

***Driv***ing Innovation in Crisis Management for ***E***uropean ***R***esilience

**CROATIA**  
Policy, Legislation, Organisation, Procedures & Capabilities (PLOPC) in crisis management and disaster response

*Responsible Partner: AIT (Bettina Jager)*

Scope and limitations

This study serves as supporting information for further work within DRIVER.

Only limited time and budget has been available for this first general survey, which needs to be considered in terms of scope and completeness of the respective studies.

The author/s of this study is/are responsible for its content and quality.

This report was revised at the end of 2015, reviewed internally by CSDM and amended according to reviewer's comments and recommendations upon the decision of the author/s.

# Overview

With a risk factor of 4.28 percent, Croatia ranks on the 120th position of the World Risk Index. Croatia shows a high exposure to floods, earthquakes, wildfires and droughts. Due to its past experiences of the Croatian War also accidents with leftover mines are a realistic threat in Croatia. In Croatia, the crisis and disaster management is built upon a civilian-based approach (Samardžija et al. 2014), which is conceived with the focus on protection and rescue. As the main source of law, the Protection and Rescue Act, adopted in 2004, defines the institutional structure, the rights and responsibilities and procedures and management to ensure the protection and rescue of human lives. After reforms in the period between 2000 and 2012, the civil protection, fire-fighting and a 112 system was included in the Croatian civil security system. The civil protection system in Croatia involves all levels – from the community level to the state level, but the National Protection and Rescue Directorate (NPRD) has been considered “as a single administrative organisation regulating norms and standards in the protection and rescue area”. The heads of local and regional self-government units as well as the director of the NPRD at national level are concerned with the establishment, development and the functioning of civil protection (IPA CP Cooperation Programme II 2014). The National Protection and Rescue Directorate, which is affiliated to the Ministry of Interior is the leading national authority for civil protection in Croatia. As a strategic actor at the national level, the NPRD is concerned with the administrative organisation by drafting plans, the assessment of risks and the coordination of the involved actors in the area of protection and rescue (Swedish Civil Contingencies Agency 2009). Furthermore, it assumes also a tactical-operative role by activating operational units, i.e. the police etc. At the operational level, the local and regional authorities are mainly responsible to organise the response in the case of an event. Since a disaster has been declared, the coordination and command competences will be transferred to the NPRD, which is activating the operational units. Thereby the NPRD can resort to the Croatian Fire-fighting Association, Croatian Mine Action Centre, Croatian Mountain Rescue Service, Volunteer Fire Brigades, Radio amateurs and other organizations, Croatian Red Cross, Croatian Rescue Dog Association and, if divers are needed, the Croatian Divers Association (European Commission 2014). The participation of the private sector in protection and rescue measures is based on a public-private-partnership. Despite the coordination competence of the NPRD, if assistance from the Croatian Armed Forces or police forces is required, a reconcilement between the Ministry of Defence, Ministry of Interior and the National Protection and Rescue Directorate may be necessitating. Apart from this, in mine accidents, CROMAC will take over the coordination function.

It is estimated that, the total protection and rescue expenditures, including fire-fighting, civil protection and other regular operational forces average approximately 0.45% of the GDP (for the year 2006). Amongst other, Croatia’s know how in demining represent one of the most exemplarily capabilities of Croatia. Furthermore, it has been emphasised, that Croatia features a professional protection and rescue system as well as a remarkable commitment of the citizens to engage voluntarily. As one of the new Member States of the European Union, Croatia assumes an important role in regional initiatives and benefits from its wide cooperation network with regional partners as well as with international organisations.

# Table of Contents

[CROATIA Policy, Legislation, Organisation, Procedures & Capabilities (PLOPC) in crisis management and disaster response 403](#_Toc444172792)

[Overview 404](#_Toc444172793)

[Table of Contents 405](#_Toc444172794)

[List of Tables 407](#_Toc444172795)

[List of Abbreviations 408](#_Toc444172796)

[1 Policy 410](#_Toc444172797)

[1.1 Risk Assessment 411](#_Toc444172798)

[1.1.1 Natural Hazards 414](#_Toc444172799)

[1.1.1.1 Flood 416](#_Toc444172800)

[1.1.1.2 Earthquake 416](#_Toc444172801)

[1.1.1.3 Extreme Temperature and related hazards 417](#_Toc444172802)

[1.1.2 Technological Hazards 418](#_Toc444172803)

[1.2 Policy and Governance 418](#_Toc444172804)

[1.2.1 Strategy scope and focus 420](#_Toc444172805)

[1.2.2 Monitoring and analytical support to policy making; R&D 420](#_Toc444172806)

[1.2.3 Policy for Prevention 421](#_Toc444172807)

[1.2.4 Policy for Preparedness 421](#_Toc444172808)

[1.2.5 Policy for Response 422](#_Toc444172809)

[1.2.6 Policy for Relief and Recovery 422](#_Toc444172810)

[1.3 Financing 423](#_Toc444172811)

[1.3.1 Investing in preparedness 423](#_Toc444172812)

[1.3.2 Investing in consequence management 423](#_Toc444172813)

[1.4 Policy review, Evaluation & Organisational Learning 424](#_Toc444172814)

[1.4.1 Post-Disaster Assessment 424](#_Toc444172815)

[1.4.2 Departmental Lessons Learned systems 425](#_Toc444172816)

[1.4.3 Centralised (national) Lessons Learned system 425](#_Toc444172817)

[1.4.4 International exchange for Lessons Learnt 425](#_Toc444172818)

[1.4.5 Regular policy reviews 426](#_Toc444172819)

[1.5 Resilience 426](#_Toc444172820)

[1.6 Information sharing and data protection 426](#_Toc444172821)

[2 Legislation 430](#_Toc444172822)

[2.1 Crisis (emergency, disaster) management concept 430](#_Toc444172823)

[2.2 General crisis (emergency, disaster) management law 432](#_Toc444172824)

[2.3 Emergency rule 434](#_Toc444172825)

[2.4 Specific, department/agency-level legal arrangements and regulations on emergency and disaster management 435](#_Toc444172826)

[2.5 Specific to the regional and local authorities legal arrangements and regulations on emergency and disaster management 436](#_Toc444172827)

[2.6 Legal regulations on the involvement of volunteers and specialised NGOs 436](#_Toc444172828)

[2.7 Legal regulations for international engagements of first responders and crisis managers 438](#_Toc444172829)

[3 Organisation 440](#_Toc444172830)

[3.1 Organisational chart 440](#_Toc444172831)

[3.2 Organisational cooperation 445](#_Toc444172832)

[4 Procedures 446](#_Toc444172833)

[4.1 Standing Operating Procedures (SOPs) and Guidelines 446](#_Toc444172834)

[4.2 Operations planning 447](#_Toc444172835)

[4.3 Logistics support in crises 447](#_Toc444172836)

[4.4 Crisis communication to general public; Alert system; Public Information and Warnings 448](#_Toc444172837)

[5 Capabilities 449](#_Toc444172838)

[5.1 Human resources 449](#_Toc444172839)

[5.2 Materiel (non-financial) resources 450](#_Toc444172840)

[5.3 Training 451](#_Toc444172841)

[5.4 Procurement 453](#_Toc444172842)

[5.4.1 Procurement regulation 453](#_Toc444172843)

[5.4.2 Procurement procedures 454](#_Toc444172844)

[5.5 Niche capabilities 454](#_Toc444172845)

[Resources 456](#_Toc444172846)

[Legislative acts 456](#_Toc444172847)

[Other normative acts 457](#_Toc444172848)

[Official documents (white papers, strategies, etc.) 457](#_Toc444172849)

[Online resources (e.g. websites of key CM organizations) 461](#_Toc444172850)

[Publications 462](#_Toc444172851)

[Expert interviews 465](#_Toc444172852)

List of Figures

[Figure 1: Geographic map of Croatia 411](#_Toc444096436)

[Figure 2: Climate zones in Croatia 412](#_Toc444096437)

[Figure 3: Ranking of natural disasters in Croatia by occurrence in the period from 1989 to 2006 (SEEDRMAI 2008) 415](#_Toc444096438)

[Figure 4: Map of Croatian seismic activity 417](#_Toc444096439)

[Figure 5: Organisation of emergency response in Croatia (WHO, 2012) 440](#_Toc444096440)

[Figure 6: The Structure of the National Protection and Rescue Directorate 442](#_Toc444096441)

## List of Tables

[Table 1: Major disasters in Croatia since 2000 (PreventionWeb 2014, EuropeanCommission 2014) 414](#_Toc444096364)

[Table 2: Summary of mistakes within the response to the Kornati Island Fire 424](#_Toc444096365)

[Table 3: Overview on operational forces for protection and rescue activities in Croatia 449](#_Toc444096366)

[Table 4: Overview on current emergency stock holding in Croatia 451](#_Toc444096367)

[Table 5: Overview on some international training sessions completed by Croatia in the last years 453](#_Toc444096368)

## List of Abbreviations

|  |  |
| --- | --- |
| CAF | Croatian Armed Forces |
| CBRN | Chemical, Biological, Radiological and Nuclear |
| CEA | Croatian Environment Agency (in Croatian language: AZO) |
| CEP | Civil Emergency Planning |
| CFA | Croatian Fire-fighting Association |
| CM | Crisis Management |
| CMCMH | Crisis Management Committee of the Ministry of Health |
| CMEP | Civil-Military Emergency Preparedness |
| CMEP SEE | Civil Military Emergency Preparedness South Eastern Europe |
| COC | County Operational Centre |
| CMRS | Croatian Mountain Rescue Service |
| CRC | Croatian Red Cross |
| CROMAC | Croatian Mine Action Centre |
| CW | Croatian Waters |
| DPPI | Disaster Preparedness and Prevention Initiative |
| DRR | Disaster Risk Reduction |
| EAPC | Euro Atlantic Partnership Council |
| ECMWF | European Centre for Medium-Range Weather Forecasts |
| ECR | European Centre for the Regions |
| ECURIE | European Community Urgent Radiological Information Exchange |
| EIPA | European Institute of Public Administration European Center for the Regions |
| ERCC | Emergency Response Coordination Centre |
| EU | European Union |
| EUMETNET | Network of European Meteorological Services |
| EUSF | European Union Solidarity Fund |
| GDP | Gross Domestic Product |
| ICPDR | International Commission for the Protection of the Danube River |
| ICPDR | International Commission for the Protection of the Danube River |
| INSARAG | International Search and Rescue Advisory Group |
| MEDEX | MEDiterranean Experiment |
| MFA | Ministry of Foreign Affairs |
| MoD | Ministry of Defence |
| MoI | Ministry of Interior |
| MRCC | National Headquarters for Coordinating Search and Rescue in Rijeka |
| NATO | North Atlantic Treaty Organization |
| NMHS | National Meteorological and Hydrological Service |
| NN | Narodne Novine (means the OG = Official Gazette in Croatia) |
| NPRD | National Protection and Rescue Directorate (in local language: DUZS) |
| RACVIAC | Regional Arms Control Verification and Implementation Assistance Centre |
| SAR | Search and Rescue |
| SC | Sava River Basin Commission |
| SEDM | South-East Europe Defence Ministerial |
| SOA | Security and Intelligence Agency |
| SOP | Standard Operating Procedure |
| UN | United Nations |
| UNDP | United Nations Development Programme |
| UNISDR | United Nations Office for Disaster Risk Reduction |
| UN-OCHA | United Nations Office for the Coordination of Humanitarian Affairs |
| UNS | Office for the protection of the Constitutional Order |
| USAR | Urban Search and Rescue |
| WHO | World Health Organisation |
| WMO | World Meteorological Organisation |

# Policy

Pursuant to Art. 1 of the Constitutional Act, (NN 56/90) and amendments, Croatia is a unitary state including three levels of governance, the central level, the regional level and the local level. The regional level of Croatia is divided into 20 Counties and the City of Zagreb. At the local level, the regional administration is sub-divided into 127 towns and 429 municipalities. In the course of the decentralisation process, which began in 2001, the local governments gained more right of self-determination related with more duties, i.e. by the transfer from the national budget to the budgets of the local governments (EIPA and ECR 2014). In Art. 133-138 the Constitution of the Republic of Croatia (NN 85/10) determines the hierarchy and the distribution of rights and responsibilities of the community-level as well as the local and regional self-government.

The main competences of the state include overall legislation and execution, security and defence, foreign and domestic policy, direction and control over the civil service operation and economic development. Whereas the regional level is responsible for tasks of regional importance, education, healthcare, regional and urban planning, economic development, environmental protection, transport and traffic infrastructure, establishment and development of the network of educational, medical, social and cultural institutions, maintenance of public roads and issuing location and construction permits (except in territories of large towns). Municipalities are assuming tasks of local importance which directly address the needs of the citizens, and which are not assigned to state bodies by constitution or act, organisation of settlement and “housing, spatial and urban planning, utility services, primary health protection, social welfare, elementary education, culture, physical culture and sports, consumer protection, environment (protection and improvement of natural environment), fire protection and civil protection and traffic management” [[1]](#footnote-1). Additionally, large towns have duties in the maintenance of public roads and the construction and renting permits.

As defined by Samardžija et al. (2014), the Croatian civil security system is characterised by a civilian-based rather than a military-based approach. Originally based on civil defence led by the Ministry of Defence, a shift toward civil protection under the direction of the Ministry of the Interior was made in 1994 (Austrian Red Cross 2014). Regarding the distribution of responsibilities, the civil protection concept of Croatia combines a bottom-up and a top-down approach and envisages the engagement of various stakeholders at all spatial and administrative levels. The Civil protection sector has been identified as the main framework for the provision of prevention, preparedness and response. It covers a wide range of tasks, beginning with risk assessment and the preparation of rescue plans to the monitoring of recent disasters (European Commission 2014).

On the basis of the existing legal framework, an all-hazard approach, including natural disasters as well as major accidents, can be identified. The Protection and Rescue Act, adopted in 2004, has been identified as the main source of law, which defines the institutional structure, the rights and responsibilities and procedures and management to ensure the protection and rescue of human lives. Based on the provisions of the Constitution of the Republic of Croatia, the Croatian Parliament adopted the Strategy of National Security in 2002.

## Risk Assessment

The Republic of Croatia covers about 87,609 square kilometres, of which 56,542 square kilometres is mainland. It is home to approximately 4,500000 inhabitants with an urbanization rate of 59% of the population (United Nations, Department of Economic and Social Affairs 2014).

It is bordering on Slovenia in the northwest, Hungary in the North, Serbia in the East, in the southeast to Bosnia and Herzegovina and southward on Montenegro. Westwards, Croatia has a maritime boundary to Italy (IPA CP Cooperation Programme II 2014). Croatia extends from the furthest eastern edges of the Alps in the northwest to the Pannonia plain and the banks of the Danube in the East (DUSZ 2014). As illustrated in the map (see Figure 70), the central area is surrounded by the Dianaric Alps and its southern parts extend to the coast of the Adriatic Sea.



Figure 70: Geographic map of Croatia

Available at: http://en.18dao.net/images/3/33/Map-Croatia.jpg; accessed: 22th September, 2014.

Since Croatia has been a member of the UN International Strategy for Disaster Reduction Hyogo Framework for Action 2005-2015 and the Regional Cooperation Council, risk assessment is an important issue at the Government of Croatia and became even more important since Croatia have joined the European Union in 2013. In particular, in the area of wild fires, monitoring and forecasting concepts of meteorological hazards has been established. Amongst others, it lies within the responsibility of the NPRD to ensure the implementation of the Disaster Risk Reduction capabilities (World Bank 2009) . As stated within the National Security Strategy of the Republic of Croatia (2002), a whole range of risk will be considered, which may threaten the survival of the population. The focus covers – apart from military issues – natural and technological catastrophes.

As regulated by the Protection and Rescue Act, the National Protection and Rescue Directorate (NPRD) is responsible for developing the National Disaster Preparedness Plan for Croatia. The NPRD carries out this task on the basis of the National Vulnerability Assessment and the Ordinance on the Methodology for Development of Risk Assessments, and Rescue and Protection Plans. The NMHS is in charge for the improvement of the quality and the amount of meteorological and hydrological information, as well as for raising awareness and involving the public in this process.

The World Meteorological Organization (2012), indicated, that also other ministries have the duty to conduct risk assessment in their specific area. As an example, the Ministry of Finance performs administrative and other tasks related to collecting and processing data on damages occurred as a result of natural disasters.

According to IPA CP Cooperation Programme II (2014), chemical and/or industrial accidents, transportation of chemicals, nuclear accidents and natural hazards have been regarded as major source of threats. As indicated by Perešin (2013), due to the fact that Croatia is a post-conflict country, which is situated near instable countries, there is a vital threat to become a victim of a terrorist attack. Inter alia triggered by programs of the European Union, vulnerability of Critical Infrastructures has already been addressed from different viewpoints. Radovic et al. (2012) indicated, that a considerable number of Croatian hospitals exhibit a high vulnerability to seismic hazards, because about 30 percent of hospitals were built in the mid of the 19th century and a large proportion is older than 40 years. Moreover, floods and raised level of underground water represent a threat to the critical health infrastructure.

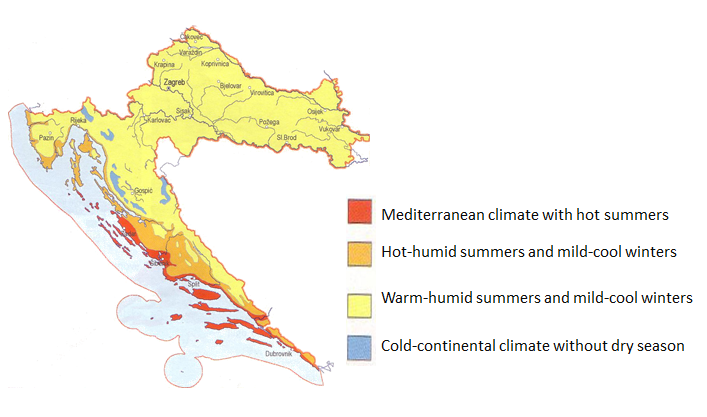


Figure 71: Climate zones in Croatia

Available at: <http://www.preventionweb.net/files/22169_20efdrr12oct2011wg1croatianastasaho.pdf>; accessed: 11th September, 2014.

Croatia is influenced by a Mediterranean and a Continental climate. The Adriatic coast and its surrounding area in the South are characterised by a Mediterranean climate with very warm regions, while the north-west region is the cold part of Croatia. Hot, dry summers and rainy winters with temperatures from 15 to 30°C characterise the coastal area (IPA CP Cooperation Programme II 2014). In general, heavy rainfall is typically for the Dianara mountain region and the region of Gorski Kotar.

The Croatian weather is mainly influenced by two spheres. On the one hand, the coastal zone of Croatia is – equivalent to the whole eastern rim of the Adriatic, ravaged by Adriatic storms, cyclones and intense bora winds. These Adriatic wind patterns are strongly correlated to very large scale global weather patterns, the Iceland cyclone and the Azores anticyclone (World Bank 2009). On the other hand, Croatia has a part of the typically European weather risks in the plain, which is characterised by storms, hail and heavy precipitation. In line with other countries in the South Eastern and Central Europe, Croatia is highly exposed to natural hazards, especially to floods, wildfires, earthquakes, heat waves, strong winds, and droughts (World Bank 2009), but Samardžija et al. (2014) indicated, that also technological accidents have to be considered in Croatia.

