decontamination | 0 | -2 | -20 | 0 | 0 | 0 | -22 | -1 | 0 | 0 | 0 | -1 | -23 |
| Radiological detectors | 0 | 0 | -20 | 0 | 0 | 0 | -20 | -2 | 0 | 0 | 0 | -2 | -22 |
| Gas detectors | 0 | -2 | -20 | 0 | 0 | 0 | -22 | 0 | 0 | 0 | 0 | 0 | -22 |
| Kits for detecting/identifying biological warfare agents | 0 | -1 | -10 | 0 | 0 | 0 | -11 | -1 | 0 | 0 | 0 | -1 | -12 |
| Chemical detectors | 0 | -1 | -10 | 0 | 0 | 0 | -11 | -1 | 0 | 0 | 0 | -1 | -12 |
| Mobile meteorological station | | | | | | | | | | | | | |
| Vehicles for the transportation of staff | 0 | -1 | -9 | 0 | 0 | 0 | -10 | 0 | 0 | 0 | 0 | 0 | -10 |
| Vehicles for the transportation of equipment | 0 | -1 | -9 | 0 | 0 | 0 | -10 | 0 | 0 | 0 | 0 | 0 | -10 |
| Water tanks | 0 | -1 | -10 | 0 | 0 | 0 | -11 | -1 | 0 | 0 | 0 | -1 | -12 |
| Off-road vehicles | | | | | | | | | | | | | |
| Tents with field beds (incl. lighting and heaters) | | | | | | | | | | | | | |
| Ultra-shortwave radio devices | 0 | -2 | -20 | 0 | 0 | 0 | -22 | -2 | 0 | 0 | 0 | -2 | -24 |
| Power generators | 0 | -2 | -19 | 0 | 0 | 0 | -21 | -2 | 0 | 0 | 0 | -2 | -23 |

Table 5.d. Cumulative deficits Chemical, Biological, Radiological and Nuclear Detection and Sampling (CBRN)

The deficit totals for chemical, biological, radiological and nuclear detection and sampling included, among others, 36 trained personnel, 72 protective suits and sets for personal RCB

protection, insulated breathing devices and protective masks, spare air tanks for breathing devices, around 65 protective coveralls and helmets, 22 radiological detectors and gas

detectors, and 12 kits for the detection of biological warfare agents and included chemical detectors and water tanks.

| CBRN SAR (Search and Rescue in Chemical, Biological, Radiological and Nuclear conditions) | Brčko District | FEDERATION OF BIH | | | | | Total FBiH | REPUBLIKA SRPSKA | | | Total RS | Total BiH | |
|---|-------------------|-------------------|---------|--------------------------------|--------|-------|---------------|------------------|--------------------------------|--------|-------------|--------------|-------|
| | | Entity level | Cantons | Units of local self-government | | | | Entity level | Units of local self-government | | | | |
| | | | | Large | Medium | Small | | | Large | Medium | | | Small |
| Staff | 0 | 0 | 0 | -27 | 0 | -9 | -36 | 0 | -18 | -9 | -9 | -36 | -72 |
| Protective suit type A (with external air supply connector) | 0 | 0 | 0 | -27 | 0 | -9 | -36 | 0 | -18 | -9 | -9 | -36 | -72 |
| Protective coveralls | 0 | 0 | 0 | -27 | 0 | -9 | -36 | 0 | -18 | -9 | -9 | -36 | -72 |
| Disposable protective suits | 0 | 0 | 0 | -54 | 0 | -18 | -72 | 0 | -36 | -18 | -18 | -72 | -144 |
| Protective aprons | 0 | 0 | 0 | -27 | 0 | -9 | -36 | 0 | -18 | -9 | -9 | -36 | -72 |
| Protective helmets | 0 | 0 | 0 | -27 | 0 | -9 | -36 | 0 | -18 | -9 | -9 | -36 | -72 |
| Protective glasses | 0 | 0 | 0 | -27 | 0 | -9 | -36 | 0 | -18 | -9 | -9 | -36 | -72 |
| Protective masks | 0 | 0 | 0 | -27 | 0 | -9 | -36 | 0 | -18 | -9 | -9 | -36 | -72 |
| Insulated breathing device and protective masks | 0 | 0 | 0 | -27 | 0 | -9 | -36 | 0 | -18 | -9 | -9 | -36 | -72 |
| Spare air tanks for breathing devices | 0 | 0 | 0 | -27 | 0 | -9 | -36 | 0 | -18 | -9 | -9 | -36 | -72 |
| Protective gloves | 0 | 0 | 0 | -27 | 0 | -9 | -36 | 0 | -18 | -9 | -9 | -36 | -72 |
| Working gloves | 0 | 0 | 0 | -27 | 0 | -9 | -36 | 0 | -18 | -9 | -9 | -36 | -72 |
| Protective rubber boots | 0 | 0 | 0 | -27 | 0 | -9 | -36 | 0 | -18 | -9 | -9 | -36 | -72 |
| Set for personal RCB protection | 0 | 0 | 0 | -27 | 0 | -9 | -36 | 0 | -18 | -9 | -9 | -36 | -72 |
| Transportable decontamination units | 0 | 0 | 0 | -3 | 0 | -1 | -4 | 0 | -2 | -1 | -1 | -4 | -8 |
| Tools for CBRS agents decontamination | 0 | 0 | 0 | -9 | 0 | -3 | -12 | 0 | -6 | -3 | -3 | -12 | -24 |
| Radiological detectors | 0 | 0 | 0 | -3 | 0 | -1 | -4 | 0 | -2 | -1 | -1 | -4 | -8 |
| Gas detectors | 0 | 0 | 0 | -3 | 0 | -1 | -4 | 0 | -2 | -1 | -1 | -4 | -8 |
| Kits for detecting/identifying biological warfare agents | 0 | 0 | 0 | -3 | 0 | -1 | -4 | 0 | -2 | -1 | -1 | -4 | -8 |
| Chemical detectors | 0 | 0 | 0 | -3 | 0 | -1 | -4 | 0 | -2 | -1 | -1 | -4 | -8 |
| Mobile meteorological station | | | | | | | | | | | | | |
| Vehicles for the transportation of staff | 0 | 0 | 0 | -3 | 0 | -1 | -4 | 0 | -2 | -1 | -1 | -4 | -8 |
| Vehicles for the transportation of equipment | 0 | 0 | 0 | -3 | 0 | -1 | -4 | 0 | -2 | -1 | -1 | -4 | -8 |
| Water tanks | 0 | 0 | 0 | -3 | 0 | -1 | -4 | 0 | -2 | -1 | -1 | -4 | -8 |
| Off-road vehicles | | | | | | | | | | | | | |
| Tents with field beds (incl. lighting and heaters) | | | | | | | | | | | | | |
| Ultra-shortwave radio devices | 0 | 0 | 0 | -15 | 0 | -5 | -20 | 0 | -10 | -5 | -5 | -20 | -40 |
| Power generators | 0 | 0 | 0 | -6 | 0 | -2 | -8 | 0 | -4 | -2 | -2 | -8 | -16 |

Table 5.e. Cumulative deficits Search and Rescue in Chemical, Biological, Radiological and Nuclear conditions (CBRN SAR)

Total deficits for search and rescue in chemical, biological, radiological and nuclear conditions include, among other things, 72 trained personnel, protective suits and protective coveralls, protective aprons,

helmets, glasses, masks, gloves, boots, insulated breathing devices and protective masks, spare air tanks for breathing devices and 8 transportable decontamination units, radiological detectors, gas

detectors, kits for detecting biological warfare agents, chemical detectors, vehicles for the transportation of staff, vehicles for the transportation of equipment and water tanks.

| ETC (Emergency Temporary Camp) | Brčko District | FEDERATION OF BIH | | | | | Total FBiH | REPUBLIKA SRPSKA | | | Total RS | Total BiH | |
|---|-------------------|-------------------|---------|--------------------------------|--------|-------|---------------|------------------|--------------------------------|--------|-------------|--------------|---------|
| | | Entity level | Cantons | Units of local self-government | | | | Entity level | Units of local self-government | | | | |
| | | | | Large | Medium | Small | | | Large | Medium | | | Small |
| Tents with heating equipment | | | | | | | | | | | | | |
| Number of covers and shelters for the population | -500 | -500 | -5000 | -24.757 | 0 | 0 | -30.257 | -500 | -16.433 | 0 | 0 | -16.933 | -47.690 |
| Power generators and lighting equip. (set) | | | | | | | | | | | | | |

Table 5.f. Cumulative deficits Emergency Temporary Camp (ETC)

The deficit totals for emergency temporary camps included 47,690 tents with heating equipment,

covers and shelters for the population and power generators and lighting equipment.

| WPU (Water Purification) | Brčko District | FEDERATION OF BIH | | | | | Total FBiH | REPUBLIKA SRPSKA | | | Total RS | Total BiH | |
|-------------------------------------|-------------------|-------------------|---------|--------------------------------|--------|-------|---------------|------------------|--------------------------------|--------|-------------|--------------|--------|
| | | Entity level | Cantons | Units of local self-government | | | | Entity level | Units of local self-government | | | | |
| | | | | Large | Medium | Small | | | Large | Medium | | | Small |
| Staff | -10 | 0 | -100 | -580 | 0 | 0 | -680 | -10 | -340 | 0 | 0 | -350 | -1.040 |
| Mobile water purification units | -1 | 0 | -10 | -59 | 0 | 0 | -69 | 0 | -34 | 0 | 0 | -34 | -104 |
| Mobile water storage units | -1 | -2 | -10 | -59 | 0 | 0 | -71 | 0 | -34 | 0 | 0 | -34 | -106 |
| Mobile field laboratory | -1 | -2 | -10 | -58 | 0 | 0 | -70 | 0 | -34 | 0 | 0 | -34 | -105 |
| Passenger vehicles | -1 | -1 | -10 | -58 | 0 | 0 | -69 | -2 | -34 | 0 | 0 | -36 | -106 |
| Off-road vehicles | -1 | 0 | -10 | -58 | 0 | 0 | -68 | -2 | -34 | 0 | 0 | -36 | -105 |
| Water tanks | -1 | 0 | -10 | -59 | 0 | 0 | -69 | -2 | -34 | 0 | 0 | -36 | -106 |
| Tents with field beds | | | | | | | | | | | | | |
| Power generators and lighting (set) | | | | | | | | | | | | | |

Table 5.g. Cumulative deficits Water Purification (WPU)

The deficit totals for water purification included, among others, 1,040 trained personnel, around 105 mobile water

purification units, mobile water storage units, mobile field laboratories, passenger vehicles, off-road vehicles, water tanks,

tents with field beds, power generators and lighting.

| WT (Water Storage and Transportation) | Brčko District | FEDERATION OF BIH | | | | | Total FBiH | REPUBLIKA SRPSKA | | | Total RS | Total BiH | |
|---|-------------------|-------------------|---------|--------------------------------|--------|-------|---------------|------------------|--------------------------------|--------|-------------|--------------|-------|
| | | Entity level | Cantons | Units of local self-government | | | | Entity level | Units of local self-government | | | | |
| | | | | Large | Medium | Small | | | Large | Medium | | | Small |
| Staff | -4 | -3 | -36 | -164 | -12 | -14 | -229 | -4 | -136 | -16 | -25 | -181 | -414 |
| Passenger vehicles | -1 | -1 | -10 | -49 | 0 | 0 | -60 | -1 | -35 | 0 | 0 | -36 | -97 |
| Water tanks | -1 | -1 | -9 | -47 | -5 | -7 | -69 | -1 | -36 | -8 | -12 | -57 | -127 |

