



Country Study: Croatia

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Executive Summary¹

This country study of Croatia presents the findings of desk and empirical research carried out with the aim to provide comprehensive analyses of the civil security system, comparable to the other country studies within the ANVIL project. The study shows that several types of crisis events are most frequent in Croatia – floods, fires and droughts. Croatia also faces seismic risks of earthquakes and a threat from leftover mines. The crisis management system in Croatia inherited traditions of the former Yugoslav federation. The system functioned well during the war of independence (1991-1995) while the principles of civil security have been changed during its further development. The dominant crisis management approach became civilian-based rather than military-based. The legal and institutional structures have been reformed in 2005. The coordination of the civil security system has been established at national level and takes an all hazards approach in the case of disaster and major accidents. The authority and responsibility for crisis preparedness and response in Croatia rests on the local level but the delegation of responsibilities takes a combination of bottom up (primarily) and top-down approach, depending on the difficulty of a crisis situation. However, the existing system is facing legal inconsistencies and needs to be reorganised. The structures and actors are well functioning, but coordination is not adequately defined and results in problems in implementation. The system of crisis management is not well enough recognised. These problems are intended to be solved with the new legal act which is now under preparation. The best performing parts of Croatia's civil security system are well-trained and well-equipped forces, particularly in firefighting (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 CM related services). Their skills and knowledge are one of the crucial assets of the system. Close cooperation has been established between state administration bodies, NGOs, and public and private companies taking part in crisis management. Croatia has developed humanitarian demining capacities after the recent war (physical demining, equipment, know-how, and rehabilitation of mine victims) which represent its comparative advantages in Europe and worldwide. The system was positively influenced by the EU during the accession process. On the other hand, the system is facing financial problems and there is a need for rationalisation and avoiding double capacities. The overall spending for civil security is decreasing

¹ This case study represents one of 22 country studies compiled in the context of the Analysis of Civil Security Systems in Europe (ANVIL) Project. The ANVIL Project aims to map the variety and similarities in Europe's regional civil security structures, practices and cultures and investigate how variety affects the safety of Europe's citizens. The results give policy stakeholders a clear overview over civil security architectures and EU-added value to the debate concerning "not one security fits all". Read more at www.anvil-project.net.

due to the financial crisis. There is lack of unified analyses and transparency of total costs of the system and its services especially at regional and local level, monitoring, approving and reporting on financing of certain activities is not clearly defined, cost-benefit analyses are not undertaken. A new model of financing is envisaged to enhance transparency whereby, amongst others, the financing of local levels will be based on clear risk assessment for a certain area.

Key Findings

1. Rich experience in demining

Croatia has developed strong humanitarian demining capacities after the recent war (1991-1995) because of the remaining mine risk which was constantly present, threatening the civil security of the country. Croatia is one of 59 countries in the world facing a mine problem. In the period of 1991-2012 there were 1,964 affected people by mines in Croatia, out of which 508 people died (mostly individual cases). By the signing of the Ottawa Convention (1997), Croatia was recognised as one of the leading world humanitarian demining countries. The Croatian Mine Action Centre (CROMAC) was established by the government in 1998 as the national agency responsible for the coordination of mine action activities in Croatia. The Government Office for Demining functions until recently (established in 2012) as a political coordinating body that monitors CROMAC activities, contributes to mine awareness raising and further development of the mine action system etc. CROMAC develops proposals for the National Mine Action Plan and Humanitarian Demining Plans, coordinates mine risk education activities and activities related to mine victims assistance, gathers and processes mine suspected areas data and marks mine suspected areas, performs demine control inspection etc.