An overview on the major disasters in Croatia since 2000 is provided in Table 1.

Table 19: Major disasters in Croatia since 2000 (PreventionWeb 2014, EuropeanCommission 2014)

|  |  |  |  |
| --- | --- | --- | --- |
| Date | Crisis Description | # of persons killed | consequences |
| **May 2014** | Flood | 2 | Hundreds of evacuees, damages to infrastructure and thousands homeless |
| **February 2014** | Flood |  | No fatal casualties |
| **June 2012** | Transport accident | 8 | - |
| **November 2012** | Flood | - | No fatal casualties |
| **January 2010** | Flood | - | No fatal casualties |
| **May 2010** | Flood |  |  |
| **July 2009** | Transport accident | 6 | 55 casualties |
| **September 2008** | Transport accident | 14 | - |
| **August 2007** | Fire Accident “Kornati Island Accident” | 12 | One Badly injured fire fighter |
| **July 2007** | Central/Eastern Europe Heat Wave |  | - |
| **March 2006** | Central Europe Floods |  | - |
| **December 2005** | Extreme temperature/Cold Spell | 5 | - |
| **February 2005** | Storm | 2 | - |
| **July 2003** | Extreme temperature/Heat Wave | 788 | - |
| **May 2002** | Transport accident | 11 | - |
| **2001** | Flood | - | 1,200 people affected, no fatal casualties |
| **August 2000** | Wildfire | 1 | - |
| **June 2000** | Extreme temperature/Heat Wave | 40 | - |
| **2000** | Flood | - | 600 people affected, no fatal casualties |

### Natural Hazards

With an exposition of 11.53% in the World Risk Matrix (UNU-EHS and Alliance Development Works 2014), natural hazards account in sum the majority of hazards in Croatia. In comparison with the other ten countries covered in the report of SEEDRMAI (2008)[[2]](#footnote-2), Croatia is relative highly exposed to extreme temperature, floods and windstorms. Regarding the occurrence of natural events, floods clearly lead the ranking of natural disasters, followed by wildfires and extreme temperatures, as illustrated in Figure 72.

As summarised by Samardžija et al. (2014), the strongest potential losses for Croatian inhabitants are expected from floods, droughts, landslides and earthquakes. The most of the population is exposed to droughts (298,949 citizens exposed) followed by earthquake (57,890).

Figure 72: Ranking of natural disasters in Croatia by occurrence in the period from 1989 to 2006 (SEEDRMAI 2008)

In the frame of a comparative study of the regulations regarding major risk management, earthquakes, forest fires, floods, storms, landslides and drought has been identified as main natural hazards (Higher Institute for Emergency planning 2003). In the reference period of 2003 to 2012, seven major natural events have been observed by the World Bank (2013). They caused a total damage of USD 410 million, which correspond to a share of 0.6 % of the GDP.Although, floods rank first on the list of observed events in the last 30 years (see Figure 72), droughts, extreme temperatures and wildfires caused the most economic damage (PreventionWeb 2014).

The World Meteorological Organization (2012) explained, that forest fires mainly occur during dry periods throughout Croatia and especially during summer in the coastal areas when fire-fighting interventions require the engagement of substantial material, technical and personnel resources. As a big problem, the organisation emphasised that an evacuation of large numbers of tourists might be needed. Furthermore, the most people had been killed by heat waves in 2000 and 2003. Until now, the earthquake in 1996 and the floods have affected most people in Croatia.

The South Eastern Europe Disaster Risk Mitigation and Adaptation Initiative (2008) indicates that, until the year of publication, technological hazards, such as transport accidents caused the highest amount of deaths, followed by extreme temperature. Due to its potential extent floods and earthquakes may affected a wide area and thereby a big part of the population.

#### Flood

The rivers Sava, Drava, Mura, Danube, Zrmanja, Krka, Cetina and Neretva are the eight major rivers in Croatia that have been included in the Sava River Project for Flood Management (2014), (SEERDRMP, UNDP Croatia, and UNDP 2011).

SEE RDRMP et al. (2011) stated, that Croatia is suffering heavily from meteorological hazards:

River flooding occurs frequently. Croatia is located within the Danube basin and is under the influence of the Danube and Sava rivers and their tributaries. Around 15% of the territory of Croatia territory is prone to flooding on major rivers. This area contains 57 settlements and 87,000 residents. Between 1925 and 2000 23 destructive floods struck in seven different river basins. Flash floods affect 85 settlements containing 160,000 residents.

In the mountain area, flash floods and snowstorms during the winter season frequently occur. Especially Zagreb is threaten by flash floods. Effects of climate change, in particular an increase of the soil moisture and the warming trend will sharpen Croatia’s vulnerability to several hazards.

Flood protection systems are extremely complex and comprise a large number of structures that regulate and protect water (Samardžija et al. 2014). As a governmental organisation, Croatian Waters is responsible for the flood risk management, floods risk assessment and for floods defence planning. CW conducts integrated management of Croatian water resources on four river basin districts comprising one or more river basins of the major watercourses or parts thereof, which constitute a natural hydrographic unit (World Meteorological Organization 2012).

According to ICPDR (2012), the flood events in 2010 on the Croatian rivers were caused not only by an extreme precipitation in the territory of Croatia but also due to a large inflow from the upstream parts of the river basin in the neighbouring countries.

As mentioned by Radovic, damages to hospitals in Varaždin, Gospić, Osijek, Šibenik as results of heavy rain and/or poor maintenance were recorded in the past. In the meantime the Ministry of Health and Social Welfare has become aware of the risk for critical health facilities and has made reasonable endeavours in the field of crisis preparedness, i.e. risk assessment on the basis of WHO standards. According to the World Risk Report (2014)[[3]](#footnote-3), Croatia ranks on the 120th global position with a relatively low risk profile of 4.28%. Regarding the exposure to natural hazards, the climatic diversity of Croatia can be identified as a relevant factor. The National Human Development Report noted that there are “large spatial differences in Croatia” – especially between the continental lowland, the transitional mountain area and the Adriatic coast (for comparison – see Figure 71).

#### Earthquake

As found out by the IPA Beneficiary Country Needs Assessment (2011), similar to other Balkan areas, seismic hazards must be taken into account in Croatia. About 36% of the state territory can be threatened by seismic hazards (magnitude from 8-10 It has been indicated that the earthquakes caused an economic loss of USD 5 million during the last 33 years. Figure 73 shows the epicentre of about 30,000 earthquakes in Croatia. Every year, earthquakes, which have a magnitude higher than 6 on the Richter scale, occur. The population shall anticipate about 65 earthquakes per year.

It has been explained by SEEDRMAI (2008), that the Pannonian Basin is characterised by a typical intraplate activity with a less frequency of occurrence, but an intensive impact. The highest amount of seismic activity has been observed in the coast area. The latest seismic event was the Jabuka Island Earthquake, occurred in 2003 in the middle of the Adriatic Sea. It has been labelled as one of the heaviest quakes within the Adriatic microplate (South Eastern Europe Disaster Risk Mitigation and Adaptation Initiative (SEEDRMAI) 2008). As critically noted by SEERDRMP (2011), spatial plans concerning the seismic risk are available at the national and the municipal level. A closer look at risk areas has been given to the typical tourist zones at the coast.

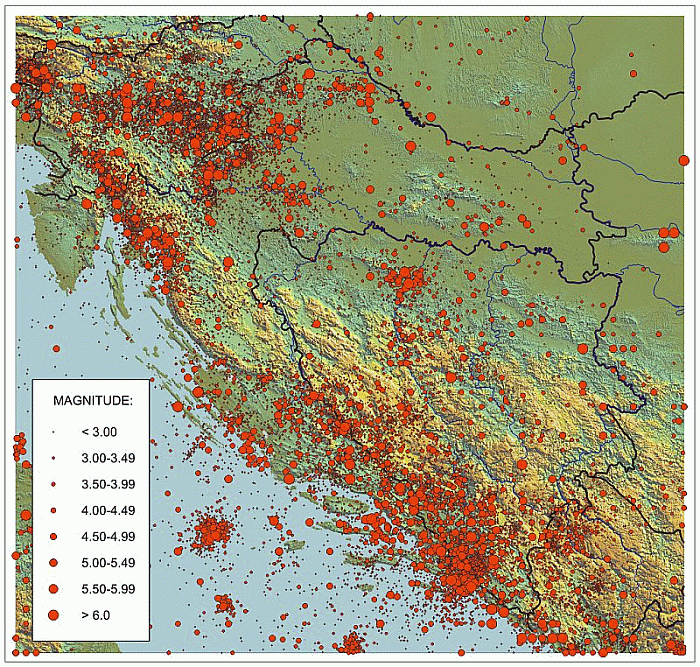


Figure 73: Map of Croatian seismic activity

Available at: <http://seekms.dppi.info/data/map-of-croatian-seismicity>; accessed: 21st September, 2014.

#### Extreme Temperature and related hazards

As emphasised by SEEDRMAI (2008), Croatia is very susceptible to extreme temperatures. An upward trend of warming in summer, a decrease of soil moisture in spring and an uncertainty of surface snow in Northern Croatia have been identified within the United Nations Development Programme. 2009. Furthermore, as a consequence of the climate change, heat waves will become more likely, which represents an increased probability of wildfires in a broader area (Holcinger 2011). Long periods of extremely hot temperatures have already claimed many deaths per year and caused an average of annual costs of EUR 176 million between 2000 and 2007. Exemplarily, the heat wave in June 2000 affected the four big cities Zagreb, Split, Osijek and Rijeka – in sum, 200 people and claimed about 40 deaths. The drought has been considered responsible for a huge amount of economic loss, as an example drought in 2003 caused a damage of USD 330 million. Particularly badly affected was the city Dubrovnik in the end of July 2003. Within only a few days, wildfires caused a damage of USD 177.5 million (United Nations Development Programme. 2009).

In that context, it has been explained by the World Meteorological Organization (2012) that a long and dry seasons without rainfall, accompanied by high temperatures are in general likely to lead to severe drought.

The Kornati Island Accident in August 2007 was considered as the largest fire accident in the history of Croatia, which prompted the Office for National Security of Croatian Parliament and the Ministry of Interior to order an in-depth exploration by a voluntary research team composed of researchers from various Croatian Universities and Institutions (Stipanicev and Viegas 2009). In the frame of a post-disaster assessment, it has been ascertained that a natural phenomenon known as “burning of non-homogenous gas mixture,” i.e. a high temperature burning, with fast expansion of hot gasses caused the accident (Samardžija, Tišma, and Skazlić 2014), whereby a total area of 99,887 square kilometres was burned (Stipanicev and Viegas 2009).

The Mediterranean region, as well as the eastern area of Croatia, suffers the most from heat waves. Thereby, the risk for wildfires will be increased and crops will be devastated.

### Technological Hazards

The Higher Institute for Emergency Planning (2003) regarded chemical/industrial, traffic and transport-related risks as well as marine pollution and nuclear accidents as relevant technological risks. Although, Croatia does not operate a nuclear power plant, there are two nuclear power plants in the neighbouring countries. Located in a distance of 30 kilometres to Zagreb, the nuclear power plant in Krško (Slovenia) poses a realistic hazard for Croatia. Another nuclear power plant is bordering on the north-eastern area of Croatia (Paks in Hungary) (Republic of Croatia 2012).

## Policy and Governance

There are several levels of civil protection related to emergency situations: international, national, ministerial, regional and local level as well as private sector, volunteers and NGOs.

As explained at the Website of the European Commission (2014):

The bodies responsible for harmonising operations of protection and rescue operational forces at all levels of responsibilities ranging from local to national ones and depending on the type and other specifics of the emergency consider the structure and size of protection and rescue operational forces that are to be engaged.

At the central level, the focus mainly lies on risk assessment, preparation of the policy and legal framework, ensuring the efficient functioning of the protection and rescue system as well as the funding of fire brigades and administrative supervision over fire-fighting organisations (EIPA and ECR 2014).

The Government of Croatia is the responsible body for coordinating activities of national agencies, including several ministries, in particular the Ministry of Defence, the Ministry of the Interior, the Ministry of the Sea, Transport and Infrastructure, the Ministry of Agriculture, Forestry and Water Management, the Ministry of Environmental Protection, Physical Planning and Construction and the Ministry of Health and Social Care (Government of the Republic of Croatia 2005). Based on the Act on the Structure and Scope of Activity of the Central State Administration Authorities, an emphasis lies on the National Protection and Rescue Directorate, which is affiliated to the Ministry of the Interior and integrates a wide range of competencies – beginning with the preparation of plans, over the management of operational forces to an overall coordination of various actors of the protection and rescue system. In the current policy, the Ministry of the Interior with the assigned inspectorate for fires and explosions and the Ministry of Defence with the capacity of special fire-fighting forces and the anti-fire escadrille play an important role in the crisis management of Croatia.

If a disaster occurs, the Crisis Management of the Government will be activated, including the Prime Minister and responsible ministers. In general, the civil protection sector is in direct command of the NPRD and local civil protection forces, which provides material assets and equipment during a disaster or major accident.

With a strong emphasis on the self-sufficient principle, the local self-governments are important bodies of the crisis management in Croatia. Due to the fact, that counties are responsible for local issues (Swedish Civil Contingencies Agency 2009), the heads of the local and regional self-government units are mainly in charge to ensure the establishment of civil protection by recruiting, mobilising and equipping appropriate protection and rescue organisations.

At the regional level, the duties include an annual assessment of the status of protection and rescue, if necessary, an adoption of threat assessments and drafting of protection and rescue plans, preparing guidelines for the organisation and development of a protection and rescue system, funding of services, performing protection and rescue measures and activities, establishing a Committee for the protection and rescuing at local level, coordination of all bodies in civil protection and fire protection at the county level and in the case of an immediate disaster at the county level, the mobilisation and coordination of all resources needed by the Head of County.

Local authorities are assuming quite similar tasks as the regional authorities, i.e. the obligation to assess the status of protection and rescue annually, preparing guidelines for the organisation and development of a protection and rescue system, take care of the funding etc.

In addition, they are responsible for fire protection plans, the establishment of a public fire-fighting brigade and the encouragement of several activities in the area of voluntary fire-fighting associations. In times of emergencies, the coordination of involved bodies at local level rests on local authorities and the Mayor ensures the mobilisation and coordination of available resources (EIPA and ECR 2014).

The Act on Protection and Rescue encourages the development of self-protection and self-help capabilities of the citizens to be able to “implement measures of personal and mutual protection against threats and the consequences of disasters” ( KMS 2014). In consequence, a clear statement has been made, that “each citizen has the right and obligation to be trained in protection and rescue and has the right to receive full and timely information about all threats of disasters, as well as possibilities, measures and activities for protection” (United Nations Office for Disaster Risk Reduction 2009).

### Strategy scope and focus

On the basis of a legislation analysis it has been concluded by SEEDRMAI (2008), that a clear scope of the Croatian strategy can be identified. Disaster laws are rather addressing response and preparedness than prevention or mitigation measures. The World Meteorological Organisation recognised the Protection and Rescue Actas the most relevant document concerning the management of disasters.

As mentioned in the frame of the IPA Beneficiary Disaster Risk Reduction Needs Assessment (2011), Disaster Risk Reduction is recommended to become a national as well as a local priority. While the Strategic Development Framework 2006-2013 focuses on measures like flood control, the Strategy of Government Programmes for 2010-2012 refers mainly to response-oriented measures, which are dedicated to improving the protection and rescue and fire-protection systems and the development of an integrated 112 emergency number. Solely, within the Spatial Planning Strategy structural measures have been partly addressed. Limitations exist in the area of risk reduction. In contrast to the well-defined risk assessment approaches to the natural hazards, the risk of technological hazards have been failed to take into account (United Nations Office for Disaster Risk Reduction 2009). The adoption of SEVESO II Directive has drawn more attention on risks posed by technology/industry.

### Monitoring and analytical support to policy making; R&D

As a central contact point for appropriate sciences in the area of protection and rescue, a close cooperation of the NPRD and national academia and research institutions has been established. Mandated to monitor and analyse the protection and rescue situation as well as to undertake efforts to continue the improvement of these skills, the NPRD is responsible for promotions and publications concerning the protection and rescue (Swedish Civil Contingencies Agency 2009). Furthermore, cooperation exists in the area of environmental monitoring. As emphasised by Rademaekers et al. (2013), Croatia has thematic databases, which includes interfaces of various systems measuring parameters, e.g. radiological value, weather, seismologic, air quality etc. as well as procedures for providing data to relevant services.

Due to the fact, that early warning, prevention, preparedness and response is centralised at the NPRD, it can prepare coordinated measures based on the existing governmental services, including the Croatian Waters, the NMHS, the Croatian Seismological Survey, the State Service for Public Health and the State Service for Nuclear and Radiological Safety. It has to be mentioned in this context that early warning systems maintenance and operation as well as warning belongs to the duties of authorities on municipial level, too (Swedish Civil Contingencies Agency. 2009).

It was emphasised by SEERDRMP et al. (2011) that the NMHS maintains a database of historical and recent meteorological and hydrological events, including extreme events, in line with WMO-standards. It acts as a provider of value-added services in support of hydro-meteorological risk assessment activities and services based on a real-time monitoring of hazards. Referring to SEEDRMAP (2007), the membership of NMHS in several organisations entails access to comprehensive weather data, which is essential for the national performance of forecasting and early warning. Further memberships exist at MEDiterranean Experiment (MEDEX) of the WMO and ECMWF (European Centre for Medium-Range Weather Forecasts). On the basis of the Standard Operating Procedures (SOP) for the utilization of the NMHS weather forecasts, a demanded linkage was made between the operational data utilization and information exchange between NMHS and System 112. Improvements in early warning mechanisms can be expected especially by the membership at the ECMWF. As a 24h/365 days per year service for weather and climate-related satellite data, images and products, EUMETSAT (European Organisation for the Exploitation of Meteorological Satellites) provides relevant data to the NMHS.

In Croatia, a multitude of systems has been implemented to forecast weather situation , such as 40 manned weather stations, 30 automated weather stations, 2 weather radars and other systems (SEEDRMAP 2011) . Weather data are also available through the membership at the network of 24 European National Meteorological Services (EUMETNET), which offer also many training exercises. Pursuant to the Act on Radiological and Nuclear Safety, 2010 (OG 28/10), the State Office for Radiological and Nuclear Safety monitors environmental radioactivity using online and offline systems (Republic of Croatia 2013). In Croatia, the Main Flood Defence Centre was established in the Croatian Waters (CW) as a central organisational unit for the purpose of management, coordination and information on flood defence status. According to the ICPDR (2012), a close cooperation exist between CW, the NMHS and NPRD. In the Danube river basin, water level status is monitored on more than 140 automatic water stations and other water stations relevant for immediate flood defence with data collected in real time. Furthermore, the hydro-meteorological conditions and forecasts of basins in the neighbouring countries are monitored.

### Policy for Prevention

The NPRD acts in the field of monitoring while the small-scale planning falls within the competences of the local and regional authorities (European Commission 2014). A general threat assessment and the preparation of appropriate plans are situated at the NPRD. Especially, its subordinated units, namely the Operations & Analysis Department of the Civil Protection Sector and the Firefighting, Protection and Rescue School are concerned with the development of prevention strategies, e.g. risk assessment, hazard monitoring and drafting SOPs (Swedish Civil Contingencies Agency 2009). The Firefighting, Protection and Rescue School is one of the leading agencies, which takes considerable efforts in standardisation of protection and rescue procedures. At the NPRD, a comprehensive data collection has been established, which provides information on all events, accidents and disasters in the country, as well as on big accidents and disasters abroad, disaggregates their consequences and protection and rescue intervention modalities (World Meteorological Organization 2012). The WHO (2012) indicated that health-related DRR activities, like mitigation, preparedness planning and recovery activities have been transferred to the county and municipal levels and are implemented on the basis of the specific hazard profiles.