Table 5.h. Cumulative deficits Water Storage and Transportation (WT)

The deficit totals for the storage and transport of water were 414

trained personnel, 97 passenger vehicles and 127 water tanks.

| GFF (Ground Forest Fire fighting) | Brčko District | FEDERATION OF BIH | | | | | Total FBiH | REPUBLIKA SRPSKA | | | | Total RS | Total BiH |
|--|----------------|-------------------|---------|--------------------------------|--------|-------|------------|------------------|--------------------------------|--------|-------|----------|-----------|
| | | Entity level | Cantons | Units of local self-government | | | | Entity level | Units of local self-government | | | | |
| | | | | Large | Medium | Small | | | Large | Medium | Small | | |
| Staff | 0 | -49 | -361 | -335 | -22 | -39 | -806 | 0 | -249 | -3 | -37 | -289 | -1.095 |
| Protective suits | -20 | -50 | -360 | -360 | -25 | -24 | -819 | 0 | -206 | -21 | -45 | -272 | -1.111 |
| Protective helmets | -20 | 0 | -364 | -333 | -30 | -33 | -760 | 0 | -222 | -18 | -55 | -295 | -1.075 |
| Protective masks | -20 | -50 | -335 | -547 | -32 | -41 | -1.005 | 0 | -429 | -61 | -91 | -581 | -1.606 |
| Protective boots | -20 | 0 | -371 | -470 | -41 | -38 | -920 | 0 | -288 | -36 | -78 | -402 | -1.342 |
| Protective shoes | -20 | 0 | -378 | -551 | -34 | -50 | -1.013 | 0 | -363 | -54 | -92 | -509 | -1.542 |
| Protective gloves | -20 | -50 | -367 | -439 | -47 | -47 | -950 | 0 | -269 | -39 | -89 | -397 | -1.367 |
| Command vehicles | 0 | -1 | -7 | -23 | -6 | -6 | -43 | 0 | -16 | -5 | -11 | -32 | -75 |
| Vehicles for extinguishing fires | 0 | -8 | -63 | -123 | -11 | -11 | -216 | 0 | -91 | -11 | -22 | -124 | -340 |
| Vehicles for the transportation of stuff | 0 | 0 | -24 | -58 | -5 | -7 | -94 | 0 | -49 | -6 | -8 | -63 | -157 |
| Tanker trucks | -1 | -4 | -30 | -46 | -5 | -4 | -89 | 0 | -37 | -6 | -8 | -51 | -141 |
| Ultra-shortwave radio devices | -20 | -30 | -391 | -637 | -50 | -55 | -1.163 | 0 | -527 | -55 | -100 | -682 | -1.865 |
| Power generators | -4 | 0 | -54 | -115 | -11 | -13 | -193 | 0 | -105 | -9 | -23 | -137 | -334 |
| Trailers | -2 | 0 | -23 | -74 | -6 | -7 | -110 | 0 | -60 | -6 | -13 | -79 | -191 |
| Rescue boats | -2 | -1 | -24 | -64 | -6 | -6 | -101 | 0 | -52 | -7 | -11 | -70 | -173 |

Table 5.i. Cumulative deficits Ground Forest Firefighting (GFF)

The deficit totals for extinguishing forest fires on the ground included, among others, 1,095 trained personnel, around 1,100 firefighting

suits, firefighting helmets, 75 command vehicles, 340 vehicles for extinguishing fires, 157 staff, 141 tankers, 1,865 ultra-

shortwave radio devices, 334 power generators and 173 rescue boats.

| FRB-DIV (Flood Rescue using Boats - Diver Units) | Brčko District | FEDERATION OF BIH | | | | | Total FBiH | REPUBLIKA SRPSKA | | | | Total RS | Total BiH |
|---|----------------|-------------------|---------|--------------------------------|--------|-------|------------|------------------|--------------------------------|--------|-------|----------|-----------|
| | | Entity level | Cantons | Units of local self-government | | | | Entity level | Units of local self-government | | | | |
| | | | | Large | Medium | Small | | | Large | Medium | Small | | |
| Staff | -12 | 0 | -93 | -694 | -36 | -54 | -877 | -1 | -235 | -18 | -14 | -268 | -1.157 |
| Rubber boats | 0 | 0 | -11 | -78 | -4 | -5 | -98 | 0 | -32 | -5 | -2 | -39 | -137 |
| Lime boats | 0 | 0 | -10 | -50 | -4 | -6 | -70 | 0 | -22 | -5 | -4 | -31 | -101 |
| Outboard motors | 0 | 0 | -28 | -144 | -8 | -12 | -192 | 0 | -54 | -10 | -6 | -70 | -262 |
| Passenger vehicles | -1 | 0 | -10 | -53 | -4 | -6 | -73 | -1 | -25 | -5 | -4 | -35 | -109 |
| Vehicles for the transportation of staff | 0 | 0 | -10 | -54 | -4 | -6 | -74 | 0 | -25 | -5 | -4 | -34 | -108 |
| Vehicles for the transportation of equipment | -1 | 0 | -19 | -107 | -4 | -6 | -136 | -1 | -51 | -5 | -4 | -61 | -198 |
| Trailer for the transportation of boats | 0 | 0 | -28 | -158 | -8 | -12 | -206 | 0 | -65 | -10 | -8 | -83 | -289 |
| Diving wetsuits | -1 | 0 | -38 | -291 | -20 | -30 | -379 | -1 | -152 | -25 | -20 | -198 | -578 |
| Diving helmets | -16 | -16 | -140 | -846 | -36 | -54 | -1.092 | -11 | -454 | -45 | -36 | -546 | -1.654 |
| Diving masks | -14 | -8 | -132 | -826 | -36 | -54 | -1.056 | -11 | -440 | -45 | -36 | -532 | -1.602 |
| Snorkels | -14 | -8 | -136 | -831 | -36 | -54 | -1.065 | -11 | -444 | -45 | -36 | -536 | -1.615 |
| Diving gloves (Neoprene) | -16 | -8 | -130 | -820 | -36 | -54 | -1.048 | -11 | -444 | -45 | -36 | -536 | -1.600 |
| Auto inflating lifejackets (with a hydrostatic valve) | -16 | -8 | -145 | -864 | -36 | -54 | -1.107 | -16 | -434 | -45 | -36 | -531 | -1.654 |
| Diving boots (Neoprene) | -16 | -8 | -120 | -836 | -36 | -54 | -1.054 | -16 | -446 | -45 | -36 | -543 | -1.613 |
| Diving fins | -14 | -8 | -128 | -829 | -36 | -54 | -1.055 | -11 | -440 | -45 | -36 | -532 | -1.601 |
| Underwater flashlights | -16 | -8 | -160 | -864 | -36 | -54 | -1.122 | -14 | -472 | -45 | -36 | -567 | -1.705 |
| Ultra-shortwave radio devices | -16 | 0 | -156 | -852 | -36 | -54 | -1.098 | -16 | -443 | -45 | -36 | -540 | -1.654 |
| Tents (with field beds) | 0 | 0 | -20 | -102 | -4 | -6 | -132 | -2 | -57 | -4 | -4 | -67 | -199 |
| Power generators (incl. lighting equipment) | 0 | 0 | -20 | -106 | -4 | -6 | -136 | -2 | -53 | -5 | -4 | -64 | -200 |
| GPS devices | -7 | -7 | -68 | -377 | -20 | -30 | -502 | -7 | -210 | -25 | -20 | -262 | -771 |

Table 5.l. Cumulative deficits Flood Rescue using Boats - Divers Units (FRB-DIV)

The deficit totals for flood rescue by boats and diving units included, among others, 1,157 trained personnel, 137 rubber

boats, 101 lime boats, 262 outboard motors, 109 passenger vehicles, 108 vehicles for the transportation of staff, 198

vehicles for the transportation of equipment and 289 trailers for the transportation of boats.

| WP (Water Pumping) | Brčko District | FEDERATION OF BIH | | | | | Total FBiH | REPUBLIKA SRPSKA | | | | Total RS | Total BiH |
|---|----------------|-------------------|---------|--------------------------------|--------|-------|------------|------------------|--------------------------------|--------|-------|----------|-----------|
| | | Entity level | Cantons | Units of local self-government | | | | Entity level | Units of local self-government | | | | |
| | | | | Large | Medium | Small | | | Large | Medium | Small | | |
| Staff | -2 | 0 | -120 | -720 | -20 | -30 | -890 | -2 | -416 | -25 | -20 | -463 | -1.355 |
| High capacity pumps (trailer pumps 5,000 l/m) | 0 | -1 | -10 | -60 | 0 | 0 | -71 | 0 | -35 | -0 | 0 | -35 | -106 |
| Medium capacity pumps | 0 | 0 | -20 | -120 | -12 | -18 | -170 | 0 | -68 | -15 | -12 | -95 | -265 |
| Passenger vehicles | -1 | 0 | -10 | -60 | -4 | -6 | -80 | -1 | -36 | -5 | -4 | -46 | -127 |
| Off-road vehicles | -2 | 0 | -20 | -120 | -4 | -6 | -150 | -2 | -71 | -5 | -4 | -82 | -234 |
| Trucks | | | | | | | | | | | | | |
| Collapsible water tanks | | | | | | | | | | | | | |
| VHF radios | | | | | | | | | | | | | |
| Tents with field beds | | | | | | | | | | | | | |
| Power generators and lighting equip. (set) | | | | | | | | | | | | | |
| Mechanical/ground work tools (set) | | | | | | | | | | | | | |
| Protective jackets-coats | -12 | 0 | -120 | -720 | -20 | -30 | -890 | -2 | -428 | -25 | -20 | -475 | -1.377 |
| Protective boots | -12 | 0 | -120 | -720 | -20 | -30 | -890 | -2 | -416 | -25 | -20 | -463 | -1.365 |
| Protective gloves | -12 | 0 | -120 | -720 | -20 | -30 | -890 | -2 | -416 | -25 | -20 | -463 | -1.365 |

Table 5.m. Cumulative deficits Water Pumping (WP)

The deficit totals for pumping water included, among others, 1,355 trained personnel, 106 high capacity pumps, 265 medium

capacity pumps, 127 passenger vehicles and 234 off-road vehicles.

| FC (Flood Containment) | Brčko District | FEDERATION OF BIH | | | | | Total FBiH | REPUBLIKA SRPSKA | | | | Total RS | Total BiH |
|---------------------------------------|----------------|-------------------|---------|--------------------------------|--------|-------|------------|------------------|--------------------------------|--------|-------|----------|-----------|
| | | Entity level | Cantons | Units of local self-government | | | | Entity level | Units of local self-government | | | | |
| | | | | Large | Medium | Small | | | Large | Medium | Small | | |
| Staff | -2 | -11 | -120 | -720 | -20 | -30 | -901 | -12 | -420 | -25 | -20 | -477 | -1.380 |
| Sandbag filling machines | -9 | -10 | -100 | -600 | -20 | -30 | -760 | -10 | -360 | -25 | -20 | -415 | -1.184 |
| Water filled barriers (set of 100 mt) | -4 | -4 | -40 | -240 | 0 | 0 | -284 | -4 | -144 | 0 | 0 | -148 | -436 |
| Air filled barriers (set of 100 mt) | -4 | -4 | -40 | -240 | 0 | 0 | -284 | -4 | -144 | 0 | 0 | -148 | -436 |
| Aluminium barriers (set of 100 mt) | -4 | -4 | -40 | -240 | 0 | 0 | -284 | -4 | -144 | 0 | 0 | -148 | -436 |
| Vehicles | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Off-road vehicles | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Trucks | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Forklifts | 0 | -1 | -10 | -60 | -4 | -6 | -81 | -1 | -36 | -5 | -4 | -46 | -127 |
| Ultra-shortwave radio devices | -2 | -12 | -120 | -720 | -20 | -30 | -902 | -12 | -432 | -25 | -20 | -489 | -1.393 |
| Tents | 0 | -2 | -20 | -120 | -4 | -6 | -152 | -2 | -71 | -5 | -4 | -82 | -234 |
| Field beds | 0 | -12 | -120 | -720 | -20 | -30 | -902 | -12 | -432 | -25 | -20 | -489 | -1.391 |
| Power generators | 0 | -2 | -20 | -120 | -4 | -6 | -152 | -2 | -71 | -5 | -4 | -83 | -235 |