Croatia's demining capacities include physical demining, equipment, know-how, and assistance to rehabilitation of mine victims. Based on its experience Croatia is ranked among the best performing and the most admired world demining systems with good technical resources and highly educated human potentials. Mine clearance capacities in Croatia include complete equipment of 32 demining companies that are authorised by MoI to perform demining activities (Mungos, DOK-ING, others), equipped with over 600 deminers and the same number of metal detectors, a number of demining machines and mine detection dogs. Special attention is given to education and informing citizens about the risk of mines, where the Croatian Red Cross plays an important role in raising awareness and informing endangered populations. The experience gained in demining represents a comparative advantage of the country in Europe and worldwide. The demining activities are mostly financed through the state budget and Croatian public enterprises (on average some 60 percent of total costs) while the remaining sources are obtained from foreign and domestic donors, EU funds and World Bank loans. There are three EU funded IPA projects that are supporting the demining operations in Croatia. In order to fulfil the plan to remove the mine threat by 2019, it is necessary to obtain more funds (EU structural funds and other donor funds).

2. Strong involvement of volunteers

The Croatian civil security system strongly relies on volunteers which play an important role in all aspects of the civil security system. The volunteers have increased awareness and knowledge about civil security issues and significantly lowered the numbers of casualties. There is a wide range of non-profit organisations whose activities are based on volunteers, such as Croatian Red Cross (CRC), Croatian Mountain Rescue Service (CMRS), Croatian Fire fighting Association (CFA), Croatian cynological, speleological and other associations, scuba diving and amateur radio organizations, search and rescue dog organizations, organizations for psychological assistance and organizations of Croatian Homeland War veterans that are important in tackling mine-related threats. The Croatian Mountain Rescue Service (CMRS), being an association of citizens, includes 750 volunteers and 10 employed people. The members of CMRS are mostly highly educated people and professionals, having education and training licences, including international ones. CMRS is among the most distinguished non-profit organizations dealing with crisis management preparedness, undertaking rescue and protection activities in the mountains, inaccessible areas and other emergency situations. Its volunteers are available 24 hours daily and they join protection and rescue activities upon request, covering 80 percent of the Croatian territory. They also take part in the activities of National Protection and Rescue Directorate (NPRD), Ministry of Interior and other relevant ministries. The professional and voluntary firefighting has been integrated in Croatia in 2000 and all of them are members of firefighting communities. Volunteer firefighting societies, being part of the firefighting communities play an indispensable role in raising crisis management preparedness through educating and training activities, organizing exercises and acquiring appropriate logistics and equipment for extinguishing fires. Due to their importance, it is necessary to increase awareness of citizens about voluntary involvement in civil security and the need for mutual assistance in crisis situation. CRC is another important non-governmental organization in crisis management with 130 associations/offices across the country and the single national office (National Headquarter) that embraces 8,852 volunteers. CRC acts in mitigating human suffering, previously caused by military conflicts and today resulting from great natural, ecological, technological and other accidents and epidemics. CRC volunteers contribute to the enhancement and protection of citizens' safety and health through organizing life rescue activities, educating and training rescuers and implementing first aid assistance programs. One of the most distinguished of CRC's activities is continuous informing and training of citizens about the mine threat.

3. Active regional cooperation in South-Eastern Europe

Regional cooperation on bilateral and multilateral levels is important for Croatia because of the fact that South Eastern Europe (SEE) is a region which is exposed to similar types of hazards, such as flood, drought, earthquake, fire or other threats. Cooperation with the countries in the region or

through regional initiatives contributes to disaster prevention, disaster preparedness and mitigation. Croatia has signed cooperation agreements on protection and rescue with all neighbouring countries while an agreement with Serbia is being negotiated. The country is actively participating in regional initiatives and organizations such as the Disaster Preparedness and Prevention Initiative for South East Europe (DPPI-SEE) and Civil Military Emergency Preparedness South East Europe (CMEP SEE). Croatia is also taking part in initiatives of the European Union, Council of Europe, NATO and United Nations. Croatia participates in a number of civil protection projects aimed at cooperation between the SEE countries funded by the EU. One of them is financed through the EU Instrument for Pre-Accession Assistance – the IPA Programme entitled ‘Civil protection cooperation for candidate countries and potential candidates’, aiming to bring them closer to the EU Civil Protection Mechanism and to contribute to the development of their civil protection capacities. Another project was an IPA Civil protection exercise (2011-2012) through which Croatia organised the CRO-FLOODS 2012 Field Exercise which gathered civil protection intervention teams from seven countries of the region. Furthermore, Croatia takes part in cooperation supported by the EU and other sources on development of the ‘Regional sustainable development and civil protection in Bosnia and Herzegovina, Croatia and Montenegro’ project, with the aim to establish the first joint SEE Fire fighting Regional Centre (SEEFREC), as a mechanism for coordination of firefighting related activities and joint operational structure in line with the Hyogo Framework with increased participation of communities and businesses in risk reduction of forest fires.