### Policy for Preparedness

The Civil Protection Sector and the Firefighting, Protection and Rescue School are also strongly involved in preparedness measures. While the Prevention, Planning and Inspection Department at the first sector assumes mainly the role of monitoring current disasters, the Firefighting, Protection and Rescue School is the central institution, which is organising the training of professional staff. It also offers training sessions for citizens to enhance the self-help capacities and mutual assistance during disasters and major accidents (Swedish Civil Contingencies Agency 2009). The county level is involved in forwarding information to the population and maintains appropriate infrastructure for the public service sector (WHO 2012).

In order to contribute to disaster management, preparedness and response, the Croatian Red Cross implemented activities by, which prepares disaster response units on local and national level and informs citizens of all ages about correct procedures and behaviour in emergencies.[[4]](#footnote-4)

### Policy for Response

As stated by Samardžija et al. (2014), the authority and responsibility for crisis preparedness and response in Croatia is primarily located at the local level. If the crisis exceeds the capacities at the local level, the NPRD (National Protection and Rescue Directorate) takes over the responsibility at the state level. In case of an event, the Civil Defence Headquarters of the national, the county and the city level are responsible for the coordination of disaster response preparedness. Chaired by the Deputy Prime Minister, the Crisis Management Headquarter of the Government coordinates the main activities to cope with the disaster (Government of the Republic of Croatia 2005).

The Firefighting Sector is focusing on the protection against fires by performing an assessment of the situation as well of the needs of the field staff. As a main coordination body for the fight against fires, especially if they cross county borders, the civil protection sector is concerned with the monitoring of situations and is conducting needs assessment, encompassing record of the status of shelters and the manner in which they are used. Whenever it is necessary, the sector “harmonises joint activities with the Ministry of Defence and the Ministry of the Interior related to the engagement of the armed forces and law enforcement forces, respectively, as well as with other state administration bodies and legal entities in the area of protection and rescue”(IPA CP Cooperation Programme II 2014).

As operational actors, the NGOs and voluntary organisations play an important role in the response to disasters. In particular, the contribution of the Croatian Firefighting Association has been considered as the most important one because it very often participates in response operations and its equipment is very well developed (Samardžija et al. 2014).

A GIS featured database supports the NPRD in the monitoring of the protection and rescue situation, the collecting and analysis of data on hazards and disaster consequences. Moreover, the location of operational rescue forces, as well as equipment and material needs, can be traced.

### Policy for Relief and Recovery

No clear responsibilities have been defined for relief and recovery measures in Croatia. Mainly, NGOs carry out recovery measures.

The central authorities or the local governments will arrange the reconstruction of damaged state infrastructure. Due to the fact, that counties and municipalities are responsible for the infrastructure and other public services, they may be held liable for arranging and financing reconstruction efforts (WHO 2012). Also, private companies contribute to relief and reconstruction efforts in the aftermath of disasters. Exemplary was the commitment of Coca-Cola HBC to the Central Europe Flood in 2014. As the state of emergency was declared in Croatia, Serbia and Bosnia and Herzegovina after severe floods, Coca-Cole supports relief agencies at the local level as well as the Red Cross.

The company prompted the assistance of around 3,000 employees and provided water and food. Solely, Croatia received 140,000 litres of bottled water.[[5]](#footnote-5)

## Financing

### Investing in preparedness

“At the national level funding for disaster management and DRR is a combination of a budget allocations for the National Protection and Rescue Directorate, other respective Governmental entities (HMS, RSS, Croatian Waters, Croatian Forests)” [[6]](#footnote-6) and funds allocated for the implementation of specific disaster protection plans, i.e. the National Flood Protection Plan, Intervention Plan during Wild and Forest Fires on the territory of the Republic of Croatia etc. Local DRR activities have been supported mainly from national entities. Thus, local governments do not have adequate resources to fulfil their legal mandate regarding DRR (SEERDRMP, UNDP Croatia, and UNDP 2011). Samardžija et al. stated (2014) that the national budget for protection and rescue annually ranges between EUR 60 and 68 million which is some 0.4 percent of the state budget. A major part consists of the cost of NPRD (90 percent), CRC (0.1 percent), CMRS (3.9 percent) and partly of CFA (6 percent). These costs have an annual share of 0.2 percent of the state budget. It was indicated that these organisations also have other funding sources. There is a plan to distribute the financing sources at the national level also to other ministries, in particular to the MoD, MoI, etc.

According to the estimations of the United Nations Office for Disaster Risk Reduction (2009), the annual cost for the Civil Protection System amounted to around EUR 50 million, which is 0.98 percent of GDP. This includes salaries of the public servants involved in Civil Protection, salaries of professional fire-fighters as well as costs for equipment, technologies and emergency assets. At the county level, the allocations for protection and rescue ranged from 0.46 percent to 1.5 percent of the annual budget (1.5 percent allocated by the City of Zagreb). In 2011, the counties have allocated about EUR 15.7 million for protection and rescue.

According to Pollner et al. (2010), Croatia has a budget reserve of USD 5.5 million of annual allocations from the municipal budget fund. 60 percent of the total costs for demining measures were financed by the state budget and Croatia’s public enterprises and 40 percent by donors, EU-funds and the loans of the World Bank.

### Investing in consequence management

In Croatia, there are no specific relief funds for preparing the damage of reducing the impact of disasters. The Government of the Republic of Croatia finances the compensation for disaster damage and for alleviating the effects of natural disasters by a reserve of the national budget (Government of the Republic of Croatia 2005). National budget funds are allocated to the National Protection and Rescue Directorate according to the national planning and budget plan. The budget for recovery and investment is covered by the funds of the Ministry of Health and Social Welfare. The WHO (2012) explained, that counties receive lump sums from the national budget and their relevant administrations allocate them according to their annual plans.

As determined in Art. 40 of the Act on Protection from Natural Disasters, 97 (NN 73/97) and explained in the Criteria for Assessing Disaster Damage, 1998 (NN 96/98), local or regional bodies can reduce the receivables (taxes) or provide financial relief. Insurances play an important role in financing the consequences of disasters. Insurance to reduce the impact of disasters is considering liability issues and covers damages to property caused by natural disasters and personal injuries caused by human-induced risks, i.e. spreading hazardous substances in the environment. The EU Solidarity Fund (EUSF) serves as an effective instrument to provide aid. After the ice storm in January and February 2014, Croatia received EUR 8.6 million to reimburse rescue costs in the affected regions.[[7]](#footnote-7) In comparison, Croatia was granted aid of EUR 4 million by the EUSF after the heavy rainfall in 2010 to reimburse the cost of alleviation in affected areas (Radovic, Vitale, and Tchounwou 2012).

## Policy review, Evaluation & Organisational Learning

### Post-Disaster Assessment

A comprehensive framework for post-disaster assessment has been established at the NPRD, which monitors the protection and rescue situation, collects and analyses data on hazards and disaster consequences and keeps the records on operational protection and rescue forces, their location, equipment and material needs, in a single GIS database (SEERDRMP, UNDP Croatia, and UNDP 2011). Due to the fact, that the NMHS has a focus on analysing previous and current disasters, conducting trend analysis and maintains several memberships in appropriate international organisations, post-disaster assessment belongs inter alia to the tasks of NMHS.

As mentioned in chapter 1.1.1.3, the fire accident at the Kornati Island gave rise to a comprehensive post-disaster assessment at the Office for National Security of Croatian Parliament and the Ministry of Interior. The appointed researchers identified some shortfalls within the response to the disaster and defined 37 recommendations for improvements on that basis (Stipanicev and Viegas 2009).

Table 20 provides an overview on some of the most impressive mistakes in the response to the Kornati Fire. As indicated by the authors of the report, despite the list of mistakes, it should be noted that the accident presents a major challenge for the fire-fighting forces due to its unknown nature.

Table 20: Summary of mistakes within the response to the Kornati Island Fire

based on the findings of Stipanicev & Viegas (2009)

|  |  |
| --- | --- |
| Subject of mistake | Short description |
| **Equipment** | Radio communication of the fire-fighters was not working well |
|  | Only one airplane was in operation in Croatia |
|  | Only 4 Canadair airplanes for fighting forest fires were available in Croatia |
| **Preparedness** | The fire protection of the National Park Kornati was not appropriately organized according to existing plans |
|  | Fire fighters were not wearing the complete working uniform resistant to fire |
| **Response** | False assessment of the situation – because two other large fires were active in the region, the airplane was sent from Kornati Island to another location |
|  | The rescue of the victims was not organized appropriately |

### Departmental Lessons Learned systems

Departmental lessons learned systems could be supposed for the NMHS, the NPRD and the Fire-fighting Protection and Rescue School. Ministries have to provide annual reports on threat assessment of their area of responsibility to the NPRD (European Commission 2014). Annually, the State Office for Radiological and Nuclear Safety provides a report about the “National Implementation of the Obligations under the Convention on Nuclear Safety”. Also, public agencies, which have been established by the government of the Republic of Croatia, have to deliver annual reports. As an example, the Croatian Environment Agency (CEA), which is dedicated to collect, integrates, and process environmental data, provides annual updates[[8]](#footnote-8) about the environmental information system, a summary of international efforts in the environmental community and reports about progress in the area of projects and cooperation.

### Centralised (national) Lessons Learned system

In order to promote disaster risk reduction beyond departmental borders, the Ministry for Science, Education and Sport established a Curriculum Revision Working Group, which involves the Ministry for Science, Education and Sport, the NPRD, NMHS, the Republic Seismological Survey, the Croatian Red Cross as well as other ministries and experts (SEERDRMP, UNDP Croatia, and UNDP 2011).

As an example, a close cooperation between the NPRD and the NMHS was stipulated by joint training and improvements to the standard operating procedures across agencies linked to the different threat levels and lessons learnt from each disaster event.

### International exchange for Lessons Learnt

Croatia joined the Euro-Atlantic Partnership Council (EAPC), which provides a framework for Planning and Review Process (PARP) in which framework Croatia and NATO define and achieve partner goals. Furthermore, NATO Committee meetings serve as a platform for sharing knowledge and experience between the heads of their national civil emergency planning organisations and members of national delegations at NATO at least twice a year (The Croatian Parliament 2002). In November 2014, Croatia joined the conference entitled, “Sharing information and solutions to reduce flood risk, and enhancing cross-border cooperation in mitigating risk and flood protection” in Sarajevo. It addressed civil protection professionals, water management experts and decision-makers from Albania, Croatia, Republic of Macedonia, Montenegro, Slovenia, Serbia, Bosnia and Hercegovina as well as professional OSCE staff. The RACVIAC-Centre for Security Co-operation of Croatia participated the event to discuss approaches for reducing potential risks from disasters and respond mechanisms with representatives from other countries.[[9]](#footnote-9) Training programmes in the frame of the Civil Protection Module provide a good opportunity for exchange of experience with other representatives and discuss lessons learned by training courses, joint exercises and an experts’ exchange system.

### Regular policy reviews

Regional authorities, as well as local authorities, have the obligation to draft a report about the assessment of the status of protection and rescue once a year or upon passing their budget (European Commission 2014). This implicates the adoption of outcomes from the threat assessment and draft protection and rescue plans. At ministerial level, administrative authorities have to draft and forward a threat assessment to the NPRD in the segment applying to the region of their competency.

## Resilience

At all levels (state, county, city and municipality) the Republic of Croatia is providing an estimation of the vulnerability of the population,, material and cultural resources, and the environment to natural and man-made disasters and major accidents. Based on these estimations, plans for protection and rescue in the response to potential threats have been prepared at all levels. Therein, a determination of available capacities, as well as equipment, which is on the disposal of each authority level, is provided. One of the sectors of the NPRD is responsible for civil protection managing civil protection forces in case of disasters. For each county departments for civil protection are established (Swedish Civil Contingencies Agency 2009). As an example, an expert of the County Department for Civil Protection from Split Dalmatia (2014) has illustrated the principle of preparing plans on the basis of the Plan for Accidental Marine Pollution in the Republic of Croatia. Each county makes own plans and basically, the County Operational Centre (COC) is responsible for the implementation of procedures and measures for predicting, preventing, restricting, preparedness for and response to disasters by the county contingency plan. COC is also responsible for operational participation in the implementation of the plan and sub-regional plans. A COC always has his commander, and, in this case, it is the harbourmaster.

According to the National Plan for Interventions, the COC of Split-Dalmatia County may take over the operational actions in the areas of operations of neighbouring COC (i.e. COC from both Šibenik-Knin County and Dubrovnik-Neretva County), in case the quantity of the pollution exceeds the capacities of a single COC, or if more than one county might be threatened and if marine pollution can endanger the marine environment, human health and economic use of the sea.In such cases processes are performed in cooperation with the neighbouring COC and under coordination of National Headquarters for Coordinating Search and Rescue in Rijeka (MRCC).

## Information sharing and data protection

The NPRD is responsible for the maintenance of a database on operational forces, assets and measures (Swedish Civil Contingencies Agency 2009). However, in the event of a crisis, public media may become a relevant information source for the population and trigger public pressure, sometimes even dictate the answers to certain types of threats. Despite this fact, at the moment, there is no strategy to promote social media for that purpose (Expert Interview 2014). Governmental entities like the NHMS, the Republic Seismological Survey, Croatian Forests, and Croatian Waters collect, store and analyse risk information from their areas of responsibility (Samardžija, Tišma, and Skazlić 2014). All of them are linked to the Operation and Communications Centre (Centre 112), which merges and forwards information from different sources (SEERDRMP, UNDP Croatia, and UNDP 2011).

According to Article 14 of the Information Security Act (NN 79/07), the Office of the National Security Council is the central government body for the coordination of information security measures and standards within the Republic of Croatia and the exchange of classified and unclassified information between the Republic of Croatia and foreign countries and organisations.

“Information security measures and standards include organising special data bases for classified information within the Republic of Croatia, as well as for classified information which is transmitted from other countries, international organisations or institutions with which the Republic of Croatia co-operates.”

Public access to environmental data is based on the Act on the Right of Access to Information (OG 25/13). This Act contains provisions that are in accordance with the following acts of the European Union:

* Directive 2003/98/EC of the European Parliament and of the Council of 17 November 2003 on the re-use of public sector information,
* Regulation 1049/2001 of the European Parliament and of the Council of 30 May 2001 regarding public access to European Parliament, Council and Commission.

Pursuant to Article 18a of the Act on Personal Data Protection (NN 103/03, 118/06, 41/08 and 130/11), the NPRD has appointed clerk for the protection of personal data which:[[10]](#footnote-10)

* Takes care of the legality of the processing of personal data;
* The realisation of the right to protection of personal data;
* Cooperating with the agency for protection of personal data in connection with the implementation of control of personal data;
* Perform other tasks stipulated by the law on personal data protection and subordinate regulations adopted thereunder.

Within the Aarhus Convention, an implementation report indicated that the Water Act determines the procedure for ensuring the flow of information between the National Protection and Rescue Directorate, the State Water Inspectorate and Croatian Waters (Republic of Croatia 2013). Based on the Ordinance on the Content, Form and Manner of Keeping Water Documents (OG 120/10), Croatian Waters collects and processes water-related data. Based on the Act on Radiological and Nuclear Safety, 2010 (OG 28/10), the State Office for Radiological and Nuclear Safety monitors environmental radioactivity and publishes the results on the website of the State Office.

Furthermore, information related to nuclear safety and the system of preparedness in case of a nuclear or radiological disaster and other information related to radiological and nuclear safety are available at the website. The Croatian Institute for Toxicology and Anti-doping maintains an extra web page to inform the public about hazards of dangerous chemicals and protection measures. In Croatia, the Act on the Right of Access to Information (OG 25/13) extends to all public authorities.

Cooperation for the purpose of data sharing and information exchange has been established with the following organisation:

* IAEA - International Atomic Energy Agency.
* ICPDR - International Commission for the Protection of the Danube River.
* UN/ECE – IAN System (United Nations Economic Commission for Europe).
* NATO – EADRCC (North Atlantic Treaty Organization – Euro-Atlantic Disaster Response Coordination Centre).
* ECURIE (European Community Urgent Radiological Information Exchange).
* UNESCO IOC (Intergovernmental Oceanographic Commission).
* TWFP (Tsunami Warning focal Point).
* Neighbouring countries (Protocols with Slovenia, Bosnia and Herzegovina, etc.).

In the frame of the Community Civil Protection Mechanism, several tools have been developed to facilitate adequate preparedness and effective response to disasters at the EU level:

* MIC (Monitoring Information Centre) European Union.

MIC is located at the European Commission in Brussels. It provides 24 hours/365 days per year information about pending requests for assistance. Dedicated to seek for international assistance if the event exceeds the capacities of the affected country, it monitors the situation in the case of emergencies and major accident within the EU, neighbouring countries and the rest of the world. By a formal request of the affected country, the mechanism can be activated.

* Common Emergency Communication and Information System (CECIS)

In order to provide a rapid response by facilitating the communication between the MIC and national authorities, CECIS is designed as a reliable web-based alert and notification system.

According to the representative of the County Department for Civil Protection (2014), data on volunteers are primarily located at the level of services like NPRD, fire-fighters, CMRS and RC, and have not been united in one single registry of volunteers.

Moreover, on the basis of treaties, the mutual exchange of information is regulated with the following parties[[11]](#footnote-11):

* The Act of ratification of the North Atlantic Treaty (NN, MU 3 2009).
* Security Agreement between the Republic of Croatia and the North Atlantic Treaty Organization (NN, International Agreement 14/03).
* Agreement between the Republic of Croatia and the European Union on security procedures for the exchange of classified information (NN, International Agreement 9/06).
* Security Arrangements between the Office of the National Security Council (UVNS) of the Republic of Croatia, the EU Council general Secretariat Security Office (GSCSO) and the European Commission Security Directorate (ECSD) for the protection of classified information exchanged between the Republic of Croatia and the EU (October 2007).
* Agreement between the Government of the Republic of Croatia and the Government of the Republic of Bulgaria on mutual protection and exchange of Classified Information.
* Agreement between the Government of the Republic of Croatia and the Council of ministers of the Republic of Albania on mutual protection of Classified Information.
* Agreement between the Government of the Republic of Croatia and the Government of the Republic of Macedonia on exchange and mutual protection of Classified Information.
* Agreement between the Government of the Republic of Croatia and the Government of the Republic of Estonia on mutual protection of Classified Information.
* Agreement between the Parties to the North Atlantic Treaty for the Security of Information.
* Agreement between the Government of the Republic of Croatia and the Government of the Czech Republic on mutual protection of classified information.
* Agreement between the Government of the Republic of Croatia and the Government of the Slovak Republic on mutual protection of classified information.
* Notification on coming into effect of the Agreement between the Government of the Republic of Croatia and the Government of the Slovak Republic on mutual protection of classified information (NN, International Agreements 6/10).
* Agreement between the Parties to the North Atlantic Treaty for Co-operation regarding Atomic Information with Secret Technical Annex to the Agreement between the Parties to the North Atlantic Treaty for Co-operation regarding Atomic Information and Confidential Security Annex to the Agreement.
* Notification on coming into effect of the Agreement between the Government of the Republic of Croatia and the Government of the Czech Republic on mutual protection of classified information (NN, International Agreements 8/10).
* Agreement between the Government of the Republic of Croatia and the Government of the French Republic on mutual protection of classified information (NN, International Agreements 7/11)
* Notification on coming into effect of the Agreement between the Government of the Republic of Croatia and the Government of the French Republic on mutual protection of classified information (NN, International Agreements 12/11)
* Agreement between the Government of the Republic of Croatia and the Government of the Republic of Slovenia on mutual protection of classified information (NN, International Agreements 15/11)
* Notification on coming into effect of the Agreement between the Government of the Republic of Croatia and the Government of the Republic of Slovenia on mutual protection of classified information (NN, International Agreements 1/12)

# Legislation

## Crisis (emergency, disaster) management concept

In sum, there are several strategic papers, which are relevant for civil protection. Two key documents are cited below:

Important milestones to promote national security, have been achieved by the “National Security Strategy”, 2002 (NN 79/07) and the “National Strategy for the Prevention and Suppression of Terrorism”, 2008 (NN 139/08).