Table 5.n. Cumulative deficits Flood Containment (FC)

The deficit totals for flood containment included, among others, 1,380 trained personnel,

1,184 sandbag filling machines, 436 water fillable barriers, air filled barriers, aluminium

barriers and 235 power generators.

| EXC (Excavators) | Brčko District | FEDERATION OF BIH | | | | | Total FBiH | REPUBLIKA SRPSKA | | | | Total RS | Total BiH |
|---------------------|----------------|-------------------|---------|--------------------------------|--------|-------|------------|------------------|--------------------------------|--------|-------|----------|-----------|
| | | Entity level | Cantons | Units of local self-government | | | | Entity level | Units of local self-government | | | | |
| | | | | Large | Medium | Small | | | Large | Medium | Small | | |
| Staff | -8 | -11 | -120 | -409 | -42 | -53 | -635 | -12 | -191 | -26 | -57 | -286 | -929 |
| Excavators | | | | | | | | | | | | | |
| Bobcats | | | | | | | | | | | | | |
| Off-road vehicles | | | | | | | | | | | | | |
| Trucks | | | | | | | | | | | | | |
| Fuel tanks | | | | | | | | | | | | | |
| VHF radios | | | | | | | | | | | | | |

Table 5.o. Cumulative deficits Excavators (EXC)

The deficit totals for cleaning the terrain included, among others, 929 trained personnel.

Surplus capacity

Through the collected data, it was possible to identify available capacities in units currently formed at different levels that were not vital or needed; the

assessment was based on the respective risk exposure.

Surplus capacities present in certain units of local self-government and other administrative levels that could be utilised better (based on a restructuring of the units in accordance with the risk exposure) comprised staff and materials allocated mostly to

Firefighting units (22 overall), units for Rescue from Ruins (15 units overall in Brčko District, the cantons and municipalities in the Federation of Bosnia and Herzegovina and the municipalities in Republika Srpska), Units for Radiological, Chemical and Biological Hazard Rescue (9 units overall) and Water and Underwater Protection Units (2).

| FIREFIGHTING (GFF) | | RESCUE FROM RUINS (SAR) | | RCB HAZARD RESCUE (CBRN SAR) | |
|----------------------------------|-----------|--------------------------|-----------|------------------------------|----------|
| Total units | 22 | Total units | 15 | Total units | 9 |
| Main components | | Main components | | Main components | |
| Staff | 631 | Staff | 349 | Staff | 169 |
| Command vehicles | 22 | Command vehicles | 3 | Radiological detectors | 16 |
| Vehicles for staff | 19 | Vehicles for staff | 8 | Chemical detectors | 3 |
| Vehicles for extinguishing fires | 35 | Vehicles for search dogs | 1 | Vehicles for staff | 2 |
| Tanker trucks | 33 | Off-road vehicles | 10 | Vehicles for equipment | 2 |
| Rescue boats | 16 | Trailers | 12 | Water tanks | 2 |
| Trailers | 16 | Power generators | 3 | Power generators | 2 |

Table 6. The main components of the surplus capacity

Missing units

The capacities needs assessment process also included an assessment of whether those units needed to address hazards at a given administrative level were already formed and equipped; this was regardless of whether the established units had adequate staff and capacities.

This analysis was conducted by comparing information on whether a specific type of unit was needed¹⁰ against information

on whether the corresponding comparable type of unit currently existed.¹¹

It is also important to note that a specialised mixed protection and rescue unit had not been formed at the level of the institutions and bodies of Bosnia and Herzegovina, even though such a unit is envisaged in the Framework Law on the Protection and Rescue of People and Property in the Event of Natural or Other Disasters in Bosnia and Herzegovina. Such a unit should be formed from

specialised civil protection units and services in the entities, Brčko District, the bodies and legal entities at the level of Bosnia and Herzegovina and other institutions. Upon the approval of the competent bodies of the entities and Brčko District, the bodies and legal persons at the level of Bosnia and Herzegovina and other institutions, it would respond to cases of natural or other disasters and participate in international exercises, relief operations and other activities.

¹⁰ According to the level of risk exposure.

¹¹ The basis used to assess whether a certain needed unit existed or not was the reports by staff obtained through the data collection. A 'unit formed' is a unit that is needed, based on the level of risk exposure, that has some staff, even if limited, allocated to it. Whereas a 'unit not formed' is a unit that is needed but, according to the collected data, has no reported staff.

| Count of SAR (Urban Rescue Service) | Brčko District | FEDERATION OF BIH | | | | | REPUBLIKA SRPSKA | | | | | |
|--|----------------|-------------------|---------|--------------------------------|------------|------------|------------------|--------------|--------------------------------|------------|------------|-----|
| | | Entity level | Cantons | Units of local self-government | | | | Entity level | Units of local self-government | | | |
| | | | | Large | Medium | Small | All | | Large | Medium | Small | All |
| Unit formed | | | | 16 | 1 | 1 | 18 | 3 | 1 | 5 | 9 | |
| Unit not formed | x | | | 46 | 6 | 9 | 61 | 34 | 7 | 8 | 49 | |
| Unit not needed | | x | 10 | | | | | x | | | | |
| % Missing (needed) | | | | 74% | 86% | 90% | 77% | 92% | 88% | 62% | 84% | |

Table 7.a. Missing units: SAR to Urban Rescue Service

| Count of USAR (Unit for Rescue from Ruins) | Brčko District | FEDERATION OF BIH | | | | | REPUBLIKA SRPSKA | | | | | |
|---|----------------|-------------------|---------|--------------------------------|-------------|------------|------------------|--------------|--------------------------------|--------|------------|-----|
| | | Entity level | Cantons | Units of local self-government | | | | Entity level | Units of local self-government | | | |
| | | | | Large | Medium | Small | All | | Large | Medium | Small | All |
| Unit formed | | x | | 1 | | | 1 | 8 | 1 | | 9 | |
| Unit not formed | | | | 14 | 1 | | 15 | x | 9 | | 9 | |
| Unit not needed | x | | 10 | 47 | 6 | 10 | 63 | | 20 | 7 | 13 | 40 |
| % Missing (needed) | | | | 93% | 100% | 94% | | 53% | 0% | | 50% | |

Table 7.b. Missing units: Urban Search and Rescue (USAR) to Units for Rescue from Ruins

| Count of MR (Mountain Rescue Service) | Brčko District | FEDERATION OF BIH | | | | | REPUBLIKA SRPSKA | | | | | |
|--|----------------|-------------------|---------|--------------------------------|-------------|-------------|------------------|--------------|--------------------------------|------------|------------|-----|
| | | Entity level | Cantons | Units of local self-government | | | | Entity level | Units of local self-government | | | |
| | | | | Large | Medium | Small | All | | Large | Medium | Small | All |
| Unit formed | x | | | 19 | | | 19 | 3 | | 2 | 5 | |
| Unit not formed | | | | 42 | 7 | | 59 | 34 | 8 | 11 | 53 | |
| Unit not needed | | x | 10 | 1 | | | 1 | x | | | | |
| % Missing (needed) | | | | 69% | 100% | 100% | 76% | 92% | 100% | 85% | 91% | |

Table 7.c. Missing units: Mountain Rescue and technical rope operations (MR) to Mountain Rescue Service

| Count of MR (Unit for Rescue from Heights) | Brčko District | FEDERATION OF BIH | | | | | REPUBLIKA SRPSKA | | | | | |
|---|----------------|-------------------|---------|--------------------------------|-------------|-------------|------------------|--------------|--------------------------------|-------------|------------|-----|
| | | Entity level | Cantons | Units of local self-government | | | | Entity level | Units of local self-government | | | |
| | | | | Large | Medium | Small | All | | Large | Medium | Small | All |
| Unit formed | | | | 4 | | | 4 | 3 | | | 3 | |
| Unit not formed | x | | | 57 | 7 | | 74 | 34 | 8 | 13 | 55 | |
| Unit not needed | | x | 10 | 1 | | | 1 | x | | | | |
| % Missing (needed) | | | | 93% | 100% | 100% | 95% | 92% | 100% | 100% | 95% | |

Table 7.d. Missing units: Mountain Rescue and technical rope operations (MR) to Units for Rescue from Heights

| Count of CBRN (RCB Protection Service) | Brčko District | FEDERATION OF BIH | | | | | REPUBLIKA SRPSKA | | | | | |
|---|----------------|-------------------|---------|--------------------------------|--------|-------|------------------|--------------|--------------------------------|--------|-------|-----|
| | | Entity level | Cantons | Units of local self-government | | | | Entity level | Units of local self-government | | | |
| | | | | Large | Medium | Small | All | | Large | Medium | Small | All |
| Unit formed | | x | 4 | | | | | x | | | | |
| Unit not formed | | | 6 | | | | | | | | | |
| Unit not needed | x | | | 62 | 7 | 10 | 79 | | 37 | 8 | 13 | 58 |
| % Missing (needed) | | | | 60% | | | | | | | | |

Table 7.e. Missing units: Chemical, Biological, Radiological and Nuclear Detection and Sampling (CBRN) to the RCB Protection Service

| Count of CBRN SAR (Search and Rescue in Chemical, Biological, Radiological and Nuclear conditions) | Brčko District | FEDERATION OF BIH | | | | | | REPUBLIKA SRPSKA | | | | | | |
|--|-------------------|-------------------|---------|--------------------------------|--------|-------|-----|------------------|--------------------------------|--------|-------|-----|--|--|
| | | Entity level | Cantons | Units of local self-government | | | | Entity level | Units of local self-government | | | | | |
| | | | | Large | Medium | Small | All | | Large | Medium | Small | All | | |
| Unit formed | | | | | | | | | | | | | | |
| Unit not formed | | | | 3 | | 1 | 4 | 2 | 1 | 1 | 4 | | | |
| Unit not needed | x | x | 10 | 59 | 7 | 9 | 75 | x | 35 | 7 | 12 | 54 | | |
| % Missing (needed) | | | 100% | | 100% | 100% | | 100% | 100% | 100% | 100% | | | |

Table 7.f. Missing units: Search and Rescue in Chemical, Biological, Radiological and Nuclear conditions (CBRN SAR) to RCB Hazard Rescue Units

| Count of WPU (Water Purification Unit) | Brčko District | FEDERATION OF BIH | | | | | | REPUBLIKA SRPSKA | | | | | | |
|--|-------------------|-------------------|---------|--------------------------------|--------|-------|-----|------------------|--------------------------------|--------|-------|-----|--|--|
| | | Entity level | Cantons | Units of local self-government | | | | Entity level | Units of local self-government | | | | | |
| | | | | Large | Medium | Small | All | | Large | Medium | Small | All | | |
| Unit formed | | x | | 1 | | | 1 | x | | | | | | |
| Unit not formed | x | | 10 | 58 | | | 58 | | 34 | | | 34 | | |
| Unit not needed | | | | 3 | 7 | 10 | 20 | | 3 | 8 | 13 | 24 | | |
| % Missing (needed) | | | 100% | 98% | | 98% | | 100% | | | 100% | | | |