Table of Contents

- Executive Summary 2
- Key Findings..... 4
- List of Abbreviations..... 9
- 1. Introduction..... 10
- 2. Analytical Dimensions 13
 - 2.1. Cultural and historical aspects of the civil security system 13
 - 2.1.1 Administrative tradition13
 - 2.1.2 Government/social culture.....15
 - 2.2. Legal/constitutional aspects of the civil security system 16
 - 2.2.1. Statutory basis.....16
 - 2.2.2. Political dimension19
 - 2.2.3. Operational dimension.....20
 - 2.2.4 External dimension.....22
 - 2.3. The relations between the civil security system and the citizens 23
 - 2.3.1. Expectations23
 - 2.3.2. Information.....25
 - 2.3.3. Education.....28
 - 2.4 The role of the private sector in maintaining civil security 29
 - 2.4.1 Role of societal/non-profit organisations/NGOs).....29
 - 2.4.2. Role of profit-oriented organisations31
- 3. Quality Measures..... 33
 - 3.1. Effectiveness 33
 - 3.1.2 Limits to national capacities35
 - 3.2. Efficiency..... 36
 - 3.3 Legitimacy..... 39
 - 3.3.1 Political support.....39

3.3.2 Legal support	41
3.3.3 Popular trust and support	41
4. Croatian Civil Security in the EU context	43
5. Conclusions.....	46
Annex I: Coded Data	49
Annex II: H1N1 in Croatia	59
Annex III: Resources	62
Annex IV: List of conducted interviews	69

List of Abbreviations

BA	Bosnia and Herzegovina
CM	Crisis Management
CMCMH	Crisis Management Committee of the Ministry of Health
CFA	Croatian Fire fighting Association
CROMAC	Croatian Mine Action Centre
CMRS	Croatian Mountain Rescue Service
CRC	Croatian Red Cross
DRR	Disaster Risk Reduction
GfK	Growth for Knowledge
NN	Narodne novine (Official Gazette (OG) of the Republic of Croatia)
NMHS	National Meteorological and Hydrological Service
NPRD	National Protection and Rescue Directorate
MoD	Ministry of Defence
MoI	Ministry of Interior
MIC	Monitoring Information Centre
RC	Republic of Croatia
SEE	South-Eastern Europe
SEEFREC	South East Europe Fire-Fighting Regional Centre
SEE RDRMP	South Eastern Europe Regional Disaster Risk Management Programme
SOP	Standard Operative Procedure
UNDP	United Nations Development Programme
UN-OCHA	UN Office for the Coordination of Humanitarian Affairs
UNISDR	UN Office for Disaster Risk Reduction

1. Introduction

Experience. The Republic of Croatia (hereinafter Croatia or RC) is highly exposed to natural hazards such as floods, earthquakes, forest fires, droughts and heat waves but also to industrial pollution. The most frequent types of crisis according to disaster statistics (PreventionWeb, 2013) in Croatia are floods, followed by wildfire and extreme temperatures.