National Security Strategy

The National Security Strategy of the Republic of Croatia, adopted in March 2002 (NN 32/02) and amended in 2004, expresses the political views on national security of the Croatian Parliament as the highest political and legislative institution of the Republic of Croatia.

Within the document, security was defined as “a functional area of operation of security institutions and society in general in achieving the security goals and interests of the Republic of Croatia” (Government of the Republic of Croatia 2005). The strategy builds the basis for institutional targets, guidelines and programs to react to “general security challenges and concrete forms of endangering the Republic of Croatia”.

Within the strategy the following principles have been taken into account (The Croatian Parliament 2002):

* Croatia’s present geo-political position is characterized by its determined effort to advance towards and enter Euro-Atlantic and European security organisations.
* State of the security challenges and risks area for the Re public of Croatia.
* State of the system and successfulness of national security operations.
* Available resources.

As described in the National Security Strategy (2002), possible results of natural and technological disasters in the country or a specific region pose a constant security threat for its citizens and material goods.

In detail, the National Security Strategy addresses the following threats (The Croatian Parliament 2002):

* Terrorism;
* Proliferation of weapons;
* Leftover mines and explosive devices;
* Instability of neighbouring countries;
* Natural Disasters;
* Technological Disasters;
* Infectious disease;
* Threats to information systems and the private domain.

Against the background of a prospected EU membership, an interdepartmental Commission, chaired by the MoD, presented a new National Security Strategy in 2010, which was oriented on existing EU-standards. Aiming at strengthening of the national security and the NATO collective defence, therein an involvement of “professionals, the scientific and the general public in the process of developing the strategy”[[12]](#footnote-12) was declared.

Based on the comprehensive risk approach, cooperation on the local, regional and state level has been defined as vital for the achievement of national interests (Samardžija et al. 2014).

Mahečić (2010) indicates that the National Security Strategy offers different tools for providing and building the necessary level of the security to Croatia, which are inter alia, an understanding of the necessity to establish cooperation within the state institutions and administrative levels as well as with international and regional counterparts, a comprehensive list of the National Security Objectives that should serve as a security policy framework for all the state institutions involved as well as the conceptualisation of pursuing the security policy.

Strategic Defence Review

The Strategic Defence Review built the basis for the practical realisation of Croatia’s National Security Strategy and Defence Strategy (NN 33/02). It provides the direction for developing the defence system and the Croatian Armed Forces to ensure the protection of vital interests of the Republic of Croatia and its citizens. Multiple risks associated with natural and man-made disasters require the contribution of defence capabilities to support civil authorities in the more serious national crisis situations. As stated in the Strategic Defence Review in 2005, the Ministry of Defence focuses mainly on four key scenarios for which effective response capabilities must be developed; these are:

* Regional Crisis with a complex threat to Croatia’s security;
* Attack on a NATO Member;
* Crisis response operation abroad under the auspices of UN, NATO or the EU;
* Natural or man-made disaster in the Republic of Croatia.

While the first two of the enumerations above were classified as low-risk and the scenario of natural and man-made disaster as medium-risk, crisis response abroad was assessed with a high-risk potential. In order to promote Croatia’s national security, the MoD participates in emergency and civil-military crisis planning, coast guard responsibilities, host nation support and multi-faceted security-related issues by inter-agency cooperation (MINISTRY OF DEFENCE 2005)*.*

Additional National Plans of Action

Planning activities of the NPRD in the area of protection and rescue are guided by the Strategic Development Plan of the State intervention units of civil protection for the period from 2014 to 2016.

As another important policy, the National Plan of Action concerning Environmental Impacts, 2002 (NN 46/02) was adopted to determine the measures for the protection of the environment. Specific responsibilities, e.g. from the Croatian Meteorological and Hydrological service (NMHS) were defined within the chapter “Environmental protection and effective environmental management”. In a more detailed way, the roles and responsibilities at different administrative levels and of various actors were covered by the Activity Programme for the Implementation of the Special Fire Protection Measures in Republic of Croatia in 2010. Within the intervention plan during Wild and Forest Fires on the territory of the Republic of Croatia, the structure, roles, and responsibilities of relevant agencies, coordination and management systems, capacity building, public information procedures, and the financial support for implementation were determined (SEERDRMP, UNDP Croatia, and UNDP 2011).

Within the Strategy of Government Programs for the period 2011-2013, an assessment of the current protection and rescue systems conclude, that cooperation shall be improved. Therein, the further development of the GIS system by an integration of the 112 system was set on the agenda.

A quite important framework was defined within the Strategy of Government Programmes for 2010-2012, wherein the disaster management was considered as a part of a general concern and a definition of the organisational principle of the protection and rescue system over all involved actors was provided (World Meteorological Organization 2012).

As identified by Perešin (2013), the “Strategic Plan of the Ministry of the Interior and Other Institutions in Function of the Protection and Rescue for the Period of 2012-2014” is a relevant document, which is based on an overarching comprehension of public security. It implicates strategic measures to deal with criminal acts, accidents as well as with natural disasters – all types of hazards, which may threaten the human life, the personal integrity, the public safety, etc.

In the frame of the Strategy of Government Programmes and State Budget for the period 2010-2012, the overall budget for the protection and rescue system was laid down. Furthermore, it determines the budgetary sources of the different administrative levels and ministerial departments (Samardžija et al. 2014). The direction of the rescue and protection system in the Republic of Croatia based on the Program for Equipping and Technical Development of the National Protection and Rescue Directorate until 2009.

## General crisis (emergency, disaster) management law

According to IPA CivilProtection 2014 the following acts are of major relevance for the protection against disasters in Croatia:

* Protection and Rescue Act.
* Fire-Fighting Act.
* Act on Protection against Natural Disasters.

The Protection and Rescue Act (Protection and Rescue Act, 2004) is the primary legal source for regulating civil protection. The Protection and Rescue Act provides a definition of the protection and rescue system, including, amongst others, the tasks of the command and coordination bodies, the activities of the operational communication centre – 112 and provisions for international cooperation (IPA CP Cooperation Programme II 2012). Within the Protection and Rescue Act, various threats have been addressed and the distribution of competences in the management of threats suggests an individual focus on specific hazards by each responsible body. “The Act on Protection Against Natural Disasters defines the term natural disaster and provides the basis for protective measures, the rights and duties of protection officers, evaluates damage and details how to assist affected areas” (Swedish Civil Contingencies Agency 2009). It is supplemented by other laws related to the certain areas of critical infrastructure protection, the mountain rescue (Borić 2014), protection against natural disasters, the organizing element of the fire brigades and fire protection. As described in KMS (2014), the law regulates the following issues:

* System of protection and rescue of citizens, goods and property in disasters and major accidents;
* Management and coordination of protection and rescue activities;
* Rights, obligations, specific training and general education of participants in protection and rescue activities;
* Tasks and the structure of protection and rescue authorities;
* The way to alert and warn;
* Guidelines for mobilisation of protection and rescue.

In 2007, the Act on Protection and Rescue was harmonized in order to address the SEVESO II Directive. Additionally, more specific legal acts and plans, focusing on specific threats like floods, major fires, transport accidents and ionizing radiation, etc., have been developed to regulate the protection procedure in specific cases, e.g. firefighting, protecting humans in mountain areas, protection and rescue measures in accidents and transportation with dangerous substances. At the community level, extra plans for protection and rescue measures in municipalities, cities and the state are available (Swedish Civil Contingencies Agency 2009). Within the Act of Protection and Rescue, the principles of solidarity and self-responsibility encourage citizens to carry out measures of personal and mutual protection against threats and the consequences of disasters.

Furthermore, the planning and financing of the system of protection and rescue is regulated by Articles 40 and 41 of the Protection and Rescue Act (NN 174/04, 79/07, 38/09). Protection and rescue plans at the national level are part of the Croatian Defence Plan, and they incorporate all existing national plans for different types of threats. Plans also establish material, technical resources and sources of funding proposed activities (Samardžija et al. 2014).

* Ordinance on the methodology for making threat assessments and protection and rescue plans (NN 30/14 and 67/14)

As general rules for protection and rescue, the “Regulations on the mobilization and action of operational and rescue forces” (NN 40/08, 44/08) regulate the deployment of operational and rescue forces for protection and rescue activities.

The list of important laws regarding Civil Protection can be extended by the following ones:

* Act on Critical Infrastructures (NN 56/13);
* Act on Radiological and Nuclear Safety, 2010 (NN 28/10);
* Decision on determining the sector from which the central administrative authorities identify national critical infrastructure and lists the order of the sectors of critical infrastructure (NN 108/13).

Regarding the level of the European Union, the following regulations have an effect on Croatia’s disaster management (World Meteorological Organization 2012):

* European Flood Directive on the Assessment and Management of Flood Risks, 2007 (2007/60/EC);
* Council Directive on the freedom of access to information on the environment, 1990 (90/313/EEC).

At the international level, Croatia signed the following relevant treaties:

* Law on Ratification of the United Nations Framework Convention on Climate Change, 1992
* Kyoto Protocol to the Convention on Climate Change, 1999
* Law on Ratification of the United Nations Convention to Combat Desertification in Countries
* Experiencing Serious Drought and/or Desertification, Particularly in Africa – Convention to
* Combat Desertification (Paris 1994);
* Cooperation Agreement with WMO, International Civil Aviation Organization (ICAO), and EUMETSAT
* Cooperation Agreement with ECMWF, EUMETNET and Economic Interest Grouping of the National Meteorological Services of the European Economic Area (ECOMET)

## Emergency rule

“The President, as the supreme commander of the armed forces, declares a state of emergency. He is responsible for the defence of the country's independence and territorial integrity” (Inter-Parliamentary Union 2013).

As declared within the Constitution of the Republic of Croatia (NN 85/10):

The President of the Republic shall pass decrees with the force of law and take emergency measures in the event of a state of war or an immediate danger to the independence and unity of the Republic, or when government bodies are prevented from regularly performing constitutional duties. During the time the President of the Republic is making use of such powers, the House of Representatives may not be dissolved. The President of the Republic shall submit decrees with the force of law for approval to the Chamber of Representatives as soon as the Parliament is in a position to meet.

From a practical view, the NPRD can propose a declaration of a state of emergency to the Croatian Government. Samardžija et al. (2014) indicated, that Act on Protection and Rescue (Art. 53) envisages the mobilisation of citizens, temporary detraction vehicles, temporary restriction of property rights, etc. by a competent civil servant of the NPRD. The constitution determines the deployment of the Croatian Armed Forces to assist firefighting and rescue operations, surveillance and protection at sea.

As laid down in Art. 17 of the Constitution, the Parliament decides by a two-thirds majority of all its members or, if it is unable to meet, at the proposal of the government with the counter-signature of the Prime Minister, by the President, that during a state of war or an immediate threat to the independence and unity of the state, or in the event of severe natural disasters “fundamental freedoms and human rights can be restricted to the extent strictly required by the exigencies of the situation and cannot result in the inequality of persons due to race, colour, sex, language, religion, national or social origin” (European Commission for Democracy through Law 1995). Despite the state of emergency, fundamental human rights, such as the right to life, the right not to be subjected to torture, etc. will not be restricted or derogated from. As clarified by the Inter-Parliamentary Union (2013), “the extent of these restrictions must be proportional to the nature of the emergency and cannot lead to unequal treatment of individuals. The work of the parliament is continued under these circumstances, in accordance with the regulations laid down by the Constitution.”

## Specific, department/agency-level legal arrangements and regulations on emergency and disaster management

The establishment of National Protection and Rescue Directorate is based on the Act on the Amendments to the Act on the Organization and Scope of Responsibilities of Ministries and National Administrative Organizations (NN 30/04).

The involvement of the staff of the NPRD is regulated by the “Regulations on uniform members of operational and rescue forces of the National Protection and Rescue Directorate (NN 81/09, 115/10) and in general, the “Regulation on the internal organization of the National Protection and Rescue Directorate” (NN 43/12 and 125/14) determines the working principle of the NPRD. Cooperation between specific agencies is regulated by the “Ordinance on the method of cooperation authorized persons Coast Guard and the National Protection and Rescue and the method of exchange of information necessary for their effective and concerted action (NN 40/09).

As stated by the Swedish Civil Contingencies Agency (2009), aside from the MoI, also the MoD, the Ministry of the Sea, Transport and Infrastructure, the Ministry of Agriculture, Forestry and Water Management, the Ministry of Environmental Protection, Physical Planning and Construction as well as the Ministry of Health and Social Care take part in Civil emergency planning. Exemplary, the Strategy of National Security and the Strategy of Defence have been mentioned as inter-ministerial cross-cutting issues (IPA CP Cooperation Programme II 2014). Due to the fact, that security issues are interconnected, at least coordination between the MoI and the MoD is required.

The following laws mainly regulate the military-related cooperation in protection and rescue activities:

* The Defence Law (NN 33/02);
* Ordinance on the organization, manning, and equipping forces and civil defence units for alerting (NN 111/07).

The Constitution of the Republic of Croatia specifies in Art. 7, that armed forces can be deployed to support the police and other state bodies in the face of a threat posed by nature, in fire-fighting as well as in rescue operations.

Moreover, coordination is necessary with the Ministry of Health and Social Welfare, which is responsible for health issues in national disasters. The Health Care Act, aiming on the protection of health of the population, regulates inter alia the provision of health care services in the MoD and the CAF (WHO 2012).

The participation of state intervention units of Civil Protection is regulated as follows:

* Decision on the Establishment of the State intervention units of civil protection;
* Strategic Development Plan of the State intervention units of civil protection for the period from 2014 to 2016;
* Law on Participation of the Croatian Armed Forces, police, civil defence, civil servants and employees in peacekeeping operations and other activities abroad (NN 33/02, 92/02);
* Police Act (NN 129/00, NN 41/08).

Additionally, the “Ordinance on the organization, equipping, training, start-up and mode of action of the intervention of fire brigades and reimburse the costs of their activities (NN 31/11)” specifies the principles of deployment of the fire brigades in Croatia. As explained at the Vademecum-Website (2014), the envisaged participation of the private sector in protection and rescue measures and related rights and obligations of individual protection, as well as threat assessment and Protection & Rescue Plans are defined by the Protection and Rescue Act and supporting legislation.

## Specific to the regional and local authorities legal arrangements and regulations on emergency and disaster management

The Constitution of the Republic of Croatia determines three levels of responsibilities for Protection and Rescue ( KMS 2014). Apart from the state level, measures aiming at emergency and disaster management are located at the local and regional level.

The Act on Community Level, Local and Regional Self-Government defines the responsibility of the county prefects at the county level as well as the competencies of the mayors of the towns or municipalities at the local level. Article 135 emphasises the duties of local self-governments (municipalities) in the area of fire protection and civil defence. It was emphasised by the Croatian Fire-fighting Association (2011) that professional and volunteer fire-fighters are equal regarding the fulfilling their duties. However, the professional fire-fighting units work on basis of the Law of Public Institutions while the volunteer fire-fighting units operate on the basis of the Law of Associations of Citizens. Additional 4 fire-fighting intervention-units work in four coastal counties in Dalmatia, and all fire-fighting units are commanded during the summer by the Centre in Divulje near Split, which are part of the National Directorate for protection and safety.

In addition, the decisions below provide guidelines of protection and rescue for the regional and local level.

* The decision on the appointment of the Mayor, Deputy Mayor and members of the Headquarters of protection and rescue the Croatian (NN 53/12);
* The decision on dismissal of a deputy mayor and a part of the Headquarters of protection and rescue the Croatian (NN 99/12);
* The decision on the appointment of Deputy Chief and part of the Headquarters of protection and rescue the Croatian (NN 99/12);
* The decision on the appointment of members of the Headquarters of protection and rescue the Croatian (NN 67/14);
* The decision on the appointment of a member of the Headquarters of protection and rescue the Croatian (NN 143/14);
* The decision on dismissal of members of the Headquarters of protection and rescue the Croatian (NN 143/14).

## Legal regulations on the involvement of volunteers and specialised NGOs

There are several regulations concerning the organisation, attendance, recruitment and the use of units, services and bodies for managing and organising civil protection in Croatia (Swedish Civil Contingencies Agency 2009). In general, the Protection and Rescue Act regulates the involvement of volunteers and NGOs, regarding the rights and obligations of volunteers in the area of protection and rescue and agreements on protection and rescue cooperation between the NPRD and the voluntary associations (Tomin and Barbera 2011).

The legislative framework for the deployment of complementary protection and rescue services is regulated by the following acts:

* Law on the Croatian Mountain Rescue Service (NN 79/06).

The Protection and Rescue Act also regulate the deployment of the Croatian Mountain Rescue Service operations.

* Law on the Croatian Red Cross (NN 71/10).

The European Volunteer Centre (2012) indicated that due to a research lack, the percentage of people declaring engagement in volunteering activities varies from 5 percent to more than 40 percent. Despite the inconsistences, a positive trend towards volunteering can be stated.

In 2007, the Parliament of the Republic of Croatia adopted the Law on Volunteering (NN 58/07), which facilitates the involvement of volunteers at the local and national level by providing “a definition of volunteering, principles and conditions for volunteering, the rights and obligations of volunteers and volunteer implementing organisations, the conditions for conclusion of volunteering contracts, the adoption of a Code of Ethics for volunteers, the issuing of a volunteering certificate, a national volunteer award as well as means for supervising the implementation of this law.”

Within the report of the European Volunteer Centre (2012), the following framework was identified:

* Volunteering legislation and a regulatory framework;
* Government policies on volunteering;
* Organisers of volunteering activities: organisations and networks at local, regional and national level; local/regional/national institutions;
* Volunteering centres and the Croatian network of volunteer centres;
* Volunteering opportunities and brokering mechanisms between (potential) volunteers and volunteering opportunities, including on-line placement databases;
* Volunteering promotion and raising public awareness of the value of volunteering;
* Funding to ensure volunteering programs sustainability;
* Academic and civil society organisations (CSO) research projects.

The Ministry of Social Policy and Youth is responsible for the implementation of the law. Its implementation will be ensured by monitoring the implementation of the law and collecting feedback from the implementing organisations about the consequences of its implementation. The ministry provides an annual budget of around EUR 128,500 for volunteering.