Table 7.g. Missing units: Water Purification (WPU) to Water Purification Units

| Count of WT (Water Supply Service) | Brčko District | FEDERATION OF BIH | | | | | | REPUBLIKA SRPSKA | | | | | | |
|--|-------------------|-------------------|---------|--------------------------------|--------|-------|-----|------------------|--------------------------------|--------|-------|-----|--|--|
| | | Entity level | Cantons | Units of local self-government | | | | Entity level | Units of local self-government | | | | | |
| | | | | Large | Medium | Small | All | | Large | Medium | Small | All | | |
| Unit formed | | x | 1 | 21 | 1 | 2 | 24 | | 2 | | 1 | 3 | | |
| Unit not formed | x | | 9 | 41 | 6 | 8 | 55 | x | 34 | 8 | 12 | 54 | | |
| Unit not needed | | | | | | | | | 1 | | | 1 | | |
| % Missing (needed) | | | 90% | 66% | 86% | 80% | 70% | | 94% | 100% | 92% | 95% | | |

Table 7.h. Missing units: Water Storage and Transportation (WT) to Water Supply Service

| Count of GFF (Ground Forest Firefighting) | Brčko District | FEDERATION OF BIH | | | | | | REPUBLIKA SRPSKA | | | | | | |
|---|-------------------|-------------------|---------|--------------------------------|--------|-------|-----|------------------|--------------------------------|--------|-------|-----|--|--|
| | | Entity level | Cantons | Units of local self-government | | | | Entity level | Units of local self-government | | | | | |
| | | | | Large | Medium | Small | All | | Large | Medium | Small | All | | |
| Unit formed | x | x | 4 | 40 | 5 | 4 | 49 | | 30 | 7 | 11 | 48 | | |
| Unit not formed | | | 4 | 2 | 1 | 4 | 7 | | 5 | | 2 | 7 | | |
| Unit not needed | | | 2 | 20 | 1 | 2 | 23 | x | 2 | 1 | | 3 | | |
| % Missing (needed) | | | 50% | 5% | 17% | 50% | 13% | | 14% | 0% | 15% | 13% | | |

Table 7.i. Missing units: Ground Forest Firefighting (GFF)

| Count of FRB-DIV (Water and Underwater Protection and Rescue Service/Unit) | Brčko District | FEDERATION OF BIH | | | | | | REPUBLIKA SRPSKA | | | | | | |
|---|-------------------|-------------------|---------|--------------------------------|--------|-------|-----|------------------|--------------------------------|--------|-------|-----|--|--|
| | | Entity level | Cantons | Units of local self-government | | | | Entity level | Units of local self-government | | | | | |
| | | | | Large | Medium | Small | All | | Large | Medium | Small | All | | |
| Unit formed | x | x | 5 | 15 | | | 15 | x | 16 | 3 | 3 | 22 | | |
| Unit not formed | | | 5 | 39 | 4 | 6 | 49 | | 14 | 2 | 1 | 17 | | |
| Unit not needed | | | | 8 | 3 | 4 | 15 | | 7 | 3 | 9 | 19 | | |
| % Missing (needed) | | | 50% | 72% | 100% | 100% | 77% | | 47% | 40% | 25% | 44% | | |

Table 7.l. Missing units: Flood Rescue using Boats - Divers Unit (FRB-DIV) to Water and Underwater Protection Service/Unit

| Count of WP (High Capacity Pumping Unit) | Brčko District | FEDERATION OF BIH | | | | | | REPUBLIKA SRPSKA | | | | | | |
|--|-------------------|-------------------|---------|--------------------------------|--------|-------|------|------------------|--------------------------------|--------|-------|-----|--|--|
| | | Entity level | Cantons | Units of local self-government | | | | Entity level | Units of local self-government | | | | | |
| | | | | Large | Medium | Small | All | | Large | Medium | Small | All | | |
| Unit formed | x | x | | | | | | x | 2 | | | 2 | | |
| Unit not formed | | | 10 | 60 | 4 | 6 | 70 | | 34 | 5 | 4 | 43 | | |
| Unit not needed | | | | 2 | 3 | 4 | 9 | | 1 | 3 | 9 | 13 | | |
| % Missing (needed) | | | 100% | 100% | 100% | 100% | 100% | | 94% | 100% | 100% | 96% | | |

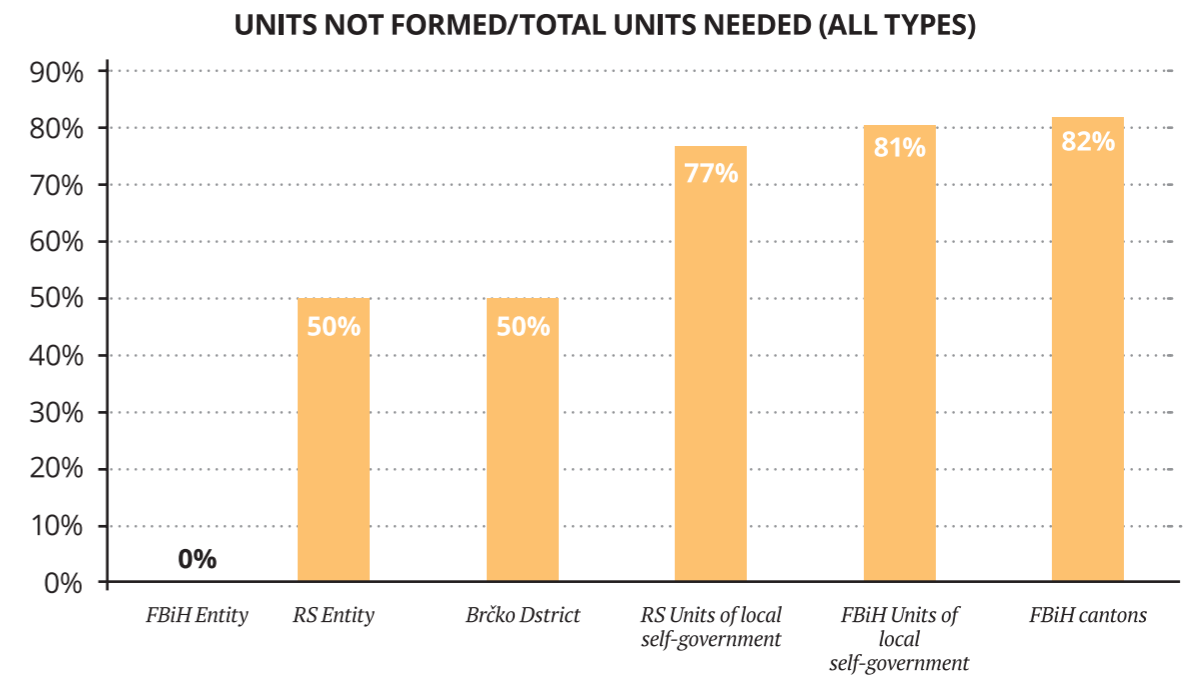
Table 7.m. Missing units: Water Pumping (WP) to High Capacity Pumping

| Count of FC (Flood Containment Unit) | Brčko District | FEDERATION OF BIH | | | | | | REPUBLIKA SRPSKA | | | | | | |
|--|-------------------|-------------------|---------|--------------------------------|--------|-------|------|------------------|--------------------------------|--------|-------|-----|--|--|
| | | Entity level | Cantons | Units of local self-government | | | | Entity level | Units of local self-government | | | | | |
| | | | | Large | Medium | Small | All | | Large | Medium | Small | All | | |
| Unit formed | x | x | | | | | | | 1 | | | 1 | | |
| Unit not formed | | | 10 | 60 | 4 | 6 | 70 | x | 35 | 5 | 4 | 44 | | |
| Unit not needed | | | | 2 | 3 | 4 | 9 | | 1 | 3 | 9 | 13 | | |
| % Missing (needed) | | | 100% | 100% | 100% | 100% | 100% | | 97% | 100% | 100% | 98% | | |

Table 7.n. Missing units: Flood Containment (FC) to Flood Containment Units

| Count of EXC (Terrain Clearing Service) | Brčko District | FEDERATION OF BIH | | | | | | REPUBLIKA SRPSKA | | | | | | |
|---|-------------------|-------------------|---------|--------------------------------|--------|-------|-----|------------------|--------------------------------|--------|-------|-----|--|--|
| | | Entity level | Cantons | Units of local self-government | | | | Entity level | Units of local self-government | | | | | |
| | | | | Large | Medium | Small | All | | Large | Medium | Small | All | | |
| Unit formed | | x | | 9 | | 2 | 11 | | 13 | 4 | 4 | 21 | | |
| Unit not formed | x | | 10 | 50 | 7 | 8 | 65 | x | 23 | 4 | 9 | 36 | | |
| Unit not needed | | | | 3 | | | 3 | | 1 | | | 1 | | |
| % Missing (needed) | | | 100% | 85% | 100% | 80% | 86% | | 64% | 50% | 69% | 63% | | |

Table 7.o. Missing units: Excavators (EXC) to Terrain Clearing Service





CONCLUSIONS AND RECOMMENDATIONS

5.1 Key areas in need of attention

The capacities for dealing with disasters in Bosnia and Herzegovina are generally organised around basic needs and appear closely related to coping with major risk scenarios. The scale of the areas for improvement in terms of the technical capacities and human resources in the country are remarkable at all levels. In a context of exposure to severe disasters that is characterised by rather limited resources the protection and rescue system also faces challenges related to the complex institutional governance architecture and systematic coordination between the various levels.

Proactive and constructive approaches to planning and organising protection and

rescue operations in the country are largely applied. The legislative framework is improving, while decisions on the organisation and functioning of protection and rescue at the local self-government unit level as well as relevant plans and programmes have been adopted. Risk knowledge is continuously improving and risk assessments have been developed in Brčko District, the Federation of Bosnia and Herzegovina and in Republika Srpska at the entity level as well as in most cantons and units of local self-government. The Ministry of Security of Bosnia and Herzegovina, in cooperation with the competent institutions in the entities and Brčko District, contributes continuously to the provision of projects for equipping and training, raising awareness and for the general improvement of the protection and rescue system. However, the available technical means for disaster response

are far from sufficient, given the diverse range of needs. Consequently, the overall gaps that need resolving remain quite significant. This ranges from small municipalities to the entities and the Armed Forces of Bosnia and Herzegovina. Brčko District has formed units for Urban Search and Rescue (USAR), Ground Forest Firefighting (GFF), Mountain Rescue and technical rope operations (MR), Flood Rescue using Boats – Diver Units (FRB-DIV), Water Pumping (WP) and Flood Containment (FC). Whereas, despite the need based on the recognised hazards (floods, fires and landslides), Search and Rescue (SAR), Water Purification (WPU), Water Storage and Transportation (WT) and Excavator (EXC) capacities do not exist.

Overall, only a few local self-government units at the municipal level in the entities have established capacities to cope with major disasters. The main missing units include Search and Rescue (SAR), Urban Search and Rescue (USAR), Mountain Rescue and technical rope operations (MR), Search and Rescue in Chemical, Biological, Radiological and Nuclear conditions (CBRN SAR), Water Purification (WPU), Water Storage and Transportation (WT), flood response units and Excavators (EXC). Search and Rescue in Chemical, Biological, Radiological and Nuclear conditions (CBRN SAR), Water Purification (WPU), Water Pumping (WP) and Flood Containment (FC) units have not been formed in the municipalities in either of the entities.