The longer (including pre-2000) experience shows that the territory of Croatia was often exposed to river flooding. Around 15 percent of Croatia's territory is prone to flooding on major rivers (SEE RDRMP, UNDP Croatia and UNDP, 2011). In the last hundred years there were some 30 general floods of the rivers Sava, Drava and Danube and their tributaries (NPRD 2013- threat assessment), while in 2010 Croatia was affected by the highest flooding in the last fifty years recorded in the region. Croatia belongs to the group of countries with a high forest fire frequency. Among seismic events, the Biokovo Mountain earthquake of 1962 and the Ston-Slano earthquake of 1996 (which completely destroyed three villages) were the strongest in the last century.

One of the major crisis events in the recent history of the country was the war for independence, named the Homeland War (1991-1995), which had extensive civil security impacts through provision of civilian evacuations, care and shelter, humanitarian assistance, taking care of displaced persons and similar activities. Despite having a low risk for potential terrorist attacks, Croatia recorded a case of international terrorism in 1995, when a car-bomb hit the police station in Rijeka, killing one and injuring 26 persons.

Table 1: List of major crises in Croatia (2000-2012)

Year/ Month	Crisis description	Crisis category	Location	Damage		
				# of persons killed	# of persons injured	# of persons affected
2000/ June	Extreme temperature/ Heat wave	Natural disaster	Zagreb, Split, Osijek, Rijeka	40	-	200
2000/ Aug	Wildfire/Forest fire	Natural disaster	Split, Metkovic regions	1		
2000/ Dec	General flood	Natural disaster	Senj, Metkovic, Otocac regions			600
2001/ Sept	Flood	Natural disaster	Orahovica, Nasice, Zdenci	-	-	1,200
2001/ Oct	Baxter case	Public health accident		23	-	-
2002/ May	Water accident	Transport accident	Sava river	11	-	-
2003/ July	Extreme temperature/ Heat wave	Natural disaster		788	-	-
2005/ Aug	General flood	Natural disaster	Medjumurje district		-	250
2005/ Dec	Extreme temperature/ Extreme winter conditions	Natural disaster		5	-	-
2007/ Aug	Wildfire/Forest fire	Natural disaster	Dubrovnik region	-	-	26
2007/ Aug	Wildfire/Forest fire	Natural disaster	Kornati Islands	12	-	-
2008/ Sept	Road accident	Transport accident	Near Zir	14	-	30
2009/2010	H1N1 pandemic	Infectious disease		57	2,510	58,234
2010/ June and September	General flood	Natural disaster	Eastern, Western, Southern Croatia	-	-	300
2010/ Dec	General flood	Natural disaster	Metkovic, Opuzen, Ploce	-	-	810
2012/ Feb	Extreme temperature	Natural disaster	Cakovec	-	-	3

Sources: (1) Prevention web, 2013

(2) EM-DAT The International Disaster Data Base, 2009.

(3) ANVIL interviews

Note: The recorded number of 788 persons killed by extreme temperature in 2003 by PreventionWeb is not in accordance with Croatian national statistics and should be considered as questionable.

Definition. Civil security systems are in the ANVIL project defined broadly as the national apparatus (policies, bodies, and mechanisms) designed to protect against new and urgent threats to the security of people and/or the functioning of critical infrastructures. In Croatian practice the term civil protection system is mostly in use for similar purposes.

Crisis are in the project understood as serious (materializing) threats to the well-being of citizens and the integrity and functioning of critical infrastructures. In Croatia's official practice crisis is not used in

the terminology, but the following terms are in use (according to the Protection and Rescue Act, NN² - *Narodne novine* - Official Gazette of the Republic of Croatia issue no. 174 of 26 November 2004, Article 3):

- „Disaster“ (catastrophe) is any natural or man-made event in the territory of RC which, with its scope or intensity or suddenness, jeopardizes health, human lives or property of major value or the environment, whose occurrence cannot be prevented and consequences cannot be eliminated by the regular activities of the competent state administration and the existing operation and rescue forces.
- „Accident“ is an event caused by sudden impact of natural forces, man-made or other factors.
- „Major accident“ is an event which may develop to acquire characteristics of a disaster because, due to its intensity and extent the actors dealing with protection and rescue are not able to prevent its spreading or to eliminate its consequences.