Furthermore, within the National Strategy for the Creation of an Enabling Environment for Civil Society Development 2006-2011 and its Operational Implementation Plan, basic guidelines for the volunteer development were defined to improve the existing legal, financial and institutional mechanisms, to support civil society development and to achieve the enabling environment for civil society development in Croatia.

Regarding the liability of first responders in an emergency, it was determined in Art. 1047 of the Civil Obligations Act (NN 35/05, 41/08 and 125/11), “if damage is a result of performing an act of public interest for which an approval has been obtained from the competent authority, only a compensation for damage exceeding the usual limits may be required (excessive damage). In that case, however, socially justifiable measures with the aim of preventing the occurrence of damage or reducing the damage may be requested.”

## Legal regulations for international engagements of first responders and crisis managers

As explained by the IPA CP Cooperation Programme II (2012), the status of personnel of bilateral partners is clarified in the bilateral agreements. “The Prime Minister gives the final word on behalf of the whole Government regarding the request for international assistance. He/she has the right to make the decision alone, but he is usually advised by the NPRD General Director and the national headquarters.” It is not considered for the personnel of other international relief actors. This also applies for issues concerning the liability for damage caused by relief personnel.

An international cooperation between the NPRD and equivalent authorities is built upon agreements on the bilateral, regional and international level (NPRD 2014a). International treaties on cooperation in the field of protection from disasters are signed with the following contracting parties.

* Republic of Hungary;
* Republic of Slovenia;
* Bosnia and Herzegovina;
* Slovak Republic;
* Republic of Macedonia;
* Republic of Albania;
* Republic of Montenegro;
* Republic of Poland;
* Republic of Austria;
* French Republic;
* Russian Federation.

Memorandums of Understandings have been signed with:

* European Union (Community Mechanism for Civil PROTECTION; FINANCIAL INSTRUMENT CIVIL PROTECTION);
* Memorandum of Understanding on the Institutional Framework Initiative for Preparedness and Prevention disaster for South Eastern Europe.

In detail, regional cooperation was decided in the frame of:

* DPPI (the Disaster Preparedness and Prevention Initiative);
* SEDM (the South-East Europe Defence Ministerial);
* CMEP SEE (Civil Military Emergency Preparedness South Eastern Europe).

Specific regulations exist in order to guide the engagement in mutual assistance across borders, which are listed below.

* Regulation on the amount of compensation to persons engaged in the protection and rescue outside the Croatian borders (NN 90/06);
* Regulation on the procedure of crossing the border when receiving or sending urgent assistance in protection and rescue (NN 52/06);
* Regulation on the definition of compensation for temporarily seized movable property, to implement measures for protection and rescue (NN 85/06);
* Regulations on the participation of members of operational and rescue forces in the activities of forces for immediate aid in disasters abroad (NN 73/06);
* Law on Participation of the Croatian Armed Forces, police, civil defence, civil servants and employees in peacekeeping operations and other activities abroad (NN 33/02, 92/02).

Furthermore, a SOP was prepared for the coordination between national authorities while sending/receiving international assistance in emergency situations, which determines the responsibilities of all participants, the communication and coordination lines in between them as well as the specific procedures for sending, receiving and “processing” transiting international assistance. The coordination structure in case international teams are also present in the operations is covered by these SOPs (IPA CP Cooperation Programme II 2012). Additionally, an extra SOP for the provision of cross-border assistance in extinguishing the fire of open space between Croatia and Bosnia & Herzegovina exist.

The Decree on crossing national border while sending/receiving international assistance in emergency situations (adopted in 2006) builds the basis for the deployment of forces abroad (IPA CP Cooperation Programme II 2012). As an example, it determines that

“Visas can be issued expeditiously, exceptionally even at border crossing points. Customs duties and related fees are waived for the relief items and for the equipment of international intervention teams, provided that all items are well documented. As entry is always facilitated by a representative of NPRD (or of its local office), the likelihood of any misconduct or violation of these rules are practically non - existent.”

There is no additional certification procedure for foreign disaster relief personnel. Medical personnel can provide basic healthcare, especially if they are part of a certified USAR team (IPA CP Cooperation Programme II 2012). The national headquarter is responsible for issues regarding the operations and logistics of assisting international teams. As further explained within the Analytical Study on Host Nation Support (2012), should an OSOCC eventually be established, it shall deal with the request via the liaison officer “assigned to it. To provide logistical services for national intervention teams, standard procedures are in place, whose application may be extended to international teams, too, if feasible.” “Although, there are no restrictions concerning the import of emergency equipment, the use of own radio frequencies is prohibited, because it may cause interferences with the frequencies of national authorities.” [[13]](#footnote-13) Croatia determines free frequencies for international disaster relief teams, which can be distributed in case of need. In the responsibility of a Host Nation, Croatia takes to care for the security and safety of relief personnel, their equipment and relief consignments. In a case of security constraints, security advice is provided by the representative of the police in the national headquarter (IPA CP Cooperation Programme II 2012).

In the past, Croatia rendered assistance to several disaster-affected nations upon request. These were in the case of forest fires in Montenegro in 2002, fires in Bosnia and Herzegovina, Macedonia and Greece in 2007, forest fires in Israel and Bosnia and Herzegovina in 2010, floods in Slovakia in 2006, floods in Hungary in 2010, floods in Albania in 2011 and severe weather conditions in Montenegro in 2012 (NPRD 2014a). The provision of assistance to Hungary, Bosnia and Herzegovina, Greece was organised by the NPRD as the Croatian contact point for the EU Mechanism (Austrian Red Cross 2014).

# Organisation

## Organisational chart

The Law on Protection and Rescue defines three levels of responsibilities for the area of Civil Protection. As illustrated in Figure 74, these are the level of the state, the counties and the municipalities or towns.

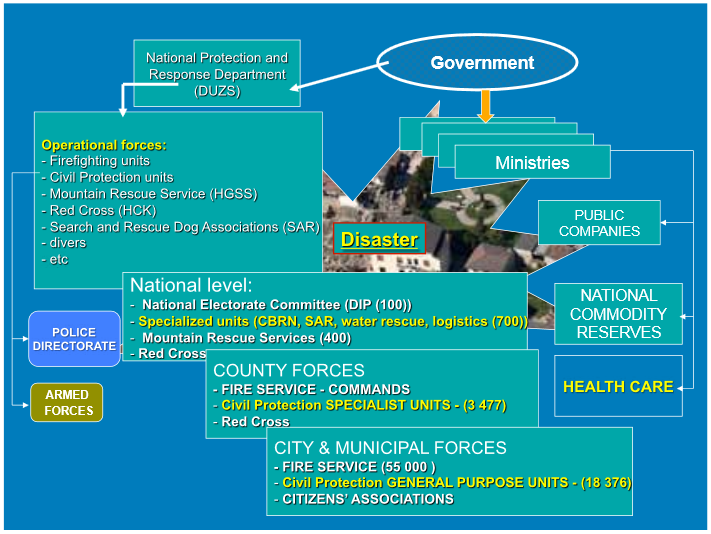


Figure 74: Organisation of emergency response in Croatia (WHO, 2012)

Authorities at the level of regional and local self-governments participate in the implementation of guidelines to ensure the functioning of the protection and rescue system in their area of competence. Furthermore, they are responsible for financing the protection and rescue system at the spatial level concerned. Additionally, regional and local authorities take part in drafting protection and rescue plans, adopt threat assessments and pass general acts for the management of operational forces (IPA CP Cooperation Programme II 2014).

Municipalities and towns are mandated to mobilise all available human and material resources in order to response to a disaster in their territory. Since the event overwhelms the capacities at the local level, assistance from county level by contacting its prefect can be requested. The county is responsible for the mobilisation of resources within its territory until its capacities are insufficient. After a request for help at the state level, the NPRD assumes the overall coordination and organises response with support from its subordinate departments.

As defined by the NPRD (2014b), in the event of disasters, major accidents and accidents with dangerous goods on Croatian territory the provision of direct technical assistance, additional capabilities and resources will be ensured by these units. Organised as the operative force for specialist tasks of protection and rescue, they will become mainly active in the field of CBRN, Search and Rescue (SAR), water rescue and logistics. Furthermore, they take part in planning, operational and technical issues related to the preparation and achievement of full operational readiness, equipment and training. In general, a state intervention unit of Civil Protection is composed of professionals and reservists. While professionals primarily fulfil duties related to the establishment of state intervention units of Civil Protection, drafting proposals of development plans, deploying staff and material/technical resources, planning the preparation and implementation of training programs and participate in the planning, organisation and implementation of these exercise, reservist monitors the development of new technologies, equipment and resources, methods and procedures in the protection and rescue and proposes their practical introduction into operational use (NPRD 2014b).

An important agency is the National Headquarter for search and rescue at sea is under the jurisdiction of the governmental coordination. It hosts 48 vessels of the Ministry of Maritime Affairs, Transport and Infrastructure, 38 vessels of the Ministry of the Interior and the air units of the Ministry of the Interior as well as of the Ministry of Defence. However, in a case of need a conveyance, environmental units and privately owned vessels or airplanes might be included.

Additionally, the National headquarter for search and rescue at sea has the competence to organize relief operations, i.e. search and rescue at the sea. Both key players are supported by police forces and build the core structure of the Croatian disaster management. As the main legal document, the Law on Protection and Rescue regulates the disaster management, which is supplemented by other laws related to the certain areas of critical infrastructure protection, the mountain rescue (Borić 2014), protection against natural disasters, the organising element of the fire brigades and fire protection. The national coordinating body for the all-hazards approach is also the NPRD while relevant services and institutions established by the government participate in preparation and implementation of protection and rescue activities and measures. The system is on the operational level subdivided into agencies that cope with specific threat types such as floods, wildfires, mountain rescue and protection, etc. In a case of multidimensional incidents, cross-sector coordination is ensured by the NPRD (Samardžija et al. 2014).

In the case of major accidents and disasters, the NPRD has the following duties (NPRD 2014a):

* Establishing mandatory guidelines for the management guidelines for risk management and rescue;
* Implementing the mobilisation of departments and units of the board and the operational and rescue forces;
* Coordinating, managing and directing operational command of forces in disasters and major accidents;
* Directing and coordinates the activity of operational forces in the field of protection and rescue;
* Performing tasks of informing and alerting the population and coordinate unique alert system in Croatia;
* Performing inspections of operational power;
* Cooperating with the competent authorities of other countries and international organisations in the protection and rescue, in order to provide and accept international assistance and joint action;
* Providing information to the public.

The NPRD stated (2014a) that the functioning of the National Protection and Rescue System in the 20 counties of Croatia is ensured by its subordinate offices at the county level. Each county has a County 112 centre and a Prevention, Planning and Inspection Department. Protection and Rescue Departments have been established in the major cities Zagreb, Rijeka, Osijek and Split, and National Intervention Units are in place in the county offices at the coast Zadar, Šibenik, Split and Dubrovnik (Radovic, Vitale, and Tchounwou 2012). The units at the county level are dedicated to provide their service in protection and rescue operations, if special skills are required, especially in the case of forest fires.

As illustrated in Figure 75, the NPRD, which is affiliated to the Ministry of Interior, comprises three divisions of imperative relevance for crisis management, namely the International Cooperation Department, the Director’s Cabinet and the Internal Revision Department (Swedish Civil Contingencies Agency 2009). The strategic forefront rests on five sectors, which are focusing on specific issues of civil protection and rescue. These sectors and their tasks will be discussed below.

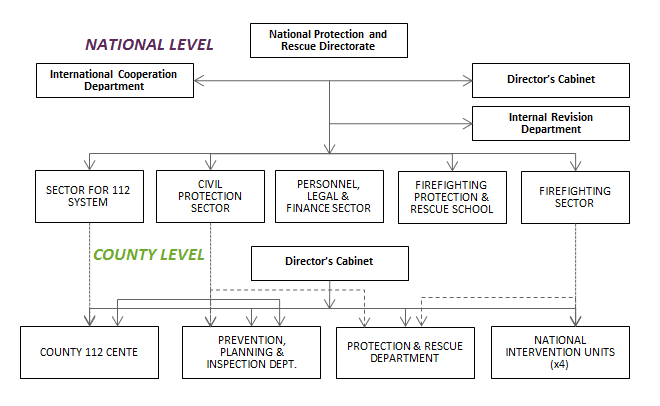


Figure 75: The Structure of the National Protection and Rescue Directorate

Available at: <http://seekms.dppi.info/national-protection-and-rescue-directorate/>; accessed: 17th September, 2014.

The Sector for the 112 System is composed of the national 112 Centre, the Prevention, Planning & Supervision Department and the Communications & IT-Department (Swedish Civil Contingencies Agency 2009). Furthermore, by acting as an operational communication service for data and information management as well as a notification service, it fulfils the duty of crisis communication and has to inform the public as well as authorities and rescue services.

The Civil Protection Sector includes two departments – the Operations & Analysis Department and the Prevention, Planning and Inspection Department. The last one directs rescue forces in the case of emergency by assuming mobilisation and coordination tasks. Furthermore, it implements prevention measures, e.g. risk assessment, preparing SOPs, etc. and takes tactical tasks by monitoring current disasters and conducts a need assessment (Swedish Civil Contingencies Agency 2009).

In the frame of the central administration, the Firefighting, Protection and Rescue School is dedicated to prepare plans and standards, monitor training programs and provide training exercises for professional firefighters and commanders of civil protection and rescue staff. Similar to the Civil Protection Sector, the Firefighting Sector is focusing on the protection against fire by performing an assessment of the situation as well of the needs of the field staff. This Sector acts as an overarching coordination body for the fight against fires, especially if they cross county borders. In cases, which require land and air forces, the Firefighting Section works on the harmonization between the Ministry of Defence and the Ministry of the Interior to receive support of the military and/or the police (Swedish Civil Contingencies Agency 2009). Together with the MoI its tasks concerns the preparation of strategies and programs for further implementation of fire protection. Another close cooperation exists with the MoD and the Croatian Fire Fighting Association concerning the pushing forward of intervention plan for a large-scale forest fires. The National Intervention Units remain under the control of the Firefighting Sector. Additionally, a Personnel, Legal & Finance Sector has been established, which is dedicated to handle the legal, personnel and financial issues, relating to the legislation, maintain a real property database, prepare contracts, maintain books on business relations and medical insurance policies for employees (Swedish Civil Contingencies Agency 2009). There, the Legal Department, the Personnel Department, the Finance Department as well as the Department for Investments and Procurement have been integrated.

Apart from the dominating role of the independent NPRD, the protection and rescue system relies on professional firefighters, volunteers and private specialist contractors. Pursuant to the Constitution of the Republic of Croatia, professional firefighters are assigned to local authorities, which provides the financial basis for their performance (Croatian Firefighting Association 2011). If necessary, they can be deployed by the central firefighting sector.

As an important voluntary NGO, the Croatian Red Cross (CRC) is integrated in the National Protection and Rescue System at the national and local level. With its 20 branches at the level of counties and 110 branches at towns and municipalities, the CRC provides first aid, disaster preparedness and response, tracing service, health programs, water life service and humanitarian activities (NPRD and UNDP 2012).

The Croatian Rescue and Mountain Service (CRMS) is built upon twenty territorial units. As a specialized rescue service, the main areas of action are the help on rugged terrain during difficult weather conditions and in rescue scenarios, which require special equipment or know-how. A strong cooperation was established between CRMS and the police, the Croatian Armed Forces and firefighters. “Croatian Mountain Rescue Service gathers the fittest Croatian rock climbers, speleologists, mountaineers and skiers, specially trained in administering of first aid and in all mountain rescue techniques, including helicopter-aided rescuing and search parties in rugged terrain involving the use of rescue dogs. Croatian Mountain Rescue Service has around 500 members, including 25 medical doctors and 12 instructors.” [[14]](#footnote-14) In addition, the CMRS is providing first aid to people injured in rugged areas and fosters education and prevention, especially of mountaineering related accidents. Additionally, specialised diving associations, rescue dog services and amateur radio organisations play a role in the protection and rescue system (Samardžija et al. 2014).

Private specialist contractors, which are designated to perform protection and rescue activities in their everyday business as well as citizens’ associations whose activities are complementary to protection and rescue measures are engaged on the basis of public-private partnership (European Commission 2014). Especially, in the area of disaster risk reduction, ICT companies contribute to the warning and disaster response system (SEERDRMP, UNDP Croatia, and UNDP 2011).

At the level of ministries and agencies, the Central State Administration Authorities contribute to the efficient functioning of protection and rescue systems by planning and allocating resources and equipment for protection and rescue needs, collaborate in threat assessment with the NPRD (in the area of their competence) and ensure an appropriate competence level of staff to undertake measures and activities necessary for efficiently carrying out the services of a central state government authority in disaster and major accident situations (European Commission 2014). The Meteorological and Hydrological Service of Croatia (NHMS) is a national centre of excellence based on high standards. Their tasks include the support to economic development, environmental protection, measures for the preservation of life and material goods from natural hazards and related mitigation measures as well as monitoring and observation of hydro-meteorological phenomena (SEERDRMAP, UNDP Croatia, and UNDP 2011).

Charged with the maintenance and deployment of the network of seismographs and other instruments and collecting, analysing and archiving of seismological data, the Croatian Seismology Survey, which is part of the Geophysical Institute of the Faculty of Science and Mathematics of the University of Zagreb. Also research on earthquake related issues are one of their key competences.

Croatian Waters is responsible for the monitoring of water flow and water level prediction, while the River Section Director for Flood Protection is the competent authority to declare the beginning and the end of the both regular and emergency protection. Strong cooperation exists between Croatian Waters and DHMZ in order to provide “high-quality controlled national and international hydrological data in near real time in agreed format” (SEERDRMP, UNDP Croatia, and UNDP 2011).

The Croatian Mine Action Centre (CROMAC) is responsible for research on and improvement of mine action techniques, technology and methods, testing of machines, mine detection dogs and handlers, testing and field evaluation of modern technologies, education and expert assistance to the countries in the region and beyond.[[15]](#footnote-15)

As regulated by appropriate laws (e.g. Act on Defence), assistance from police forces and the Croatian Armed Forces can be requested in the case of major disasters.

The General Police Directorate is managed by the General Police Director and have to fulfil tasks in the area of:[[16]](#footnote-16)

* Monitoring and analysing the state of security and developments leading to the emergence;
* Harmonisation, guidance and supervision over the work of Police Directorates and Police Administrations;
* Immediate support in particular more complex operations of Police Directorates and Police Administrations;
* Contribution to the implementation of the international agreements on police cooperation and other international acts under the competence of the General Police Directorate;
* Application of standards for the equipment and technical means;
* Providing the basis for the police readiness to act in the state of emergency.

## Organisational cooperation

In order to establish cooperation in the field of protection and rescue issues, the NPRD is the focal point for the appropriate counterparts in neighbouring countries as well as for international organisations (Swedish Civil Contingencies Agency 2009). As explained at the Vademecum-Website (2014), a Decree on how to receive and send urgent assistance in case of a demanding emergency situation has been issued in accordance with the Protection and Rescue Law. The Decree defines the responsibilities of the NPRD, the Border Police and Customs when international assistance is crossing the Croatian state border and the coordination between these authorities. An appropriate SOP has been developed to define the obligations of the NPRD, the Border Police, Customs, the Ministry of Defence, the Ministry of Health and Social Welfare and the Ministry of Foreign Affairs and European Integration. Furthermore, it determines the communication and coordination procedures between the involved actors. Additionally, cooperation has been established with the NATO Euro-Atlantic Disaster Response Coordination Centre (NATO-EADRCC) and the European Union Community Mechanism for Civil Protection. Coordination at the international level is provided by the Government or the NPRD as a central state administration body for this kind of events. Corresponding to that, the NPRD has been incorporated as a focal point for the International Search and Rescue Advisory Group, both for political issues and for operations (INSARAG 2014).