Most of the cantons lack Chemical, Biological, Radiological and Nuclear Detection and Sampling (CBRN) capacities, while Water Purification (WPU), Water

Storage and Transportation (WT), Water Pumping (WP), Flood Containment (FC) and Excavator (EXC) capacities are absent. Half of the cantons that actually need them, based on their respective hazard exposure, have Ground Forest Firefighting (GFF) and Flood Rescue using Boats – Diver Units (FRB-DIV) capacities.

At entity level, the Federation of Bosnia and Herzegovina has established units for Urban Search and Rescue (USAR), and Chemical, Biological, Radiological and Nuclear Detection and Sampling (CBRN), Water Purification (WPU), Flood Rescue using Boats – Diver Units (FRB-DIV), Water Pumping (WP), Water Storage and Transportation (WT), Ground Forest Firefighting (GFF), Flood Containment (FC) and Excavators (EXC) as well as others based on the risk profile at the entity level according to the adopted Risk Assessment on Natural and Other Disasters of the Federation of Bosnia and Herzegovina from November 2014.

At the entity level, Republika Srpska (hazards: earthquakes and floods) currently has in place Chemical, Biological, Radiological and Nuclear Detection and Sampling (CBRN), Flood Rescue using Boats – Diver (FRB-DIV), Water Purification (WPU) and Water Pumping (WP) units. Although needed, Urban Search and Rescue (USAR), Water Storage and Transportation (WT), Flood Containment (FC) and Excavator (EXC) units have not been formed; however, the processes for their formation have been initiated at the entity level.

Overall, compared to the general requirements for benchmark response units, a significant lack of human resources, vehicles and diverse response materials to

equip appropriately all necessary units was observed.

In general, the existing response equipment is obsolete. In this respect, as mentioned above, the general understanding is that the existing materials are in general old and that financial issues generally make it problematic to replace them or increase their number. This appears especially true in the case of vehicles (of any purpose) including trucks.

5.2 General recommendations for disaster preparedness

Hazard knowledge

Effective response preparedness is based primarily on hazard knowledge and an assessment of the likelihood and potential impact of a disaster.

All stakeholders of the protection and rescue system are encouraged to adopt the latest methodologies and know-how on risk assessment and disaster loss estimation and to use the relevant results to develop informed and integrated approaches to disaster risk management.

Important processes in this field are ongoing. Bosnia and Herzegovina has begun the important introduction of DesInventar,¹² a review of risk assessment methodologies and a scaling up of the Disaster Risk Analysis System,¹⁵ which all stakeholders should support.

In this regard, it is of paramount importance that appropriate frameworks are established to allow for the exchange of hazard related data among all participants, ranging from local self-government units to the level of the

institutions and bodies of Bosnia and Herzegovina and the international community. This should be done in accordance with the regulations and laws that regulate the field of protection and rescue.

Institutional and legislative frameworks

Effective institutional frameworks and legislation at all levels of administration are fundamental to the effective functioning of a disaster management system.

It is therefore crucial that the Ministry of Security of Bosnia and Herzegovina, the Federation of Bosnia and Herzegovina and Republika Srpska and Brčko District invest in a systematic review of the existing frameworks and plans for the development of an effective institutional architecture for protection and rescue. Among other aspects, the institutional frameworks that are currently in place must allow for information exchange and a clear definition of the mechanisms for disaster preparedness and response in accordance with the respective constitutions and laws in the country.

This includes defining which organisations should be involved along with their respective mandates and responsibilities. Depending on the scale of the emergency, a communication and coordination structure should be established along with agreements and procedures for cooperation between institutions and the bodies of Bosnia and Herzegovina, the entities and cantonal and local level authorities. Agreements on data exchange and on the joint management of response assets should define an agreement on the manner and content of data exchange and the method of coordination within the response modes.

Both entities are currently reviewing their respective legislation on protection and

rescue and civil protection. Following the adoption of new laws in both entities, the preparation of relevant bylaws will follow. In accordance with the implementing acts of the Council of Ministers of Bosnia and Herzegovina and the entity governments and with regard to the harmonisation of the legislation with EU legislation, a harmonisation of the legislation of the entities with the legislation of the EU will be conducted. United Nations Office for Disaster Risk Reduction (UNISDR) terminology from 2009 related to disaster risk reduction will be taken into account during the process of drafting the new laws and implementing acts.

Management and coordination

A well-functioning response system implies close coordination among all actors and partners that can offer support in disaster situations, ranging from the institutions and bodies of Bosnia and Herzegovina to the entities and the local level.

The Ministry of Security of Bosnia and Herzegovina, the entity civil protection directorates, the cantons, the units of local self-government and Brčko District should jointly define formal mechanisms to improve timely coordination among the actors concerned. Within this framework, these parties should invest efforts to secure enhanced synchronisation by means of joint or harmonised protection and rescue planning and the coordinated staffing of response operations. With the purpose of effective coordination for preparedness, it is also of utmost importance that stakeholders officially agree on appropriate systems to support management and monitoring of available response assets. Each administrative level should have its own IT assets and systems. However, these resources and systems should be compatible with one another.

It is recommended that the Ministry of Security, the entity civil protection directorates, the cantons, Brčko District and the units of local self-government formalise agreements and protocols on data sharing and put all necessary measures in place in order to organise the respective resources in an integrated manner and provide unity of action in the pursuit of a common goal.

Preparedness planning

Effective response requires prior knowledge of the capabilities of all of the bodies designated as having tasks to perform when a disaster occurs. Comprehensive planning is therefore essential for developing the capacities to respond appropriately to emergencies. This includes the linking of diverse preparedness measures: risk vulnerability assessments combined with an assessment of the existing capacities, contingency plans, early warning systems, regular capacity building and development of emergency technical supplies and procedures along with the mechanisms to fund response activities at all administrative levels in Bosnia and Herzegovina.

The Ministry of Security of Bosnia and Herzegovina, the entity civil protection directorates, the cantons, the units of local self-government and Brčko District are recommended to engage on an ongoing basis in formulating plans in a coordinated manner, undertaking activities to ensure that plans can actually be carried out in a coordinated manner, to regularly test and exercise plans in order to identify gaps and areas for improvement, identify resource needs and store and distribute resources where needed.

Capacity building

Building appropriate levels of capacities for disaster response

¹² <https://www.desinventar.net/>

¹⁵ DRAS is software developed by UNDP for local level risk assessments that enables free access for citizens to hazard data in order to increase disaster risk awareness as well as spatial risk assessments that combine hazard, land use and vulnerability data for decision makers. Available from <https://dras.undp.ba>

is fundamental. The Ministry of Security of Bosnia and Herzegovina, the civil protection directorates and Brčko District should invest regularly in capacity development in order to improve response preparedness. This should be based on a careful assessment of the existing human and technical resources at all levels, such as, for example, this Roadmap. Capacity assessments should be conducted regularly in order to evaluate the existing assets and to identify deficiencies and design appropriate corrective measures.

Capacity building strategies and actions must incorporate the lessons learned through responses to previous disasters, the development of specialised response units through the resources available in the system, tailored technical and tactical training, simulation exercise programmes, and evaluations of changes that have occurred within the overall preparedness system.

The Ministry of Security of Bosnia and Herzegovina, the entity civil protection directorates and Brčko District are encouraged to harmonise their respective capacity development efforts in order to ensure standardised, consistent and cyclical capacity building and training processes for their and other units and services, including through the establishment of training centres. Training should also be conducted in accordance with EU Civil Protection Mechanism (EUCPM) standards applied in the conduct of training. This would contribute to a reduction in the variability of the respective capabilities and therefore enhance the inter-operability of units and response equipment, help reduce inefficiency and secure regular retraining and establish a solid baseline for continuous improvement.

The observed deficits in the capacities suggests that

protection and rescue planners and decision makers should consider integrating their respective resources in order to form better structured and equipped specialised response units. It is rather unrealistic to expect that all municipalities in Bosnia and Herzegovina can develop all of the capabilities that are required in order to cope with their respective risk profiles. It is therefore recommendable that neighbouring local units of self-government that share common risks begin processes to join their resources and to create response units with improved capacities. This also implies that they assess how their respective surplus capacities can be utilised to establish larger joint units.

Funding

A well-functioning disaster management system also depends on the availability of financial resources for preparedness planning and response operations.

To this end, legal frameworks should provide for budget allocation and institutionalised funding mechanisms as part of disaster management plans at all levels. Ideally, this should include both emergency funds (i.e. accessible in times of disasters) and resources for preparedness activities.

Financing is regulated differently at the level of the institutions and bodies of Bosnia and Herzegovina and in both entities and in Brčko District. In the Federation of Bosnia and Herzegovina, a special protection and rescue fee is set and amounts to just over 20 million BAM annually in the entity. These funds and other funds accumulated from previous years can be used to finance projects identified in the Development Programme, including the rapid mobilisation of emergency resources (which can be used during disasters) and resources for activities related to

preparedness.

It is also important that the law defines clearly how emergency funds should be re-established at all levels once they have been utilised to respond to a disaster as well as where additional funds, including external resources, may be obtained in the event that the size of the disaster means that additional funds are required as well as how these additional resources can be smoothly mobilised and managed. This could include the requirement for approval under the relevant financial laws and standard operating procedures to regulate access to and the use of such funds.

5.3 Units to be formed

Based on the data presented in the section in Chapter 4 'Missing units' under 4.1 'Main findings drawn from the analysis of the collected data' and having in mind the link to the hazards and type of unit needed per administrative level, it is recommended to consider developing the following currently missing specialised capacities whilst respecting the relevant laws and regulations.

- Brčko District (hazard profile: floods, fires and landslides): Search and Rescue (SAR), Water Purification (WPU), Water Storage and Transportation (WT) and Excavators (EXC).
- The Federation of Bosnia and Herzegovina (entity level) (hazard profile: earthquakes, floods and fires) has all forms of units and therefore has no missing units.
- The cantons of the Federation of Bosnia and Herzegovina (cantonal level): Chemical, Biological, Radiological and Nuclear Detection and Sampling (CBRN) (6 cantons), Water

Purification (WPU) (all cantons), Water Storage and Transportation (WT) (9 cantons), Ground Forest Firefighting (GFF) (4 cantons), Flood Rescue using Boats – Diver Units (FRB-DIV) (5 cantons), Water Pumping (WP) (all cantons), Flood Containment (FC) (all cantons), EXC (all cantons).