The dominant crisis management (CM) approach is civilian-based rather than military-based. The National Protection and Rescue Directorate (NPRD) is responsible for activating operational units. The armed forces and the police also may take part in protection and rescue activities and their participation is coordinated between the Ministry of Defence (MoD), Ministry of Interior (Mol) and NPRD. According to the Croatian Constitution, in the event of major natural disaster, the armed forces may be deployed to assist the police and other state bodies. They could also be deployed to assist firefighting, rescue operations as well as surveillance and protection of the country's rights at sea (NN 85/10, Article 7, 17 and 101).

Croatian key legislation established coordination at the national level that takes an all hazards approach in the case of disaster and major accidents. The Protection and Rescue Act covers a wide range of threats, but it does not deal with specific threats while Croatia's civil crisis management response is subdivided and specialized to cope with specific threat types. In addition to the above-mentioned basic Act, a specific legal framework that regulates firefighting, protection of human life in the mountains, protection and rescue measures in accidents and transportations related to dangerous substances has been developed. National protection plans relate to specific threats such as floods, large fires, ionizing radiation, etc.

² *Narodne novine (NN)* refers to the Official Gazette (OG) of the Republic of Croatia. This abbreviation will be used further in the text.

The national coordinating body for the all hazards approach is 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 case of multidimensional incidents, cross-sector coordination is ensured by the NPRD (Protection and Rescue Act).

2. Analytical Dimensions

2.1 Cultural and historical aspects of the civil security system

2.1.1 Administrative tradition

After the dissolution of the Socialist Federal Republic of Yugoslavia (SFRY), Croatia declared independence in late 1991 and was internationally recognized, becoming a UN member in 1992. During the first decade of its independence until 2000, Croatia had a semi-presidential political system with strong presidential powers and comparatively somewhat reduced powers of the Parliament. It was an example of clear majoritarian democracy with a single party government and a strong presidential position.

The constitutional changes in 2000 altered the semi-presidential political system into a parliamentary one, followed by a significant reduction of presidential powers and empowerment of the Parliament. Since 2000 the country has been led by three coalition governments, with four to six parties involved. So, consociational democracy, marked with relatively visible proportional representation, has dominated the political system of the country during the last 12 years.

In line with the Constitution (NN 43/01, Article 133), the country is divided on units of regional and local self-government. Their structure, rights and obligations are defined by the Act on Counties, Cities and Municipalities (NN 86/06) and the Act on Local and Regional Self-Governments (NN 33/01).

At the regional level, Croatia is divided into twenty counties and the City of Zagreb, being the unique unit having both city and county status (NN 33/01, Article 6). Each county has approximately two hundred thousand inhabitants, a territory of about 2,750 square kilometers and includes approximately six cities and twenty-one communes (Ivanisevic S., et al., n.d.). At the local level, Croatia has 122 cities and 416 municipalities (WWW-HR, n.d.). Elections to regional and local representative bodies take place every four years and are based on a secret ballot as well as direct, equal and universal suffrage (NN 85/10, Article 10). According to the principle of subsidiarity, the

central government is not entitled to interfere in the responsibilities of local and regional authorities (WWW-HR, n.d.).