Regarding the probability of the simultaneous occurrence of events, the County department for Civil Protection (2014) has indicated, that the Croatian system of Protection and Rescue is based on the principle of subsidiarity, meaning that the response to possible crisis at first must be provided by the local government level, then at regional level and finally at the state level – if local capacities are not sufficient. The top priority for the action of these forces are, in any case, the saving of human lives and, secondly, the mitigation of damage to material and cultural goods. As priorities, certainly, those threats will be ranked first, which are well-known that they can turn into major accidents and disasters (Expert Interview 2014).

# Procedures

## Standing Operating Procedures (SOPs) and Guidelines

The County department for Civil Protection (2014) pointed out that, in Croatia, SOPs exist, but are mainly related to firefighters, CMRS and NPRD, who have developed their SOPs and are continuing on their improvement. There it was expressively stated that the NPRD is in charge for drafting plans, preparing appropriate by-laws (Swedish Civil Contingencies Agency 2009) and the launching of standard operating procedures. Due to the fact that the main actors also provide training, according to the established plans, they permanently receive feedback from a user view. It should be noted that the existence of plans at the national, as well as at the levels of local and regional governments, are mainly addressing specific threats. This will become apparent by the title of the plans, e.g. Croatia have Fire protection plans (“Firefighting and management”, Flood protection plans, etc. As mentioned by Jeraj (2014), for the case of cross-border activities, Croatia and Slovenia are developing a common Standard operating procedures for fighting open space fires.

The Website of the NPRD provides a comprehensive overview on Standard Operating Procedures, concerning Civil Protection (National Protection and Rescue Directorate 2014):

* SOP for treatment of a single operative - Communication Centre 112 at the fire in the open air;
* SOP Croatia – Bosnia & Herzegovina on the provision of cross-border assistance in extinguishing the fire of open space;
* SOP to use weather forecast Meteorological and Hydrological Service;
* SOP for the operation of a single operative - Communication Centre (centre 112) - Delivered location data of users for calls from mobile telecommunications networks – AMENDMENTS;
* SOP for the operation of the single operations and communications centre 112 in case of an accident in the tunnel;
* SOP for the operation of a single operative - Communication Centre 112 in the case of search and rescue operations on the mainland or an island;
* SOP for the operation of a single operative - Communication Centre 112 in case of an accident on the highway;
* SOP for treatment of a single operative - Communication Centre 112 in case of an accident on the state, county, local and unclassified roads;
* SOP in organizing transportation for the purpose of organ transplants;
* SOP for border crossing;
* SOP for the operation of operational and rescue forces in flood;
* SOP on call emergency numbers by which operators of public communications networks Centres 112 and 112 National Centre must allow free calls.

The rulebook, developed by National Directorate for Protection and Rescue, lays down rules and means for citizen alert system, as well as procedures for citizen alert system related to the origin of a crisis, procedures during the crisis and ending the crisis.

The protocol on standard operative procedures of the Common operative and communication centre (112 Centre) defines the way of common actions of operational troops and the Common operative and communication centre (hereinafter 112 Centre), procedures for transmission of all available information related to crisis, accidents, big accidents or catastrophes after receiving information through 112 service, procedures of information analysis and forwarding to the operational troops and other participants in protection and rescue operations, as well as obligations of participants in protection and rescue operations towards 112 Centre, aiming at organised and coordinated implementation of protection and rescue operations. It includes also actions of Common operative and communication centre 112 and other participants in protection and rescue operations during firefighting actions on open space.

The Standard Operative Procedure for action of operative troops for protection and rescue during floods launched by the National Directorate for Protection and Rescue is delivered to harmonise cooperation and action of operative troops for protection and rescue, as well as rescue operations during floods, where actions should follow Plan for protection and rescue on the territory of the Republic of Croatia and other basic legislation, particularly Law on water and National plan for flood defence. By applying SOP, a maximal integration of operative capacities and their efficient implementation within the whole protection and rescue system on the territory of the Republic of Croatia will be assured.

## Operations planning

In general, disaster preparedness plans and contingency plans are in place at all levels (local, regional and national) and are reviewed, supplemented and tested in practice regularly. County and local governments are responsible for the development of draft protection and rescue plans (e.g. disaster preparedness plans) for their respective administrative units. Preparedness/contingency plans are publicly available and are posted at the county and local self-government web sites (SEERDRMP, UNDP Croatia, and UNDP 2011).

## Logistics support in crises

The “Rulebook on mobilisation and action of the Operational Protection and Rescue Forces (NN 40/08, 44/08), adopted by the NPRD, regulates the deployment and management of operational forces, determining their management, command and coordination during disasters (Samardžija et al. 2014). While protection and rescue headquarters are responsible for the management and command of operational forces at the local and regional level, the NPRD is the competent authority at the national level. Furthermore, the organisation in terms of recruitment, personnel and material of those units is determined by regulations of the “Rulebook on organization, recruitment and equipping of the civil protection units and alerting units” (NN 111/07), passed by the director of the NPRD. As stated by Samardžija et al. (2014) stated, according to the Law on Protection and Rescue, logistics and equipping relies on NPRD warehouses, resources of local and regional self-government units and civil organizations whose members are recruited, depending on the type of the engaged units.

## Crisis communication to general public; Alert system; Public Information and Warnings

As pointed out by the United Nations Office for Disaster Risk Reduction (2009), the system of alerting authorities is based entirely on the emergency number 112. Through this system, reports and signals regarding all levels of emergencies are collected and alerts are issued.

The early warning system is a part of the NPRD and is interconnected with warning centres, monitoring stations and alarm units. Furthermore, warning centres, which act as a communication hub in times of a disaster, operates sound alarm systems. Alarm units forward information about threats to the Warning Centre and alarm the population (Republic of Croatia 2010). As stated by the County department for Civil Protection (2014), there are many ways to warn the citizens. From the simplest such as triggering an alert by sirens to the more complex as it is the use of public media. The sirens are located in the 112 Centres of the NPRD but have also been established at the local fire departments. Not all sirens of firefighters have been linked to the system 112 of NPRD. These current circumstances have been considered as a sub-optimal, because the forwarding of information, e.g. about the type of danger or the specific threat, might be later than the impact of an event affect the population. It was stated by SEERDRMP et al. (2011), the Standard Operating Procedures of the Integrated Operational-Communicational Centre (Centre 112) defines the way of common actions of operative units and Common operative and communication centre, procedures for transmission of all available information related to crisis, accidents, big accidents or catastrophes after receiving information through 112 service, procedures of information analysis and forwarding to the operational units and other participants in protection and rescue operations.

Furthermore, as obligations of participants in protection and rescue operations towards 112 Centre, which is aiming at the organised and coordinated implementation of protection and rescue operations have been defined. It includes also actions of Common operative and communication centre 112 and other participants in protection and rescue operations during fire-fighting action on open space. The communication of threats is mainly located at the Sector for 112 System, which operates at the national and county centres as a 24 hour a day – 7 days a week service. The sector comprises the national 112 Centre, the Prevention, Planning and Supervision Department and the Communications and IT Department. The tasks of the 112 Sector include the collection and processing of information as well as the notification about events.

A central data storage for the collection of real events has been established. Equipped with a public alert system, it is responsible for informing the general public as well as the legal persons, the national administration and the emergency and rescue services. Furthermore, it is dedicated to coordinate the transfer of commands and decision between various levels (Tomin and Barbera 2011). If an approaching danger has been detected by a hydro-meteorological forecasting system, warnings will be forwarded to the flood defence centres at the counties, Croatian Waters and the Main Centre of Flood Defence. The last one is responsible for notifying the NPRD and updating information about current events permanently (ICPDR 2012). According to the Government of the Republic of Croatia (2005), databases for individual risk types are maintained by risk-specific expert groups, i.e. Technical Support Centre (nuclear risk), the National Institute for Toxicology and the Information Centre of the National Oil Company, etc., which are forwarding relevant data to warning centres, the government, Civil Defence Headquarters.

# Capabilities

## Human resources

At the state level, there are a total of 540 people ordinarily employed in Civil Protection duties, consisting of public servants employed with the NPRD and staff of the 112 system. In the case of an emergency, 900 private specialist contractors and 50 professional firemen will support employees of the NPRD. The county level comprises 180 people in the Civil Protection Sector in times of peace, which are mainly employees of the 112 system. In towns and counties of Croatia, 2,300 professional firefighters and about 60,000 volunteers can be mobilised for Civil Protection in cases of disasters. This number includes personnel from the National Protection and Rescue Directorate (plus the sector for the 112 system), private specialist-contractors, professional firefighters and volunteers; in total, about 63,970 individuals could be involved for civil protection in emergency periods. This amount corresponds to approximately 2.15 percent of the national active population (United Nations Office for Disaster Risk Reduction 2009).

According to the Croatian Firefighting Association (2011), in Croatia there are 1,835 volunteer firefighting units in municipalities and towns, 56 volunteer industrial firefighting units, 61 professional public city firefighting units, 34 professional industrial firefighting units, four intervention units of the Ministry of Interior and in addition, special firefighting forces and forces of the anti-fire escadrille of the Ministry of Defence. As presented by the Croatian Parliament (2006), in 2005, the Croatian Armed Forces had a numerical size of 18,479 active military personnel.

The state intervention units consist of teams dedicated to providing measures in the area of CBRN, Search and Rescue (SAR), water rescue and logistics (NPRD 2014b). The state intervention units for the Civil Protection have total personnel of 612, which are composed of 227 members from the Departments in Zagreb, 186 from the Department Osijek and in equal shares of 197 members from Department of Rijeka and the Unit in Split. In all departments and the Unit of Split, the major part of members takes the logistic team.

As already stated by Samardžija et al. (2014), the Croatian civil protection system strongly relies on volunteers which play an important role in all aspects. As illustrated in Table 21, without the contribution of police forces, about 90,402 personnel may participate actively in the case of an emergency. The result of this evaluation is more recent compared to the one provided by (United Nations Office for Disaster Risk Reduction 2009) at the beginning of this section. Moreover, it includes about 18,500 members of the Croatian army, therefore these numbers cannot be compared directly.

Table 21: Overview on operational forces for protection and rescue activities in Croatia

|  |  |  |
| --- | --- | --- |
| Stakeholder Type | Name | Number of Personnel |
| Voluntary Organisation | Croatian Mountain Search and Rescue Service | ~ 750 |
|  | Croatian Red Cross | 8,852 |
|  | Volunteer fire-fighting units of towns and municipalities | 56,415 |
|  | Volunteer fire-fighters of industrial fire-fighting units | 1,621 |
|  | Professional fire-fighters in volunteer fire-fighting units | 236 |
|  | Professional industrial fire-fighters | 778 |
|  | Professional fire-fighters of public fire-fighting units | 2,371 |
| Agency/Department | Croatian Armed Forces | 18,479 |
|  | Police | unknown |
| Private business | Private specialist contractors | 900 |
| Total | | 90,402 |

In Croatia, civil protection forces will be trained on the basis of a regular system of training and courses (European Commission 2014). For the needs of civil protection, the training through a regular system of education is being performed by enlisting adequate programs in the curriculum of elementary schools, and a three-year specialist training for the vocation of fireman. Even so, most of the training is maintained through specialist courses, which are being performed in combination, through centralisation or decentralisation, at the state level or at the local self-government level and administration.

## Materiel (non-financial) resources

In Croatia, protection and rescue plans at each administrative level determine the appropriate material and technical means used in the event of a crisis (Expert Interview 2014). Furthermore, it has been stated that there are plans in Croatia to use some military resources when they are needed. Protection and Rescue Plans define what kind of legal and natural persons in the sphere of local and regional governments will be entrusted with tasks to conduct certain activities in the case of disasters and major accidents. The County Department for Civil Protection (2014) has named as examples the PP NOS firefighting planes in the case of large forest fires and the helicopters for emergency medical flights and rescuing victims from inaccessible areas.

As stated by the Croatian Firefighting Association (2011), the participation of special firefighting forces and forces of the anti-fire escadrille of the Ministry of Defence involves, if necessary, the provision of the following special assets:

* 6 Canadair CL 415;
* 6 Air-tractors 802 A Fire Boss;
* Helicopters of the type Mi-8 and 117-Š of the Croatian army.

In the period of 2003-2009, 210 fire-vehicles and a firefighting robot, produced by DOK-ING Company, were acquired. There are the following types of vehicles available at the firefighting units in Croatia.[[17]](#footnote-17)

* Attack vehicles;
* Water tankers;
* Chemical vehicles;
* Technical vehicles;
* Turntable ladders;
* Forest vehicles;
* Command vehicles;
* Other vehicles (used for some special purpose like transport of equipment or personal, industrial fire-fighting, aero ports, tunnels etc.).

Within the National Report for the WDRC, the Croatia Government stated (2005), that at the national level, the Directorate for Strategic Commodity Stockpiles and the Ministry for Economic Affairs, Labour and Entrepreneurship are responsible for stockpiles of food, energy and equipment.

As stated by the Croatian Red Cross, the required “equipment is procured and stockpiled in the central warehouse in Zagreb and in regional warehouses.”[[18]](#footnote-18)

The Law on Strategic Commodity Stockpiles, 2002 (NN 87/02) determines the holding of emergency stockpiles, its financing and their facilitation. As defined by the law, in the event of major natural disasters and technical/technological and ecological disasters, agricultural products, foods and non-food products, oil products, materials and raw materials for production should be available at stock.

In Croatia, companies operate storage facilities for commodity reserves. HANDA, an entity under Public Law, is responsible to form the state compulsory oil stocks at the level of a 90‐day-consumption by 31st July 2012, in line with EU directives.

According to the report of the Petroleum Development Consultant Limited & Energetski Institut Hrvoje Požar (2011), in Croatia the following emergency stock was held in 2010 (see Table 22).

Table 22: Overview on current emergency stock holding in Croatia

|  |  |  |
| --- | --- | --- |
| Type | Stock (tonnes) held by HANDA, July 2010 | Stock (tonnes) held by industry, July 2010 |
| Crude oil | 293,043 | 48,084 |
| Motor gasoil | 30,000 | 10,720 |
| Diesel | 25,000 | 23,920 |
| Jet fuel | 0 | 900 |
| Gas oil | 0 | 4,752 |
| Fuel oil | 35,000 | 7,725 |

## Training

The Firefighting and Protection and Rescue School of the NPRD offers response-oriented specialist courses and trains professional firemen and protection and rescue forces (command headquarters, unit commanders, shelter managers and civil protection commissioners). Training and workshops for county and local government (for mayors, senior management and other relevant staff), as well as for volunteer associations (diving associations, mountain rescue services, volunteer fire departments) are organised by the NPRD. In 2011 on average 50-360 hours of training sessions were completed at national level and 50-80 hours at local level (SEERDRMP, UNDP Croatia, and UNDP 2011). It was mentioned within the IPA Needs Assessment that, “Croatia extensively uses simulation exercises to validate preparedness activities and contingency planning”.

Radovic et al. (2012) emphasised that employers have an obligation to train employees in rescue and evacuation measures for the case of emergency. There are special regulations concerning the prevention, firefighting and evacuation of employees.

In the frame of an international disaster mitigation process, Croatia offers an international training program for medical response to major incidents to educators.

NMHS is conducting internal capacity building and technical training activities related to DRR, such as evaluation of the suitability of communications, workstations, and software to support DRR; forecasting of hazards including up-to-date training of new forecasting technologies and products; training on DRR processes and similar. In addition, NMHS participates in exercises and drills, e.g. “concerning nuclear accidents, floods, major traffic accidents etc. to ensure disaster preparedness. Pamphlets, brochures, posters and recorded materials are the methods and instructional materials used by the HMS to provide education and public outreach programmes” [[19]](#footnote-19). The UNISDR (2009) indicated, that the Firefighting Protection and Rescue School of the National Protection and Rescue Directorate maintain many cooperation in the field of Civil Protection, i.e. the United Kingdom’s Bournemouth University (courses on international disaster management) and with the Italian training centre FORMEZ (affiliated to the Presidency of the Council of Ministers). Moreover, in the frame of the Stability Pact – DPPI Croatia has stipulated a Disaster Management Training Program, which is embedded in the cooperative network for countries of South Eastern Europe. Based on a common organisation of the Croatian National Protection and Rescue Directorate and the Slovenian Administration for Civil Protection and Disaster Relief special Risk Reduction Training Courses have been offered to professionals.[[20]](#footnote-20) Addressing the response to specific hazard types, training sessions for specific scenarios, i.e. cave accidents, have been established, involving 150 cave rescuers from Croatia and Slovenia.

Croatia is frequently joining international and European training exercises. The country “is enhancing its national civil emergency and disaster management capabilities in cooperation with NATO and through participation in activities, organised by the Euro-Atlantic Disaster Response Coordination Centre (EADRCC). Croatia also participates in the work of the Senior Civil Emergency Planning Committee.” [[21]](#footnote-21) In March 2010, the NPRD representatives participated at the international rescue dog exercise in Slovenia. Republic of “Croatia has also participated in the NATO Crisis Management Exercise CMX09.” [[22]](#footnote-22) Furthermore, the NPRD participate in the EU Civil Protection Mechanism training programme and in the UN CADRI and DPPI DRR oriented workshops and training (SEERDRMP, UNDP Croatia, and UNDP 2011). Training sessions and other types of educational events are regularly completed in the course of bilateral and international cooperation. In cooperation with the Civil-Military Emergency Preparedness, specific disaster management related training and workshops have been attended. Some important training exercises are provided in Table 23.

Table 23: Overview on some international training sessions completed by Croatia in the last years[[23]](#footnote-23)

|  |  |  |
| --- | --- | --- |
| Year | Program title | Scope |
| 2014, September | Cave Rescue Training | DPPI SEE DMTP Event[[24]](#footnote-24)  Joint training of Croatia and Slovenia |
| 2014, May | National Road Traffic Collison Extrication Challenge, Skopje, Macedonia | DPPI SEE DMTP Event  Coordination excercise |
| 2013, September | Disaster Risk Reduction Training Course | DPPI SEE Event - Disaster Management Training Program of Croatia and Slovenia |
| 2013, September | Cave Rescue Training | DPPI SEE DMTP Event  Joint training of Croatia and Slovenia |
| 2013, June | [EU TARANIS 2013](http://www.taranis2013.eu/en) | Floods |
| 2013, May | TWIST | Tsunami |
| 2012, May | IPA CRO-FLOODS 2012 Field Exercise | Flooding Exercise of the civil protection intervention teams from seven Western Balkan countries and several EU countries |
| 2010 | EU TEREX | Earthquake |
| 2010, March | NATO Crisis Management Exercise - CMX 09**[[25]](#footnote-25)** | Simulation exercise on political-military decision-making for crisis management |
| 2009, September | EU Danubius 2009 | Earthquake |
| 2009 | EU-SweNorEx 2009 | Earthquake simulation exercise including cross-border management |
| 2008, September | EU HUROMEX 2008 | Flooding in two countries in parallel and related accidents |

## Procurement

### Procurement regulation

Exercised by the Department of Procurement, the NPRD is the superordinate body for the planning and quantifying of the state’s emergency reserves required for the protection and rescue. Regarding the focus of procurement, the County Department for Civil Protection (2014) has argued, on the basis of its experience, that one should go with the other – that means, equipment and training needs to be procured together.