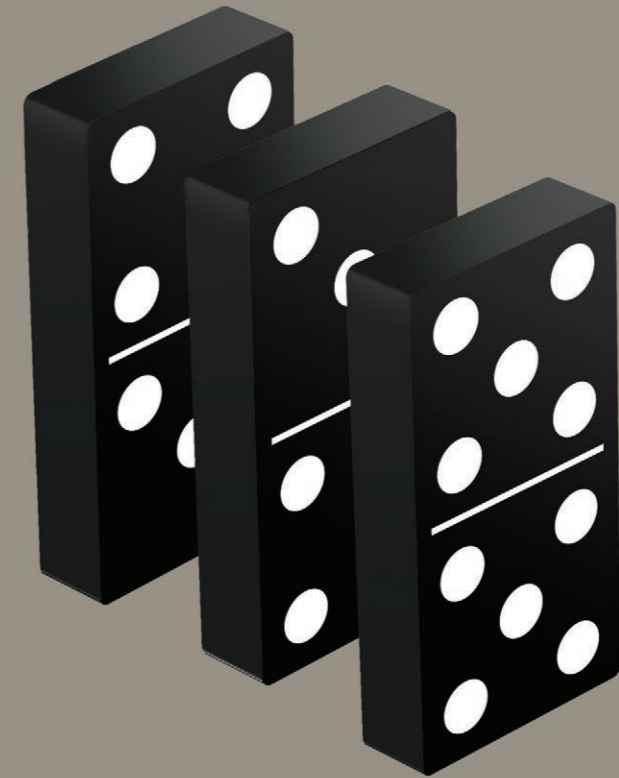
- The Federation of Bosnia and Herzegovina and units of local self-government level (large, medium and small municipalities): Search and Rescue (SAR) (60 municipalities), Urban Search and Rescue (USAR) (15 municipalities), Mountain Rescue and technical rope operations (MR) (58 municipalities), Search and Rescue in Chemical, Biological, Radiological and Nuclear conditions (CBRN SAR) (4 municipalities), Water Purification (WPU) (58 municipalities), Water Storage and Transportation (WT) (54 municipalities), Ground Forest Firefighting (GFF) (6 municipalities), Flood Rescue using Boats-Diver Units (FRB-DIV) (49 municipalities), Water Pumping (WP) (70 municipalities), Flood Containment (FC) (70 municipalities) and Excavators (EXC) (64 municipalities).
- Republika Srpska (entity level) (hazard profile: earthquakes and floods): the creation of Urban Search and Rescue (USAR), Water Storage and Transportation (WT), Flood Containment (FC) and Excavators (EXC) should be finalized.
- Republika Srpska (units of local self-government level) (large, medium and small municipalities): Search and Rescue (SAR) (49 municipalities), Urban Search and Rescue (USAR) (9 municipalities), Mountain

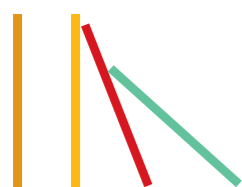
Rescue and technical rope operations (MR) (53 municipalities), Search and Rescue in Chemical, Biological, Radiological and Nuclear conditions (CBRN SAR) (4 municipalities), Water Purification (WPU) (34 municipalities), Water Storage and Transportation (WT) (54 municipalities), Ground Forest Firefighting (GFF) (7 municipalities), Flood Rescue using Boats-Diver Units (FRB-DIV) (17 municipalities), Water Storage and Transportation (WP) (43 municipalities), Flood Containment (FC) (44 municipalities) and Excavators (EXC) (36 municipalities).

- At the level of the institutions and bodies of Bosnia and Herzegovina: formation of specialised mixed protection and rescue unit as envisaged in the Framework Law on the Protection and Rescue of People and Property in the Event of Natural or Other Disasters in Bosnia and Herzegovina. Such a unit should be formed from specialised civil protection units and services in the entities, Brčko District, the bodies and legal entities at the level of Bosnia and Herzegovina and other institutions. Upon the approval of the competent bodies of the entities and Brčko District, the bodies and legal persons at the level of Bosnia and Herzegovina and other institutions, it would respond to cases of natural or other disasters and participate in international exercises, relief operations and other activities.



APPENDIX 1.





RECOMMENDED TYPES OF UNITS PER ADMINISTRATIVE LEVEL AND FACT-SHEETS OF SPECIALISED RESPONSE UNITS

This appendix summarises the specific recommendations for the development of the defined types of specialised disaster response units under the individual administrative levels in Bosnia and Herzegovina:

- municipalities in the Federation of Bosnia and Herzegovina and Republika Srpska (small, medium and large respectively, according to the assumptions contained in the sub-methodology for the response capacities needs assessment) and Brčko District;
- the cantons of the Federation of Bosnia and Herzegovina;
- the entities (the Federation of Bosnia and Herzegovina and Republika Srpska).

The specific recommendations are formulated to suggest the typologies of disaster response units that each administrative level in Bosnia and Herzegovina should consider establishing or developing further by building on the existing capacities, in accordance with the defined and recognised major hazards. The recommendations on specialised units per category of hazard under individual administrative levels comply with the approach of the sub-

methodology for the capacities needs assessment.

The recommendations provided in the present form of the Roadmap do not constitute a set of standard requirements nor a binding framework for improved response preparedness capacities in Bosnia and Herzegovina. Rather, the recommendations are intended as a framework for evaluation to be conducted by protection and rescue planners and decision makers. In this regard, the recommendations are intended to function as a general reference guide for the identification of measures for the further integration of disaster response in Bosnia and Herzegovina.

Practitioners under each administrative level should make use of the recommendations whilst keeping in mind, among other relevant aspects, the status of the response capacities within the relevant administrative units, detailed risk assessment and hazard knowledge, regulations and procedures in place for the procurement of specialised response equipment and materials, relevant annual expenditure and other budgetary aspects.

RECOMMENDED TYPES OF UNITS PER ADMINISTRATIVE LEVEL

A.

Small unit of local self-government (population up to 5,000)

Main types of response units

| HAZARDS | RECOMMENDED UNITS | SIZE |
|---------------------------|-------------------------------|-------|
| Earthquakes | SAR, MR, WT, EXC | Light |
| Floods | SAR, WT, FRB-DIV, WP, FC, EXC | Light |
| Fires | SAR, MR, WT, GFF, WP, FC | Light |
| CBRN industrial accidents | SAR, CBRN SAR | Light |
| Landslides | MR, EXC | Light |
| Heavy Snowfall | SAR, MR, EXC | Light |
| Drought | WT | Light |

Other types of response units

| HAZARDS | RECOMMENDED UNITS | SIZE |
|-------------|-------------------|-------|
| Earthquakes | PS | Light |
| Floods | PS | Light |

B.

Medium unit of local self-government (population 5,000 to 10,000)

Main types of response units

| HAZARDS | RECOMMENDED UNITS | SIZE |
|---------------------------|-------------------------------|-------|
| Earthquakes | SAR, USAR, MR, WT, EXC | Light |
| Floods | SAR, WT, FRB-DIV, WP, FC, EXC | Light |
| Fires | SAR, MR, WT, GFF, WP, FC | Light |
| CBRN industrial accidents | SAR, CBRN SAR | Light |
| Landslides | MR, EXC | Light |
| Heavy Snowfall | SAR, MR, EXC | Light |
| Drought | WT | Light |

Other types of response units

| HAZARDS | RECOMMENDED UNITS | SIZE |
|-------------|-------------------|-------|
| Earthquakes | PS | Light |
| Floods | PS | Light |



C.
Large unit of local self-government
(population above 10,000)

Main types of response units

| HAZARDS | RECOMMENDED UNITS | SIZE |
|---------------------------|------------------------------------|--------|
| Earthquakes | SAR, MR, WPU, WT, EXC | Medium |
| | USAR, ETC | Light |
| Floods | ETC | Light |
| | SAR, WPU, WT, FRB-DIV, WP, FC, EXC | Medium |
| Fires | SAR, MR, WT, GFF, WP, FC | Medium |
| CBRN industrial accidents | CBRN SAR | Light |
| | SAR | Medium |
| Landslides | MR, EXC | Medium |
| Heavy Snowfall | SAR, MR, EXC | Medium |
| Drought | WPU, WT | Medium |

Other types of response units

| HAZARDS | RECOMMENDED UNITS | SIZE |
|-------------|-------------------|--------|
| Earthquakes | PS | Medium |
| Floods | PS | Medium |

D.
Cantons

Main types of response units

| HAZARDS | RECOMMENDED UNITS | SIZE |
|---------------------------|----------------------------|--------|
| Earthquakes | ETC | Light |
| | CBRN, WPU | Medium |
| | WT, EXC | Heavy |
| Floods | ETC | Light |
| | CBRN, WPU, FRB-DIV, WP, FC | Medium |
| | WT, EXC | Heavy |
| Fires | WP, FC | Medium |
| | GFF, WT | Heavy |
| CBRN industrial accidents | CBRN | Medium |
| | WT | Heavy |
| Landslides | EXC | Heavy |
| Heavy Snowfall | EXC | Heavy |
| Drought | WPU | Medium |
| | WT | Heavy |

Other types of response units

| HAZARDS | RECOMMENDED UNITS | SIZE |
|---------------------------|--------------------------|-------|
| Earthquakes | FH, AMP, G-MEDEVAC, H&D | Light |
| | PS, ITC | Heavy |
| Floods | FH, AMP, G-MEDEVAC, H&D, | Light |
| | PS, ITC | Heavy |
| Fires | F-LAB | - |
| | FH, AMP, G-MEDEVAC, H&D | Light |
| | ITC | Heavy |
| CBRN industrial accidents | FH, AMP, G-MEDEVAC, H&D | Light |
| | ITC | Heavy |
| Landslides | H&D | Light |
| Heavy Snowfall | AMP, H&D | Light |

E.
Entities

Main types of response units

| HAZARDS | RECOMMENDED UNITS | SIZE |
|---------------------------|-----------------------|--------|
| Earthquakes | ETC | Light |
| | USAR, CBRN | Medium |
| | WPU, WT, EXC | Heavy |
| Floods | ETC | Light |
| | CBRN, FRB-DIV, WP, FC | Medium |
| Fires | WT, EXC | Heavy |
| | WP, FC | Medium |
| CBRN industrial accidents | WT, GFF | Heavy |
| | CBRN | Medium |
| Landslides | WT | Heavy |
| Heavy Snowfall | EXC | Heavy |
| Drought | EXC | Heavy |
| | WPU, WT | Heavy |

Other types of response units

| HAZARDS | RECOMMENDED UNITS | SIZE |
|---------------------------|--------------------------|-------|
| Earthquakes | FH, AMP, G-MEDEVAC, H&D | Light |
| | PS, ITC | Heavy |
| | F-LAB | - |
| Floods | FH, AMP, G-MEDEVAC, H&D, | Light |
| | PS, ITC | Heavy |
| | F-LAB | - |
| Fires | FH, AMP, G-MEDEVAC, H&D | Light |
| | ITC | Heavy |
| | AFF | - |
| CBRN industrial accidents | FH, AMP, G-MEDEVAC, H&D | Light |
| | ITC | Heavy |
| Landslides | H&D | Light |
| Heavy Snowfall | AMP, H&D | Light |
| Drought | F-LAB | - |

FACT-SHEETS OF SPECIALISED RESPONSE UNITS

A.