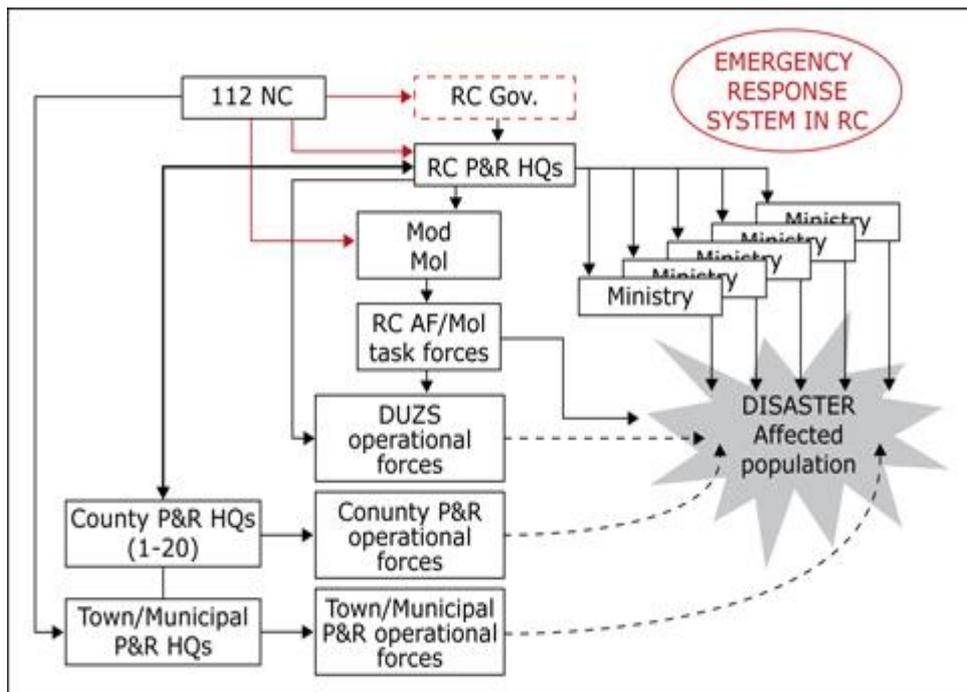
One of the main goals for all levels of governance is preservation and protection of the environment, health and well-being of their citizens. As it is described in the National Security Strategy (2002), possible results of natural and technological disasters in the country or a specific region pose a constant security threat for its citizens and material goods (NN 33/02). Therefore, cooperation on local, regional and state levels is an important factor for the achievement of above-mentioned interests.

On the state level, the Croatian government is responsible for management and effective functioning of protection and rescuing system. NPRD is the key coordinative agency during a time of disaster defined by the Protection and Rescue Act, but only the Croatian government has the authority to declare a disaster based on the recommendation of the NPRD director and it does not require consent of the Parliament (NN 174/04).

The obligation of local, regional and state governments is to participate in all actions relevant for the protection of people and material goods. Local and regional self-government units, within the framework of their rights and obligations, are responsible for the organization and planning, financing and enforcement of rescue and protection missions in the areas which are under their jurisdiction (NN 174/04). Apart from that, they are entitled to contain operational forces which are under the command of local and regional headquarters.³

Graph 1: Emergency response system in Croatia (Organisation Chart)

³ There are twenty NPRD district offices which are located throughout the whole country. In Zagreb, Osijek, Rijeka and Split there are also departments for protection and rescue, while within district offices in Split, Zadar, Šibenik and Dubrovnik there are state intervention commands.



Source: European Commission, 2012a

One of the tasks of local and regional authorities, according to the Constitution, is to maintain measures relevant for protection and rescue of its inhabitants. In the case of a disaster, when local government cannot respond to it properly, it can ask for additional help from the regional level. In the same way, the administration at the regional level which cannot respond to an existing disaster has a right to request help from the state level (NN 174/04).

To conclude, in Croatia the authority and responsibility for crisis preparedness and response first and initially rests on the local level. However, in the case when a crisis overwhelms local capacity, all necessary measures are taken by the NPRD which is in charge of crisis preparation and response at the state level.

2.1.2 Government/social culture

National culture analyses: Regarding the *Geert Hofstadter's index*, Croatia ranks relatively high on the power distance indicator (73), low on the individualism versus collectivism dimension (33), scoring moderate in the masculinity versus femininity field (40) and having high preference for avoiding uncertainty (80) (Hofstede n.d.). In other words, Croatia is depicted as a hierarchical and collectivistic society with a strong sense of group identities, strong preferences for mutual cooperation, caring for the weak and focusing on well-being and quality of life. The Croatian society's collectivistic nature has particularly been shaped during the self-managing socialism of the former Yugoslavia and during the

War of Independence (1991-1995), where parallel processes of nation-building and ethnic mobilization have galvanized collective identity.