In Croatia, the goods and services have to be procured under the Law on Public Procurement, for which a compliance with EU Directives can be assumed. At the moment, in Croatia a joint/cross-border procurement is under consideration regarding equipment and training (Expert Interview 2014). It has been indicated that there have already been several meetings with an attempt to jointly apply several projects for EU funding. From the standpoint of the County Department for Civil Protection (2014), an additional legislation with regard to cross-border procurement is vitally necessary. Based on previous experiences with cross-border missions, i.e. in Bosnia & Hercegovina, some lacks, concerning differences in country-specific SOPs and deficiencies at operational fieldwork, became apparent. The unequal standard of neighbouring countries is a hindrance for an interoperable approach and thus pointed out grievances, which should be eliminated as quickly as possible. Hence, any regulation that would facilitate the procurement of goods would be more then welcome.

### Procurement procedures

In the Republic of Croatia, the NPRD is responsible for procurement at the strategic level of the state, while at the operational level, where operational forces, i.e. Firefighters, CMRS, etc., are the main actors, each department is free to dispose their procurement on their own.

*Article 1 of the REGULATION ON PUBLIC PROCUREMENT FOR DEFENCE AND SECURITY PURPOSES (NN 89/12) defined the rules, conditions and public procurement for the following issues:*

* *The supply of military equipment, including any parts, components and/or subassemblies thereof,*
* *Supply of sensitive equipment, including any parts, components and/or subassemblies thereof,*
* *Works, supplies and services directly related to the equipment referred to in points 1 and 2 of this article for any and all elements of its life cycle,*
* *Works and services for specifically military purposes,*
* *Sensitive works and sensitive services.*

In the course of the procurement regulation, compliance with the Directive 2009/81/EC was given as well as with the Directives 2004/17/EC and 2004/18/EC in the fields of defence and security. The regulation refers to the Public Procurement Act and the Act on State Commission for Supervision of Public Procurement Procedure (NN 21/10).

## Niche capabilities

The best performing parts of the Croatia’s civil security system are well-trained and well-equipped forces, particularly in the fire-fighting (both regular and voluntary forces) and flood protection. Croatia has highly professional and operational protection and rescue capacities at the central government level (healthcare, inspections, capacities of relevant public administration bodies and crisis management related services). Their skills and knowledge are one of the crucial assets for the system. Furthermore, specialised knowledge in the area of cave rescuing was established based on the well-established speleological science in Croatia.[[26]](#footnote-26) In 2013, an international conference on the issue of mountain rescuing, where more than 500 of the world’s best rescuers participated, was hosted in Croatia by CRMS. The speleological expedition „Lukina jama 2010“ was the occasion for the meeting of Croatian speleologists and colleagues from Bulgaria, England, Slovakia, Czech Republic and Spain.[[27]](#footnote-27)

Close cooperation has been established between state administration bodies, NGOs, public and private companies (Samardžija, Tišma, and Skazlić 2014). The remarkable number of volunteers (about 71,000) can be identified as an important aspect of the protection and rescue system.

Furthermore, Croatia is considered as a Centre of Excellence for the training of firefighters and coordination of response to forest fires in the countries of South Eastern Europe.

As mentioned at ReliefWeb (2009):

Croatia is widely considered as a regional leader in the South Eastern Europe, particularly, in the area of wildfires risk management and monitoring and forecasting of meteorological hazards. The Government develops multi-year plans for hazard risk management, including the Protection and Rescue Plan developed by the National Protection and Rescue Directorate (NPRD), which describe the planned activities aimed at strengthening disaster risk management functions.

Croatia is regarded as driver for research on risks and disasters in the South-East region. Due to Croatia’s contribution to the harmonisation of the firefighting brigades in the countries of the region through standardisation of equipment and procedures, thus promoting the regional cooperation and collaboration in disaster risk reduction.

In the view of the County department for Civil Protection (2014), best practices and transferable elements can be found in Fire-fighting, especially airborne task forces (firefighting planes-Canadair) and rescue from hard to reach areas (CMRS).

As emphasised by Samardžija et al. (2014), based on Croatia’s experience with the consequences of war, “Croatia has developed humanitarian demining capacities (physical demining, equipment, know-how, and rehabilitation of mine victims) which represent its comparative advantages in Europe and worldwide.”

# Resources

## Legislative acts

*Act on Radiological and Nuclear Safety,* 2010a *(NN 28/10)*, Zagreb: Narodne Novine (OG).

*Information Security Act, 2007 (NN 79/07)*, Zagreb: Narodne Novine (OG). Available at: https://www.soa.hr/UserFiles/File/information\_security.pdf.

Inter-Parliamentary Union. 2013. “STATE OF EMERGENCY.” *Hrvatski Sabor (Croatian Parliament)*. http://www.ipu.org/parline-e/reports/CtrlParlementaire/2077\_F.htm#defnat.

*Law on Critical Infrastructures, 2013 (NN 56/13)*, Zagreb: Narodne Novine (OG).

*Law on Participation of the Croatian Armed Forces, police, civil defense, civil servants and employees in peacekeeping operations and other activities abroad, 2002 (NN 33/02 , 92/02)*, Zagreb: *Narodne Novine (OG).*

*Law on Protection from Natural Disasters, 97 (NN 73/97)*

*Law on Volunteering, 2007 (NN 58/07). Zagreb: Narodne novine (OG).*

*National Plan of Action concerning Environmental Impact 2002 (NN 46/02). Zagreb: Narodne novine (OG). Available at: http://narodne-novine.nn.hr/clanci/sluzbeni/2002\_46\_02\_708.html.*

*National Strategy for the Prevention and Suppression of Terrorism, 2008 (NN 139/08)*, Zagreb: Narodne Novine (OG).

*Protection and Rescue Act, 2004 (NN 174/04, 79/07, 38/09, 127/10)*, Zagreb: Narodne Novine (OG). Available at: http://www.duzs.hr/page.aspx?PageID=604.

*REGULATION ON PUBLIC PROCUREMENT FOR DEFENCE AND SECURITY PURPOSES, 2012 (NN 89/12)*, Zagreb: Narodne Novine (OG). Available at: http://www.javnanabava.hr/default.aspx?id=3992.

*Rulebook on procedures of alerting the population, 2006 (NN 47/06, 110/11). Zagreb: Narodne Novine (OG). Available at: http://narodne-novine.nn.hr/clanci/sluzbeni/2011\_09\_110\_2165.html.*

*Rulebook on mobilization and action of the Operational Protection and Rescue Forces, 2008 (NN 40/08, 44/08). Zagreb: Narodne novine (OG). Available at:* [*http://narodnenovine.nn.hr/clanci/sluzbeni/2008\_04\_40\_1355.html*](http://narodnenovine.nn.hr/clanci/sluzbeni/2008_04_40_1355.html)*.*

*Rulebook on organization, recruitment and equipping of the civil protection units and alerting units, 2007 (NN 111/07). Zagreb: Narodne novine (OG). Available at: http://narodnenovine.nn.hr/clanci/sluzbeni/2007\_10\_111\_3258.html; accessed.*

*Strategic Commodity Stockpiles Act, 2002 (NN 87/02)*

*STRATEGY FOR THE REPUBLIC OF CROATIA’S NATIONAL SECURITY, 2002. Security and Intelligence Agency. Available at:* [*https://www.soa.hr/UserFiles/File/Strategy\_Republic\_of\_Croatia.pdf*](https://www.soa.hr/UserFiles/File/Strategy_Republic_of_Croatia.pdf)*.*

*The Constitution of the Republic of Croatia, 2010b (NN 85/10)*, Zagreb: Narodne Novine (OG). Available at: https://www.soa.hr/UserFiles/File/CONSTITUTION\_CROATIA.pdf.

*THE DECISION ON THE PROMULGATION OF THE LAW ON POLICE, 2000 (NN 129/00, NN 41/08)*, Zagreb: Narodne Novine (OG). Available at: http://pak.hr/cke/propisi, zakoni/en/LawonPolice/Law.pdf.

## Other normative acts

Croatian Parliament. 2006. “THE CROATIAN ARMED FORCES LONG-TERM DEVELOPMENT PLAN 2006–2015.” http://arhiva.morh.hr/katalog/documents/CAF LTDP 2006-2015.pdf.

MINISTRY OF DEFENCE. 2005. “Strategic Defence Review.” Zagreb, Croatia: REPUBLIC OF CROATIA. http://arhiva.morh.hr/katalog/documents/spo\_eng.pdf.

NPRD, and UNDP. 2012. “Memorandum of Understanding between National Rescue and Protection Directorate and UNDP on Implementation of the Project ‘Response to 2012 Natural Disaster in Croatia.’” Zagreb, Croatia. http://www.hr.undp.org/content/dam/croatia/docs/legal/justice\_security/UNDP\_HR\_DRR\_response\_to\_disaster\_2012\_prodoc.pdf.

*REGULATION ON PUBLIC PROCUREMENT FOR DEFENCE AND SECURITY PURPOSES (NN 89/12)*. 2012. Zagreb: Narodne Novine (OG). http://www.javnanabava.hr/default.aspx?id=3992.

THE CROATIAN PARLIAMENT. 2002. “STRATEGY FOR THE REPUBLIC OF CROATIA’S NATIONAL SECURITY (NN 79/07).” Security and Intelligence Agency. https://www.soa.hr/UserFiles/File/Strategy\_Republic\_of\_Croatia.pdf.

## Official documents (white papers, strategies, etc.)

Austrian Red Cross. 2014. “Statement of Arabela Vahtarić, NPRD, Croatia.” *EU Taranis 2013*. Accessed October 12. http://www.taranis2013.eu/en/partner-1/portraits/interview-arabela-vahtaric-nprd-kroatien/.

Borić, Ante. 2014. “Zakon O Zaštiti I Spašavanju, No. 174/04., 79/07., 38/09., 127/10.” http://www.zakon.hr/z/163/Zakon-o-zaštiti-i-spašavanju.

Council of Europe. 2011. “Profiles on Counter-Terrorism Capacity: Croatia.” COMMITTEE OF EXPERTS ON TERRORISM (CODEXTER). http://www.coe.int/t/dlapil/codexter/country\_profiles.asp.

Croatian Fire-fighting Association. 2011. “THE FIREFIGHTING SERVICE in CROATIA.” http://www.hvz.hr/en/.

Croatian Parliament. 2006. “THE CROATIAN ARMED FORCES LONG-TERM DEVELOPMENT PLAN 2006–2015.” http://arhiva.morh.hr/katalog/documents/CAF LTDP 2006-2015.pdf.

DUSZ. 2014. “Republic of Croatia.” http://www.duzs.hr/page.aspx?PageID=247.

EIPA, and ECR. 2014. “Member States without Legislative at the Sub-National Level - Croatia.” *Division of Powers*. Accessed September 21. https://portal.cor.europa.eu/divisionpowers/countries/MembersNLP/Croatia/Policy-Areas-Non-Obligatory/Pages/Civil-Protection.aspx.

European Commission. 2014. “Croatia - Disaster Management Structure.” *Vademecum*. http://ec.europa.eu/echo/files/civil\_protection/vademecum/hr/2-hr-1.html.

EUROPEAN COMMISSION FOR DEMOCRACY THROUGH LAW. 1995. “EMERGENCY POWERS.” Strasbourg, France. http://www.venice.coe.int/webforms/documents/default.aspx?pdffile=CDL-STD(1995)012-e.

European Volunteer Centre. 2012. “Volunteering Infrastructure in Europe.” European Commission, “Europe for Citizens” programme. http://www.alliance-network.eu/wp-content/uploads/2014/05/CEV\_Volunteering-infrastructure.pdf.

Expert Interview. 2014. “Head of Croatia Mountain Rescue Service (Civil Protection Organisation, Croatia).” Split-Dalmatia, Croatia.

Government of the Republic of Croatia. 2005. “Information about Disaster Reduction Based on the Yokohama Strategy and Action Plan.” Kobe, Japan: National Reports for the World Conference on Disaster Reduction (WCDR). http://www.unisdr.org/2005/mdgs-drr/national-reports.htm.

Higher Institute for Emergency planning. 2003. “Comparative Study of the Regulations Concerning Major Risk Management in the 25 Member States of the Council of Europe’s EUR-OPA Major Hazards Agreement [AP/CAT(2003)39].” Strasbourg, France: EUR-OPA Major Hazards Agreement. http://www.coe.int/t/dg4/majorhazards/ressources/Apcat2003/APCAT-2003-39bil.pdf.

Holcinger, Nataša. 2011. “Climate Change in Croatia - Grooming Disasters.” Skopje, Macedonia. http://www.preventionweb.net/files/22169\_20efdrr12oct2011wg1croatianastasaho.pdf.

ICPDR. 2012. “Preliminary Flood Risk Assessment in the Danube River Basin.” Vienna, Austria: ICPDR – International Commission for the Protection of the Danube River. http://www.icpdr.org/main/sites/default/files/PFRA REPORT DRBD v March 2012.pdf.

INSARAG. 2014. “INSARAG Members.” *INSARAG Focal Points*. Accessed September 11. http://vosocc.unocha.org/USAR\_Directory/FocalPointsByCountry.asp.

IPA CP Cooperation Programme II. 2012. “ANALYTICAL STUDY ON HOST NATION SUPPORT.” http://ipacivilprotection.eu/hns\_study.pdf.

IPA Civil Protection. 2014. “Country Profile - Croatia.” *Vademecum - Civil Protection*. http://ipacivilprotection.eu/croatia.html.

Jeraj, Milena Dobnik. 2014. “Bilateral and Regional Cooperation in Disaster Management – Good Practices/experiences of Slovenia.” In *22nd OSCE Economic and Environmental Forum “Responding to Environmental Challenges with a View to Promoting Cooperation and Security in the OSCE Area.”* Vol. Cooperatio. Vienna. http://www.osce.org/eea/110805?download=true.

Mahečić, Zvonimir. 2010. “Security Policies in the Western Balkans: Croatia.” In *Security Policies in the Western Balkans*, edited by Miroslav Hadžić, Milorad Timotić, and Predrag Petrović, 61–79. Belgrade: Belgrade Centre for Security Policy. http://www.bezbednost.org/upload/document/croatia.pdf.

MINISTRY OF DEFENCE. 2005. “Strategic Defence Review.” Zagreb, Croatia: REPUBLIC OF CROATIA. http://arhiva.morh.hr/katalog/documents/spo\_eng.pdf.

National Protection and Rescue Directorate. 2014. “Regulations and Other Acts.” *DUZS*. http://www.duzs.hr/page.aspx?PageID=603.

NPRD. 2014a. “National Protection and Rescue Directorate of the Republic of Croatia (NPRD).” Directorate-General Civil Security Is Part of the Federal Public Service Home Affairs (Brussels). http://5043.fedimbo.belgium.be/sites/5043.fedimbo.belgium.be/files/explorer/EUModfx/EUmodex\_Croatia.pdf.

———. 2014b. “State Intervention Units of Civil Protection.” http://www.duzs.hr/page.aspx?PageID=587.

NPRD, and UNDP. 2012. “Memorandum of Understanding between National Rescue and Protection Directorate and UNDP on Implementation of the Project ‘Response to 2012 Natural Disaster in Croatia.’” Zagreb, Croatia. http://www.hr.undp.org/content/dam/croatia/docs/legal/justice\_security/UNDP\_HR\_DRR\_response\_to\_disaster\_2012\_prodoc.pdf.

Perešin, Anita. 2013. “CROATIAN COUNTER-TERRORISM STRATEGY: CHALLENGES, PREVENTION AND RESPONSE SYSTEM.” 160. Vol. 160. Research Paper. Athens, Greece: RESEARCH INSTITUTE FOR EUROPEAN AND AMERICAN STUDIES (RIEAS).

Petroleum Development Consultant Limited, and Energetski Institut Hrvoje Požar. 2011. “Emergency Oil Stocks in the Energy Community Level.” http://www.energy-community.org/portal/page/portal/ENC\_HOME/DOCS/2516177/Oil\_Emergency\_cover+report.pdf.

Pollner, John, Jolanta Kryspin-Watson, and Sonja Nieuwejaar. 2010. “Disaster Risk Management and Climate Change Adaptation in Europe and Central Asia.” Washington, DC, USA: Global Facility for disaster reduction and recovery. https://www.gfdrr.org/sites/gfdrr.org/files/publication/GFDRR\_DRM\_and\_CCA\_ECA.pdf.

PreventionWeb. 2014. “Croatia - Disaster Statistics.” *COUNTRIES & REGIONS*. http://www.preventionweb.net/english/countries/europe/hrv/.

Rademaekers, Koen, Lisa Eichler, Oscar Widerberg, Sergej Anagnosti, Roger Few, Nicola Rebora, Roberto Rudari, and Rodolfo Console. 2013. “Good Practices in Disaster Prevention. Final Report.” Rotterdam: European Commission, DG ECHO. http://climate-adapt.eea.europa.eu/c/document\_library/get\_file?uuid=eb81d8dd-0836-4bb8-9bd6-624d05ed4233&groupId=18  .

Radovic, Vesela, Ksenija Vitale, and Paul B. Tchounwou. 2012. “Health Facilities Safety in Natural Disasters: Experiences and Challenges from South East Europe.” *International Journal of Environmental Research and Public Health* 9: 1677–1686.

*REGULATION ON PUBLIC PROCUREMENT FOR DEFENCE AND SECURITY PURPOSES (NN 89/12)*. 2012. Zagreb: Narodne Novine (OG). http://www.javnanabava.hr/default.aspx?id=3992.

Republic of Croatia. 2010. “CROATIAN REPORT ON NUCLEAR SAFETY.” Zagreb, Croatia. http://cms.dzrns.hr/\_download/repository/CNS\_national\_report\_2007\_final.pdf.

———. 2012. “CROATIAN REPORT ON NUCLEAR SAFETY.” Zagreb, Croatia. http://cms.dzrns.hr/images/50000884/CROATIAN\_EXTRAORDINARY\_MEETING\_CNS\_REPORT.pdf.

———. 2013. “Aarhus Convention Implementation Report.” http://www.mzoip.hr/doc/Aarhus/III\_Implementation\_Report\_2014.pdf.

Samardžija, Višnja, Sandro Knezovic, Sanja Tisma, and Ivana Skazlic. 2014. “Country Study: Croatia.” ANVIL - Analysis of Civil Security Systems in Europe (FP7 ANVIL project). http://anvil-project.net/wp-content/uploads/2014/03/Croatia\_v1.1.pdf.

Samardžija, Višnja, Sanja Tišma, and Ivana Skazlić. 2014. “Challenges of Effective Civil Security System in Croatia in the Context of the EU Membership.” *Collegium Antropologicum*. http://www.collantropol.hr/antropo/article/view/657.

SEEDRMAP. 2007. “Strengthening the Hydrometeorological Services in South Eastern Europe.” South Eastern Europe Disaster Risk Mitigation and Adaptation Programme (SEEDRMAP). http://www.unisdr.org/files/7650\_StrengtheningHydrometeorologicalSEE1.pdf.

KMS. 2014. “CROATIA.” *LEGAL & INSTITUTIONAL FRAMEWORK*. http://seekms.dppi.info/countries/general-info-croatia/.

SEEDRMAP, UNDP Croatia, and UNDP. 2011. “IPA Beneficiary Country Needs Assessment – Croatia.” Global Risk Information Platform, Project Report.