Main types of response units

| 1. SAR (Search and Rescue) | | | |
|--|--|-------------|------------|
| Tasks / capacities | Search for/rescue of persons in situations of distress, including by use of search dogs and the provision of lifesaving first aid. | | |
| Relevant hazards | Earthquakes, floods, fires, CBRN industrial accidents and heavy snowfall | | |
| Components | Light (N.) | Medium (N.) | Heavy (N.) |
| Staff | 9 | 18 | 27 |
| Personal protective equipment (set) | 9 | 18 | 27 |
| First aid kits | 3 | 6 | 9 |
| Command vehicles | 1 | 1 | 2 |
| Vehicles for the transportation of staff | 1 | 2 | 3 |
| Vehicles for the transportation of search dogs | 1 | 1 | 1 |
| Trailers for the transportation of search dogs | 1 | 1 | 1 |
| Off-road vehicles | 1 | 2 | 3 |
| Search dogs | 2 | 3 | 4 |
| VHF radios | 9 | 18 | 27 |
| Tents with field beds | 2 | 3 | 4 |
| Power generators | 2 | 3 | 4 |
| Lighting equipment (set) | 2 | 3 | 4 |
| Trailers | 1 | 2 | 3 |
| Training requirements | Command/coordination/assessment, search and rescue tactics/techniques, equipment familiarisation and functionality, first responder medical care, safety/security. | | |
| <i>Please Note: 1) A personal protective equipment set includes protective clothing, helmet, mask, gloves, boots, shoes and 2) technical search and rescue equipment and ICT/logistic equipment as required.</i> | | | |

2. USAR (Urban Search and Rescue)

| Tasks / capacities | Search for/extract victims from collapsed buildings, other urban/industrial entrapments or transport accidents also with the use of search dogs and technical equipment including lifesaving first aid and hazmat isolation. | | |
|--|--|-------------|------------|
| Relevant hazards | Earthquakes | | |
| Components | Light (N.) | Medium (N.) | Heavy (N.) |
| Staff | 18 | 40 | 55 |
| Personal protective equipment (set) | 18 | 40 | 55 |
| First aid kits | 6 | 12 | 18 |
| Command vehicles | 1 | 2 | 2 |
| Vehicles for the transportation of staff | 2 | 3 | 4 |
| Vehicles for the transportation of search dogs | 1 | 1 | 1 |
| Trailers for the transportation of search dogs | 1 | 1 | 1 |
| Off-road vehicles | 2 | 3 | 4 |
| Search dogs | 3 | 3 | 4 |
| VHF radios | 9 | 18 | 27 |
| Tents with field beds | 3 | 4 | 5 |
| Power generators | 3 | 4 | 5 |
| Lighting equipment (set) | 3 | 4 | 5 |
| Trailers | 2 | 3 | 3 |
| Training requirements | Command/coordination/assessment, search and rescue tactics/techniques, equipment familiarisation and functionality, first responder medical care, safety/security. | | |
| <i>Please Note: 1) A personal protective equipment set includes protective clothing, helmet, mask, gloves, boots, shoes, RCB protection set and 2) technical search and rescue equipment (breaking/breaching, drilling, lifting/moving, shoring, technical ropes, etc.) and ICT/logistic equipment as required</i> | | | |

3. MR (Mountain Rescue and technical rope operations)

| Tasks / capacities | Search for/rescue of victims in a mountainous environment and other remote natural terrain (including snow, avalanches, ice, crevasses, caves and high altitudes) or search for/rescue of persons in urban areas by means of technical rope operations. | | |
|--|---|-------------|------------|
| Relevant hazards | Earthquakes, fires, landslides and heavy snowfall | | |
| Components | Light (N.) | Medium (N.) | Heavy (N.) |
| Staff | 9 | 18 | 27 |
| Personal protective equipment (set) | 9 | 18 | 27 |
| First-aid kits | 5 | 10 | 15 |
| Passengers vehicles | 2 | 3 | 4 |
| Snowmobiles | 1 | 2 | 3 |
| Off-road vehicles | 1 | 2 | 3 |
| Search dogs | 2 | 3 | 4 |
| VHF radios | 9 | 18 | 27 |
| Tents with field beds | 2 | 3 | 4 |
| Heaters | 2 | 3 | 4 |
| Power generators | 2 | 3 | 4 |
| Lighting equipment (set) | 2 | 3 | 4 |
| Training requirements | Command/coordination/assessment, cold conditions operations, technical rope rescue operations, first responder medical care, safety/security, equipment familiarisation and functionality. | | |
| <i>Please Note: A personal protective equipment set includes protective clothing, helmet, gloves, glasses, boots including for operation in cold conditions and 2) search and rescue equipment and ICT/logistic equipment as required.</i> | | | |

4. CBRN (Chemical, Biological, Radiological and Nuclear Detection and Sampling)

| Tasks / capacities | Identify chemical, biological, radiological and warfare hazards through the use of mobile and laboratory based equipment, perform sampling and provide support for risk reduction through hazard containment and neutralisation. | | |
|--|--|-------------|------------|
| Relevant hazards | Earthquakes, floods and CBRN industrial accidents | | |
| Components | Light (N.) | Medium (N.) | Heavy (N.) |
| Staff | 3 | 6 | 10 |
| Personal protective equipment (set) | 3 | 6 | 10 |
| Disposable protective suits | 6 | 12 | 20 |
| Transportable decontamination units | 1 | 1 | 2 |
| Tools for RCB agents decontamination (set) | 1 | 2 | 3 |
| Radiological detectors | 1 | 2 | 2 |
| Gas detectors | 1 | 2 | 2 |
| Kits for detecting biological warfare agents | 1 | 1 | 2 |
| Chemical detectors | 1 | 1 | 2 |
| Mobile meteorological stations | 1 | 1 | 1 |
| Vehicles for the transportation of staff | 1 | 1 | 1 |
| Vehicles for the transportation of equipment | 1 | 1 | 1 |
| Water tanks | 1 | 1 | 2 |
| Off-road vehicles | 1 | 1 | 2 |
| Tents with field beds | 1 | 2 | 2 |
| Heaters and lighting equipment (set) | 1 | 2 | 2 |
| Power generators | 1 | 2 | 2 |
| VHF radios | 2 | 2 | 4 |
| Training requirements | CBRN agents/effects, CBRN detection, protection/decontamination/recovery of CBRN agents, equipment familiarisation and functionality, safety/security. | | |
| Please Note: 1) A personal protective equipment set includes a protective suit type A, coveralls, apron, helmet, glasses, masks, gloves, insulated breathing device, spare air tanks, gloves, boots, RCB protection kit and 2) decontamination facilities, marking material, technical equipment for hazard containment and neutralisation and ICT/logistic equipment as required. | | | |

5. CBRN SAR (Search and Rescue in Chemical, Biological, Radiological and Nuclear conditions)

| Tasks / capacities | Search for/rescue of victims in a contaminated environment through the use of protective suits, decontamination facilities and technical equipment for hazard containment and neutralisation. | | |
|--|---|-------------|------------|
| Relevant hazards | CBRN industrial accidents | | |
| Components | Light (N.) | Medium (N.) | Heavy (N.) |
| Staff | 9 | 12 | 18 |
| Personal protective equipment (set) | 9 | 12 | 18 |
| Disposable protective suits | 18 | 24 | 36 |
| Transportable decontamination units | 1 | 1 | 2 |
| Tools for RCB agents decontamination (set) | 3 | 4 | 5 |
| Radiological detectors | 1 | 3 | 4 |
| Gas detectors | 1 | 3 | 4 |
| Kits for detecting biological warfare agents | 1 | 2 | 3 |
| Chemical detectors | 1 | 2 | 3 |
| Mobile meteorological stations | 1 | 1 | 1 |
| Vehicles for the transportation of staff | 1 | 1 | 2 |
| Vehicles for the transportation of equipment | 1 | 1 | 2 |
| Water tanks | 1 | 1 | 1 |
| Off-road vehicles | 1 | 2 | 2 |
| Tents with field beds | 2 | 2 | 3 |
| Heaters and lighting equipment (set) | 2 | 2 | 3 |
| Power generators | 2 | 2 | 2 |
| VHF radios | 5 | 7 | 6 |
| Training requirements | Command/coordination/assessment, search and rescue tactics/techniques, CBRN agents/effects, first responder medical care, equipment familiarisation and functionality, safety/security. | | |
| Please Note: 1) A personal protective equipment set includes protective suit type A, coveralls, apron, helmet, glasses, masks, gloves, insulated breathing device, spare air tanks, gloves, boots, RCB protection kit and 2) decontamination facilities, technical equipment for hazard containment and neutralisation and ICT/logistic equipment as required. | | | |

6. ETC (Emergency Temporary Camp)

| Tasks / capacities | Provide emergency temporary shelter in the initial stages of a disaster through the provision of tents with heating and camp beds, power generators and lighting equipment, sanitation and hygiene facilities and drinkable water. | | |
|---|--|-------------|------------|
| Relevant hazards | Earthquakes and floods | | |
| Components | Light (N.) | Medium (N.) | Heavy (N.) |
| Tents with heating equipment | 65 | 130 | 220 |
| Covers and shelters for the population | 500 | 1.000 | 1.700 |
| Power generators and lighting equip. (set) | 65 | 130 | 220 |
| Training requirements | Command/coordination/assessment, international standards for emergency temporary camp set-up/management, safety/security. | | |
| Please Note: 1) Power generators and lighting equipment is provided as per the requirement and 2) ICT/logistic equipment as needed. | | | |

7. WPU (Water Purification)

| Tasks / capacities | Provide drinkable water from surface water sources and perform water quality control through the use of mobile water purification units, mobile water storage units and a mobile field laboratory. | | |
|---|--|-------------|------------|
| Relevant hazards | Earthquakes, floods and drought | | |
| Components | Light (N.) | Medium (N.) | Heavy (N.) |
| Staff | 5 | 10 | 15 |
| Mobile water purification units | 1 | 1 | 2 |
| Mobile water storage units | 1 | 1 | 2 |
| Mobile field laboratory | 1 | 1 | 2 |
| Passenger vehicles | 1 | 1 | 2 |
| Off-road vehicles | 1 | 1 | 2 |
| Water tanks | 1 | 1 | 2 |
| Tents with field beds | 1 | 2 | 2 |
| Power generators and lighting (set) | 1 | 2 | 2 |
| Training requirements | Water technology, chemical/biological water treatment methods, equipment familiarisation and functionality. | | |
| Please Note: 1) Personal protective equipment includes protective clothing, helmet, masks, gloves, boots, etc. and 2) couplings, spare parts, tools and ITC/logistic equipment as needed. | | | |

8. WT (Water Storage and Transportation)

| | | | |
|--|---|---------------|---------------|
| Tasks / capacities | Provide water transportation capacities in disaster affected areas for firefighting purposes and/or sanitation. | | |
| Relevant hazards | Earthquakes, floods, fires, CBRN industrial accidents and drought | | |
| Components | Light (N.) | Medium (N.) | Heavy (N.) |
| Staff | 2 | 4 | 4 |
| Passenger vehicles | - | 1 | 1 |
| Tanker truck with small pump | 1 (4,000 lt) | 1 (14,000 lt) | 1 (28,000 lt) |
| Training requirements | Equipment familiarisation and functionality. | | |
| <i>Please Note: 1) Couplings, spare parts, tools and ITC/logistic equipment is provided as needed.</i> | | | |

9. GFF (Ground Forest Fire fighting)

| | | | |
|---|---|-------------|------------|
| Tasks / capacities | Extinguish forest/vegetal fires by use of ground means and vehicles, including by setting lines of hoses with pumps and portable tanks and by create defensive lines. | | |
| Relevant hazards | Fires | | |
| Components | Light (N.) | Medium (N.) | Heavy (N.) |
| Staff | 9 | 20 | 50 |
| Personal protective equipment (set) | 9 | 20 | 50 |
| Command vehicle | 1 | 1 | 1 |
| Vehicles with firefighting equipment | 2 | 4 | 8 |
| Vehicles for the transportation of staff | 1 | 2 | 3 |
| Tanker trucks | 1 | 2 | 4 |
| VHF radios | 9 | 20 | 50 |
| Power generators | 2 | 4 | 7 |
| Trailers | 1 | 2 | 3 |
| Rescue boats | 1 | 2 | 3 |
| Training requirements | Command/coordination/assessment, firefighting tactics/techniques, equipment familiarisation and functionality, safety/security. | | |
| <i>Please Note: 1) Personal protective equipment includes firefighting clothing, helmet, masks, gloves, boots, shoes, gloves and 2) spare parts, hoses, adaptors for hose connection, field maintenance tools and ICT/logistic equipment as needed.</i> | | | |