According to the World Value Survey (n.d.), Croatia has progressed since the 1990s by diminishing traditional values in favor of more secular-rational values and increasing the scope of self-expression values at the expense of survival values.⁴ This has clearly mirrored Croatian democratization progress, marked with greater political participation, civil liberties, tolerance and respect for minorities (Kuntz, J., 2011, pp. 229-230, p.239).

Impact of culture on CM system: Croatia was previously part of the developed and organized civil security system in the former SFRY, which despite its ideological role and massive size, was functional. Historical legacies and administrative traditions provided the basis for developing civil security capabilities in Croatia (Interview, MoI, December 2012). After the dissolution of the SFRY, Croatia had to adapt its CM system to a democratic society (period of 1990s and 2000s). The first step of this process was the return of civil protection from the MoD to the MoI. Establishment of an integrated, sustainable and efficient CM system had to protect fundamental political values and subsequently underpin economic and social development (NN 33/02). The crisis management system in Croatia was well functioning during the war of independence when it had an important role in organizing civilian evacuations, refugee acceptance, taking care of displaced persons, humanitarian assistance and similar activities (Interview, MoI, December 2012). Finally, the building of the CM system has occurred simultaneously with the EU/NATO integration process and regional cooperation in South-Eastern Europe that have shown a necessity for greater civil security cooperation and positively impacted Croatian strategic culture. However, weaknesses of the current system indicate that experiences achieved during the recent war were not well-enough included into the later reforms of the Croatian system.

2.2 Legal/constitutional aspects of the civil security system

2.2.1 Statutory basis

Legal framework: The major legal act regulating the civil crisis management (CM) system is the Protection and Rescue Act (adopted in 2004, amended in 2007, 2009 and 2010) which defines institutional structure, rights and responsibilities of all actors involved, procedures and management of the protection and rescue activities. It established the NPRD as a single administrative organization regulating norms and standards in protection and rescue area. There are also other relevant acts that

⁴ Croatia progressed from 0.72 points in 1995 to 0.08 points in 2000 on the traditional/secular-rational values dimension and moved from the -0.53 in 1995 to 0.31 in 2000 regarding the survival/self-expression values.

regulate rights and obligations in areas such as firefighting, natural disasters protection, dangerous substances etc. The government has adopted generic and specific strategies addressing civil CM in the areas of security and defence, terrorism, chemical safety, water management and among others. Plans and programmes related to CM have been adopted at national and municipal levels (NN 96/10).

The legal framework and institutional setting has been developed regarding the mine issue after the recent war. The Croatian Mine Action Centre (CROMAC) was established (OG 24/98) by the government in 1998 as a leading organization regulating mine action in the country. Moreover, in 2012 the Government Office for Demining was established (NN 21/12) as a political coordinating body that monitors CROMAC activities, contributes to mine awareness raising and further development of the mine action system etc.

Reforms 2000-2012: The major change in the legal framework regulating CM was the promulgation of the Protection and Rescue Act (in force from 1 January 2005) establishing a new model of the civil security system in the country. Thus civil protection, firefighting and the new 112 system became integral parts of the NPRD system.⁵