South Eastern Europe Disaster Risk Mitigation and Adaptation Initiative (SEEDRMAI). 2008. “Disaster Risk Mitigation and Adaptation Initiative. Risk Assessment for South Eastern Europe. Desk Study Review.” Geneva, Switzerland: World Bank (WB) & United Nations Office for Disaster Risk Reduction - Regional Office for Europe (UNISDR EUR). http://www.unisdr.org/files/1741\_SouthEasternEuropeDRMitigation.pdf.

Stipanicev, Darko, and Domingos Viegas. 2009. “The Accident of Ko Rnati (Croatia) 2007.” In *Recent Forest Fire Related Accidents in Europe*, edited by Domingos Xavier Viegas, 26–53. Luxembourg: Office for Official Publ ications of the European Communities. http://forest.jrc.ec.europa.eu/media/cms\_page\_media/82/recent-forest-fire-related-accidents-in-europe.pdf.

Swedish Civil Contingencies Agency. 2009. “International CEP Handbook 2009. Civil Emergency Planning in the NATO/EAPC Countries.” Stockholm, Sweden: Swedish Civil Contingencies Agency (MSB). https://www.msb.se/RibData/Filer/pdf/24677.pdf.

THE CROATIAN PARLIAMENT. 2002. “STRATEGY FOR THE REPUBLIC OF CROATIA’S NATIONAL SECURITY (NN 79/07).” Security and Intelligence Agency. https://www.soa.hr/UserFiles/File/Strategy\_Republic\_of\_Croatia.pdf.

Tomin, Cvetka Krajic, and Antonio Barbera. 2011. “Euro-Mediterranean Civil Protection Operational Manual.” http://s3.amazonaws.com/zanran\_storage/www.euromedcp.eu/ContentPages/2547931736.pdf.

United Nations Development Programme. 2009. “Human Development Report Croatia 2008. A Climate for Change Climate Change and Its Impacts on Society and Economy in Croatia.” Edited by Seth Landau, Susan Legro, and Sandra Vlašić. Zagreb, Hrvatska. http://hdr.undp.org/sites/default/files/nhdr\_2008\_en\_croatia.pdf.

United Nations Office for Disaster Risk Reduction. 2009. “The Structure, Role and Mandate of Civil Protection in Disaster Risk Reduction for South Eastern Europe.” South Eastern Europe Disaster Risk Mitigation and Adaptation Programme (SEEDRMAP). http://www.unisdr.org/files/9346\_Europe.pdf.

United Nations, Department of Economic and Social Affairs, Population Division. 2014. “World Urbanization Prospects: The 2014 Revision, Highlights (ST/ESA/SER.A/352).” New York, U.S.: United Nations. http://esa.un.org/unpd/wup/Highlights/WUP2014-Highlights.pdf.

UNU-EHS, and Alliance Development Works. 2014. “WorldRiskReport 2014.” http://www.worldriskreport.com/uploads/media/WorldRiskReport\_2014\_online-II\_01.pdf.

World Bank. 2009. “Croatia: Disaster Risk Mitigation and Adaptation Project.” *ReliefWeb*. http://reliefweb.int/report/croatia/croatia-disaster-risk-mitigation-and-adaptation-project.

World Bank. 2013. “World Development Report 2014: Risk and Opportunity—Managing Risk for Development.” Washington, DC.: World Bank. https://openknowledge.worldbank.org/handle/10986/16092.

WHO. 2012. “Assessment of Health-System Crisis Preparedness - Croatia.” Copenhagen, Denmark: The Regional Office for Europe of the World Health Organization. http://www.euro.who.int/\_\_data/assets/pdf\_file/0010/167932/Croatia\_report.pdf.

World Meteorological Organization. 2012. “Strengthening Multi-Hazard Early Warning Systems and Risk Assessment in the Western Balkans and Turkey: Assessment of Capacities, Gaps and Needs.” Geneva, Switzerland. http://library.wmo.int/pmb\_ged/SEEPhaseI-FinalReport.pdf.

## Online resources (e.g. websites of key CM organizations)

Austrian Red Cross. 2014. “Statement of Arabela Vahtarić, NPRD, Croatia.” *EU Taranis 2013*. Accessed October 12. http://www.taranis2013.eu/en/partner-1/portraits/interview-arabela-vahtaric-nprd-kroatien/.

Croatian Fire-fighting Association. 2011. “THE FIREFIGHTING SERVICE in CROATIA.” http://www.hvz.hr/en/.

DUSZ. 2014. “Republic of Croatia.” <http://www.duzs.hr/page.aspx?PageID=247>, accessed: 22nd September 2014.

EIPA, and ECR. 2014. “Member States without Legislative at the Sub-National Level - Croatia.” *Division of Powers*. Accessed September 21. https://portal.cor.europa.eu/divisionpowers/countries/MembersNLP/Croatia/Policy-Areas-Non-Obligatory/Pages/Civil-Protection.aspx.

European Commission. 2014. “Croatia - Disaster Management Structure.” *Vademecum*. http://ec.europa.eu/echo/files/civil\_protection/vademecum/hr/2-hr-1.html.

INSARAG. 2014. “INSARAG Members.” *INSARAG Focal Points*. Accessed September 11. http://vosocc.unocha.org/USAR\_Directory/FocalPointsByCountry.asp.

IPA CP Cooperation Programme II. 2014. “Country Profile - Croatia.” *Vademecum - Civil Protection*. http://ipacivilprotection.eu/croatia.html.

NPRD. 2014a. “National Protection and Rescue Directorate of the Republic of Croatia (NPRD).” Directorate-General Civil Security Is Part of the Federal Public Service Home Affairs (Brussels). http://5043.fedimbo.belgium.be/sites/5043.fedimbo.belgium.be/files/explorer/EUModfx/EUmodex\_Croatia.pdf.

NPRD. 2014b. “State Intervention Units of Civil Protection.” http://www.duzs.hr/page.aspx?PageID=587.

PreventionWeb. 2014. “Croatia - Disaster Statistics.” *COUNTRIES & REGIONS*. http://www.preventionweb.net/english/countries/europe/hrv/.

KMS. 2014. “CROATIA.” *LEGAL & INSTITUTIONAL FRAMEWORK*. http://seekms.dppi.info/countries/general-info-croatia/.

National Protection and Rescue Directorate. 2014. “Regulations and Other Acts.” *DUZS*. http://www.duzs.hr/page.aspx?PageID=603.

## Publications

European Volunteer Centre. 2012. “Volunteering Infrastructure in Europe.” European Commission, “Europe for Citizens” programme. http://www.alliance-network.eu/wp-content/uploads/2014/05/CEV\_Volunteering-infrastructure.pdf.

Higher Institute for Emergency planning. 2003. “Comparative Study of the Regulations Concerning Major Risk Management in the 25 Member States of the Council of Europe’s EUR-OPA Major Hazards Agreement [AP/CAT(2003)39].” Strasbourg, France: EUR-OPA Major Hazards Agreement. http://www.coe.int/t/dg4/majorhazards/ressources/Apcat2003/APCAT-2003-39bil.pdf.

Holcinger, Nataša. 2011. “Climate Change in Croatia - Grooming Disasters.” Skopje, Macedonia. http://www.preventionweb.net/files/22169\_20efdrr12oct2011wg1croatianastasaho.pdf.

IPA CP Cooperation Programme II. 2012. “ANALYTICAL STUDY ON HOST NATION SUPPORT.” http://ipacivilprotection.eu/hns\_study.pdf.

Jeraj, Milena Dobnik. 2014. “Bilateral and Regional Cooperation in Disaster Management – Good Practices/experiences of Slovenia.” In *22nd OSCE Economic and Environmental Forum “Responding to Environmental Challenges with a View to Promoting Cooperation and Security in the OSCE Area.”* Vol. Cooperatio. Vienna. http://www.osce.org/eea/110805?download=true.

Mahečić, Zvonimir. 2010. “Security Policies in the Western Balkans: Croatia.” In *Security Policies in the Western Balkans*, edited by Miroslav Hadžić, Milorad Timotić, and Predrag Petrović, 61–79.

Belgrade: Belgrade Centre for Security Policy. http://www.bezbednost.org/upload/document/croatia.pdf.

Perešin, Anita. 2013. “CROATIAN COUNTER-TERRORISM STRATEGY: CHALLENGES, PREVENTION AND RESPONSE SYSTEM.” 160. Vol. 160. Research Paper. Athens, Greece: RESEARCH INSTITUTE FOR EUROPEAN AND AMERICAN STUDIES (RIEAS).

Petroleum Development Consultant Limited, and Energetski Institut Hrvoje Požar. 2011. “Emergency Oil Stocks in the Energy Community Level.” http://www.energy-community.org/portal/page/portal/ENC\_HOME/DOCS/2516177/Oil\_Emergency\_cover+report.pdf.

Pollner, John, Jolanta Kryspin-Watson, and Sonja Nieuwejaar. 2010. “Disaster Risk Management and Climate Change Adaptation in Europe and Central Asia.” Washington, DC, USA: Global Facility for disaster reduction and recovery. https://www.gfdrr.org/sites/gfdrr.org/files/publication/GFDRR\_DRM\_and\_CCA\_ECA.pdf.

Rademaekers, Koen, Lisa Eichler, Oscar Widerberg, Sergej Anagnosti, Roger Few, Nicola Rebora, Roberto Rudari, and Rodolfo Console. 2013. “Good Practices in Disaster Prevention. Final Report.” Rotterdam: European Commission, DG ECHO. http://climate-adapt.eea.europa.eu/c/document\_library/get\_file?uuid=eb81d8dd-0836-4bb8-9bd6-624d05ed4233&groupId=18  .

Radovic, Vesela, Ksenija Vitale, and Paul B. Tchounwou. 2012. “Health Facilities Safety in Natural Disasters: Experiences and Challenges from South East Europe.” *International Journal of Environmental Research and Public Health* 9: 1677–1686.

Samardžija, Višnja, Sandro Knezovic, Sanja Tisma, and Ivana Skazlic. 2014. “Country Study: Croatia.” ANVIL - Analysis of Civil Security Systems in Europe (FP7 ANVIL project). http://anvil-project.net/wp-content/uploads/2014/03/Croatia\_v1.1.pdf.

Samardžija, Višnja, Sanja Tišma, and Ivana Skazlić. 2014. “Challenges of Effective Civil Security System in Croatia in the Context of the EU Membership.” *Collegium Antropologicum*. http://www.collantropol.hr/antropo/article/view/657.

SEEDRMAP. 2007. “Strengthening the Hydrometeorological Services in South Eastern Europe.” South Eastern Europe Disaster Risk Mitigation and Adaptation Programme (SEEDRMAP). http://www.unisdr.org/files/7650\_StrengtheningHydrometeorologicalSEE1.pdf.

SEEDRMAP, UNDP Croatia, and UNDP. 2011. “IPA Beneficiary Country Needs Assessment – Croatia.” Global Risk Information Platform, Project Report.

South Eastern Europe Disaster Risk Mitigation and Adaptation Initiative (SEEDRMAI). 2008. “Disaster Risk Mitigation and Adaptation Initiative. Risk Assessment for South Eastern Europe. Desk Study Review.” Geneva, Switzerland: World Bank (WB) & United Nations Office for Disaster Risk Reduction - Regional Office for Europe (UNISDR EUR). http://www.unisdr.org/files/1741\_SouthEasternEuropeDRMitigation.pdf.

Stipanicev, Darko, and Domingos Viegas. 2009. “The Accident of Ko Rnati (Croatia) 2007.” In *Recent Forest Fire Related Accidents in Europe*, edited by Domingos Xavier Viegas, 26–53. Luxembourg: Office for Official Publ ications of the European Communities. http://forest.jrc.ec.europa.eu/media/cms\_page\_media/82/recent-forest-fire-related-accidents-in-europe.pdf.

Swedish Civil Contingencies Agency. 2009. “International CEP Handbook 2009. Civil Emergency Planning in the NATO/EAPC Countries.” Stockholm, Sweden: Swedish Civil Contingencies Agency (MSB). https://www.msb.se/RibData/Filer/pdf/24677.pdf.

Tomin, Cvetka Krajic, and Antonio Barbera. 2011. “Euro-Mediterranean Civil Protection Operational Manual.” http://s3.amazonaws.com/zanran\_storage/www.euromedcp.eu/ContentPages/2547931736.pdf.

United Nations Development Programme. 2009. “Human Development Report - Croatia 2008. A Climate for Change Climate Change and Its Impacts on Society and Economy in Croatia.” Edited by Seth Landau, Susan Legro, and Sandra Vlašić. Zagreb, Hrvatska. http://hdr.undp.org/sites/default/files/nhdr\_2008\_en\_croatia.pdf.

United Nations Office for Disaster Risk Reduction. 2009. “The Structure, Role and Mandate of Civil Protection in Disaster Risk Reduction for South Eastern Europe.” South Eastern Europe Disaster Risk Mitigation and Adaptation Programme (SEEDRMAP). http://www.unisdr.org/files/9346\_Europe.pdf.

United Nations, Department of Economic and Social Affairs, Population Division. 2014. “World Urbanization Prospects: The 2014 Revision, Highlights (ST/ESA/SER.A/352).” New York, U.S.: United Nations. http://esa.un.org/unpd/wup/Highlights/WUP2014-Highlights.pdf.

UNU-EHS, and Alliance Development Works. 2014. “WorldRiskReport 2014.” http://www.worldriskreport.com/uploads/media/WorldRiskReport\_2014\_online-II\_01.pdf.

World Bank. 2009. “Croatia: Disaster Risk Mitigation and Adaptation Project.” *ReliefWeb*. http://reliefweb.int/report/croatia/croatia-disaster-risk-mitigation-and-adaptation-project.

World Bank. 2013. “World Development Report 2014: Risk and Opportunity—Managing Risk for Development.” Washington, DC.: World Bank. https://openknowledge.worldbank.org/handle/10986/16092.

WHO. 2012. “Assessment of Health-System Crisis Preparedness - Croatia.” Copenhagen, Denmark: The Regional Office for Europe of the World Health Organization. http://www.euro.who.int/\_\_data/assets/pdf\_file/0010/167932/Croatia\_report.pdf.

World Meteorological Organization. 2012. “Strengthening Multi-Hazard Early Warning Systems and Risk Assessment in the Western Balkans and Turkey: Assessment of Capacities, Gaps and Needs.” Geneva, Switzerland. http://library.wmo.int/pmb\_ged/SEEPhaseI-FinalReport.pdf.

## Expert interviews

Expert Interview. “County Department for Civil Protection.” Split-Dalmatia, Croatia, November 2014.

1. http://extranet.cor.europa.eu/divisionpowers/countries/MembersNLP/Croatia/Pages/default.aspx [↑](#footnote-ref-1)
2. In the frame of the desk study the focus is on the region of South East Europe (SEE) and provides risk profiles of the following countries: Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Macedonia, Moldova, Montenegro, Romania, Serbia, Slovenia and Turkey. [↑](#footnote-ref-2)
3. The World Risk Report (UNU-EHS and Alliance Development Works 2014) expresses the risk “of becoming a victim of a disaster as a result of vulnerability and natural hazards such as earthquakes, storms, floods, droughts and sea level rise” on the basis of multiplying the exposure towards natural hazards, susceptibility depending on infrastructure, etc., coping capacities depending on the governmental structure, etc. and adaptive capacities related to future natural hazards and the impacts of climate change. [↑](#footnote-ref-3)
4. Information is available at: <http://www.hck.hr/en/category/-disaster-preparedness-and-response-63>; accessed: 21st October 2014. [↑](#footnote-ref-4)
5. The article is available at: <http://www.coca-colahellenic.com/sustainability/community/emergencyrelief>; accessed: 12th October, 2014. [↑](#footnote-ref-5)
6. http://www.gripweb.org/gripweb/sites/default/files/Croatia%20Needs%20Assessment%20-%202011-10-26.doc [↑](#footnote-ref-6)
7. Press release is available at: <http://europa.eu/rapid/press-release_IP-14-948_en.htm>; accessed: 21st September 2014. [↑](#footnote-ref-7)
8. Publications of CEA are available at: <http://www.azo.hr/Default.aspx?sec=683>; accessed: 12th September, 2014. [↑](#footnote-ref-8)
9. Information is available at: <http://www.oscebih.org/News.aspx?newsid=2034&lang=EN>, accessed: November 8th, 2014. [↑](#footnote-ref-9)
10. Information is available at: <http://www.duzs.hr/page.aspx?PageID=566>; accessed: 21st September 2014. [↑](#footnote-ref-10)
11. Information is available at: <http://www.uvns.hr/default.aspx?id=167>; accessed: 17th September, 2014. [↑](#footnote-ref-11)
12. Press release is available at: <http://www.morh.hr/en/news/press-releases/6610-national-security-strategy-draft-presented.html>; accessed: October 21, 2014. [↑](#footnote-ref-12)
13. http://www.gpo.gov/fdsys/pkg/CFR-2001-title7-vol1/xml/CFR-2001-title7-vol1.xml [↑](#footnote-ref-13)
14. http://www.hgsszd.hr/en/o-nama/ [↑](#footnote-ref-14)
15. Information is available at: <http://www.ctro.hr/eng/menu/about-us/article/about-us-12.html>; accessed: 11th October, 2014. [↑](#footnote-ref-15)
16. Information is available at: <http://www.mup.hr/1259.aspx>; accessed: 17th September, 2014. [↑](#footnote-ref-16)
17. Information is available at: <http://www.firegeezer.com/2011/05/20/the-croatian-fire-service-then-and-now-part-2/>; accessed: 19th October, 2014. [↑](#footnote-ref-17)
18. Information is available at: <http://www.hck.hr/en/category/-disaster-preparedness-and-response-63>; accessed: 21st October 2014. [↑](#footnote-ref-18)
19. http://www.gripweb.org/gripweb/sites/default/files/Croatia%20Needs%20Assessment%20-%202011-10-26.doc [↑](#footnote-ref-19)
20. Information is available at: <http://seekms.dppi.info/cb_opp/disaster-risk-reduction-training-course/>; accessed: 21st October, 2014. [↑](#footnote-ref-20)
21. http://www.nato.int/cps/en/natohq/topics\_31803.htm [↑](#footnote-ref-21)
22. http://www.nato.int/cps/en/natohq/topics\_31803.htm [↑](#footnote-ref-22)
23. Information about EU-related training session is available at: <http://ec.europa.eu/echo/files/civil_protection/civil/prote/exercises.htm#2009> (last updated: 10th July, 2014); accessed: 10th August, 2014. [↑](#footnote-ref-23)
24. An overview on training sessions in the frame of the Disaster Preparedness and Prevention Initiative for South Eastern Europe (DPPI SEE) is available at: <http://www.dppi.info/programmes-activities/dmtp>; accessed: 29th September, 2014. [↑](#footnote-ref-24)
25. Information is available at: <http://www.morh.hr/en/news/press-releases/6350-nato-crisis-management-exercise-cmx-09.html>; accessed: 10th August, 2014. [↑](#footnote-ref-25)
26. Information is available at: <http://www.croatiaweek.com/tag/croatian-mountain-rescue-service/>; accessed: 22nd September, 2014. [↑](#footnote-ref-26)
27. Information is available at: <http://161.53.55.11/speleo/lukina2010/index-en.html>; accessed: 21st September, 2014. [↑](#footnote-ref-27)