10. FRB-DIV (Flood Rescue using Boats - Diver units)

| | | | |
|--|---|-------------|------------|
| Tasks / capacities | Search for/rescue of persons in flooded urban/rural areas, including the provision of first responder medical care and delivery of lifesaving aid/first necessities (medicines, food, water). | | |
| Relevant hazards | Floods | | |
| Components | Light (N.) | Medium (N.) | Heavy (N.) |
| Staff | 9 | 16 | 30 |
| Personal protective equipment (set) | 9 | 16 | 30 |
| Diving wetsuits | 5 | 6 | 10 |
| Rubber rescue boats | 1 | 2 | 3 |
| Aluminium rescue boats | 1 | 1 | 2 |
| Outboard motors | 2 | 3 | 5 |
| Passenger vehicles | 1 | 1 | 1 |
| Vehicles for the transportation of staff | 1 | 1 | 2 |
| Vehicles for the transportation of equipment | 1 | 2 | 3 |
| Trailers for rescue boats | 2 | 3 | 5 |
| VHF radios | 9 | 16 | 30 |
| Tents with field beds | 1 | 2 | 3 |
| Power generators and lighting (set) | 1 | 2 | 3 |
| GPS devices | 5 | 7 | 10 |
| Training requirements | Command/coordination/assessment, boat driving, swift water rescue tactics/techniques, equipment familiarisation and functionality, first aid, safety/security. | | |
| <i>Please Note: 1) Personal protective equipment includes helmet, mask, snorkel, neoprene gloves, lifejacket, neoprene water boots, fins, flashlight water boots and 2) spare parts, tools and ICT/logistic equipment as needed.</i> | | | |

11. WP (Water Pumping)

| | | | |
|--|---|-------------|------------|
| Tasks / capacities | Provide water pumping through the use of mobile pumps in flooded areas or assist firefighters by delivering water, including in areas and terrain that are not easily accessible. | | |
| Relevant hazards | Floods and fires | | |
| Components | Light (N.) | Medium (N.) | Heavy (N.) |
| Staff | 5 | 12 | 30 |
| Personal protective equipment (set) | 5 | 12 | 30 |
| Trailer pumps (5,000 l/m) | 0 | 1 | 2 |
| Medium capacity pumps | 3 | 2 | 5 |
| Passenger vehicles | 1 | 1 | 2 |
| Off-road vehicles | 1 | 2 | 3 |
| Trucks | 0 | 1 | 2 |
| Collapsible water tanks | 2 | 3 | 5 |
| VHF radios | 5 | 12 | 30 |
| Tents with field beds | 1 | 2 | 3 |
| Power generators and lighting (set) | 1 | 2 | 3 |
| Mechanical/ground work tools (set) | 1 | 2 | 3 |
| Training requirements | Command/coordination/assessment, water pumping tactics/techniques, equipment familiarisation and functionality, safety/security. | | |
| <i>Please Note: 1) Personal protective equipment includes protective clothing, boots, gloves; 2) both trailer and electrical pumps, which might have different capacities (l/min) and 3) mechanical/ground work tools, spare parts and ICT/logistic equipment as needed.</i> | | | |



| 12. FC (Flood Containment) | | | |
|---|---|-------------|------------|
| Tasks / capacities | Reinforce existing structures and build barriers to prevent further flooding of rivers, water basins and waterways and supervise/maintain barriers. | | |
| Relevant hazards | Floods and fires | | |
| Components | Light (N.) | Medium (N.) | Heavy (N.) |
| Staff | 5 | 12 | 30 |
| Manual sandbag filling machines (1 p.) | 5 | 10 | 15 |
| Flood barriers filled with water (set of 100 mt) | 0 | 4 | 8 |
| Inflatable flood barriers (set of 100 mt) | 0 | 4 | 8 |
| Light-weight barriers (set of 100 mt) | 0 | 4 | 8 |
| Vehicles | 1 | 1 | 0 |
| Off-road vehicles | 1 | 2 | 3 |
| Trucks | 0 | 1 | 2 |
| Forklifts | 1 | 1 | 2 |
| VHF radios | 5 | 12 | 30 |
| Tents with field beds | 1 | 2 | 3 |
| Power generators and lighting equip. (set) | 1 | 2 | 3 |
| Training requirements | Command/coordination/assessment, flood containment tactics/techniques, equipment familiarisation and functionality, safety/security. | | |
| <i>Please Note: 1) sandbags provided as required and 2) mechanical/ground work tools, spare parts and ICT/logistic equipment as needed.</i> | | | |

| 13. EXC (Excavators) | | | |
|---|---|-------------|------------|
| Tasks / capacities | Dig, remove and transport large quantities of soil and debris in disaster affected areas. | | |
| Relevant hazards | Earthquakes, floods, landslides and heavy snowfall | | |
| Components | Light (N.) | Medium (N.) | Heavy (N.) |
| Staff | 6 | 8 | 12 |
| Excavators | 1 | 1 | 2 |
| Bobcats | 1 | 1 | 2 |
| Off-road vehicles | 1 | 1 | 2 |
| Trucks | 1 | 2 | 4 |
| Fuel tanks | 1 | 1 | 2 |
| VHF radios | 3 | 4 | 6 |
| Training requirements | Equipment familiarisation and functionality, safety/security. | | |
| <i>Please Note: 1) spare parts, tools and ICT/logistic equipment as needed.</i> | | | |

B. Other types of response units

| 1. FH (Field Hospital) | | | |
|--|---|-------------|------------|
| Tasks / capacities | Provide initial and follow-up trauma and medical care, including triage, intensive care, surgery, treatment of serious injuries and evacuation. | | |
| Relevant hazards | Earthquakes, floods, fires and CBRN industrial accidents | | |
| Components | Light (N.) | Medium (N.) | Heavy (N.) |
| Medical team (number of staff) | 40 | - | - |
| Tents | 10 | - | - |
| Power generators and lighting equip. (set) | 2 | - | - |
| Off-road vehicles (Trucks) | 2 | - | - |
| Off-road vehicles | 4 | - | - |
| Ambulances (4WD) | 2 | - | - |
| Beds | 50 | - | - |
| ICT Units | 1 | - | - |
| Diagnostic units | 1 | - | - |
| Training requirements | Nursing, medicine and medical care in catastrophes and disasters. | | |
| <i>Please Note: 1) Medical supply and ICT/logistic equipment as needed (food, toilets and water purification systems).</i> | | | |

| 2. AMP (Advanced Medical Post) | | | |
|---|---|-------------|------------|
| Tasks / capacities | Perform triage on patients at the disaster site and provide medical care to prepare them for transportation to a permanent health facility. | | |
| Relevant hazards | Earthquakes, floods, fires, CBRN industrial accidents and heavy snowfall | | |
| Components | Light (N.) | Medium (N.) | Heavy (N.) |
| Medical team (number of staff) | 15 | - | - |
| Tents | 3 | - | - |
| Power generators and lighting equipment (set) | 1 | - | - |
| Off-road vehicles | 2 | - | - |
| Off-road vehicles (Trucks) | 1 | - | - |
| Ambulances (4WD) | 1 | - | - |
| Beds | 13 | - | - |
| Training requirements | Nursing, medicine and medical care in catastrophes and disasters. | | |
| <i>Please Note: 1) Medical supply and ICT/logistic equipment as needed.</i> | | | |

| 3. G-MEDEVAC (Ground Medical Evacuation System) | | | |
|---|--|-------------|------------|
| Tasks / capacities | Move and provide en route medical care to injured patients being evacuated from the disaster area to a permanent medical facility. | | |
| Relevant hazards | Earthquakes, floods, fires and CBRN industrial accidents | | |
| Components | Light (N.) | Medium (N.) | Heavy (N.) |
| Staff | 6 | - | - |
| Vehicles | 2 | - | - |
| Off-road vehicles | 2 | - | - |
| Tents with field beds | 2 | - | - |
| Power generators and lighting equip. (set) | 2 | - | - |
| Training requirements | Emergency medical care, ITC and communication procedures, equipment familiarisation and functionality, safety/security. | | |
| <i>Please Note: 1) Medical supply and ICT/logistic equipment as needed.</i> | | | |

| 4. H&D (Helicopters and Drones for recognition activities) | | | |
|--|--|-------------|------------|
| Tasks / capacities | Assess the disaster area by performing reconnaissance with helicopters and/or drones. | | |
| Relevant hazards | Earthquakes, floods, fires, CBRN industrial accidents, landslides and heavy snowfall | | |
| Components | Light (N.) | Medium (N.) | Heavy (N.) |
| Staff | 2 | - | - |
| Helicopters (incl. crew) | 1 | - | - |
| Drones | 1 | - | - |
| VHF radios | 2 | - | - |
| Training requirements | Field assessment and reporting, ITC and communication procedures, equipment familiarisation and functionality. | | |
| <i>please Note: 1) ICT equipment as required.</i> | | | |

| 5. PS (Power Supply on the site of the disaster) | | | |
|---|--|-------------|--------------|
| Tasks / capacities | Provide power supply in disaster affected areas for logistical support purposes. | | |
| Relevant hazards | Earthquakes and floods | | |
| Components | Light (N.) | Medium (N.) | Heavy (N.) |
| Staff | 2 | 4 | 6 |
| Power generators | 1 (200 KW) | 1 (400 KW) | 1 (1,000 KW) |
| Fuel tank trucks | 1 | 2 | 2 |
| Vehicles | 1 | 1 | 1 |
| Trucks | 1 | 1 | 1 |
| Training requirements | 1) Hazmat materials driving; 2) equipment familiarisation and functionality. | | |
| <i>Please Note: 1) wiring, spare parts, tools and ITC/logistic equipment as needed.</i> | | | |

| 6. ITC (Information technology and communications systems) | | | |
|---|--|-------------|------------|
| Tasks / capacities | Support office set-up and running in disaster affected areas by providing information technology and communication equipment, logistic and subsistence materials and transportation. | | |
| Relevant hazards | Earthquakes, floods, fires and CBRN industrial accidents | | |
| Components | Light (N.) | Medium (N.) | Heavy (N.) |
| Staff | - | - | 6 |
| Tents with field beds | - | - | 3 |
| Vehicles | - | - | 2 |
| Laptops | - | - | 4 |
| Printers | - | - | 2 |
| Mobile phones | - | - | 8 |
| Satellite network | - | - | 1 |
| VHF radios | - | - | 6 |
| Training requirements | Command/coordination/assessment, equipment familiarisation and functionality, safety/security. | | |
| <i>Please Note: 1) equipment for office set-up and running, logistic and subsistence support materials and ICT support equipment as required.</i> | | | |

| 7. AFF (Aerial Forest Fire fighting) | |
|---|--|
| Tasks / capacities | Extinguish forest and vegetal fires by means of aerial firefighting using helicopters. |
| Relevant hazards | Fires |
| Components | One size |
| Staff | 3 |
| Helicopters | 1 |
| Water buckets/releasing kits | 1 |
| Rescue hoists | 1 |
| Training requirements | Command/coordination/assessment, aerial firefighting tactics/techniques, equipment familiarisation and functionality, safety/security. |
| <i>Please Note: 1) spare parts, field maintenance sets and ICT equipment as needed.</i> | |

| 8. F-LAB (Field Laboratory for biological analysis) | |
|---|---|
| Tasks / capacities | Conduct field analysis of biological threats and emergencies using a light field laboratory system. |
| Relevant hazards | Earthquakes, floods and drought |
| Components | One size |
| Staff | 8 |
| Personal equipment (set) | 8 |
| Field laboratory equipment (set) | 1 |
| Vehicles | 2 |
| Power generators and lighting equip. (set) | 1 |
| Training requirements | Biology, equipment familiarisation and functionality. |
| <i>Please Note: 1) spare parts, tools and ICT/logistic equipment as needed.</i> | |



UNDP in Bosnia and Herzegovina
Zmaja od Bosne b.b.
71000 Sarajevo
Bosnia and Herzegovina

Tel: +387 (33) 293 400
Fax: +387 (33) 552 330
ba.undp.org



@UNDPBIH #IDRM