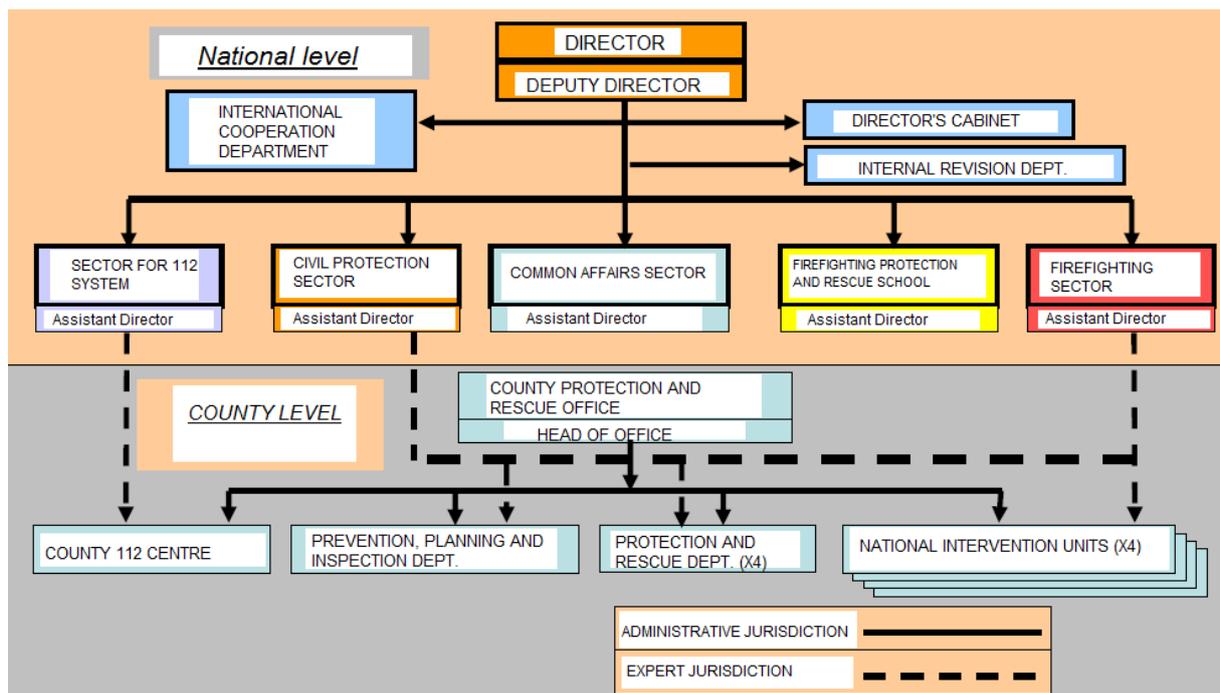
The Croatian protection and rescue system is complex and has not achieved an adequate coordination level. The mentioned Act re-emphasized the subsidiarity issue and the need to strengthen the system at local self-government units. Establishment of the protection and rescue headquarters at all levels and their linkage by the single 112 system, followed by the development of Standard Operative Procedures (SOPs) intended to contribute to a better coordination of the system and efficiency of the operational forces (NPRD, 2012, p.6). However, introduction of the new system caused some legal inconsistencies due to the fact that the civil protection and firefighting systems were previously parts of the MoI and are still not fully adjusted to the new organization. The lack of their legal definition and organization represent a significant problem (Interview, MoI, December 2012).

To solve the existing problems, a draft of the new Protection and Rescue Act is under preparation, containing new regulations regarding rights and obligations of local self-governments (including new model of financing, based on clear risk assessment for a certain area) and highlighting the role of

⁵ The NPRD consists of five sectors: the Civil Protection Sector; the Fire-fighting Sector; Sector for the 112 Emergency European Number; the Fire-fighting Protection and Rescue School; and the Personnel, Legal and Finance Sector. It also has the regional offices (i.e. the County Protection and Rescue Offices), linked to its Civil Protection and Fire-fighting Sector, as well as four National Intervention Units and four Protection and Rescue departments (NN 43/12)

volunteers in CM activities. It is intended to improve coordination, strategic planning, information inflow and management and thus contribute to risk reduction.

Graph 2: The structure of the NPRD command and control chain



Source: See NPRD: www.duzs.hr/download.aspx?f=dokumenti/Stranice/ustrojDUZS.pdf. Last access 25 October 2013.

2.2.2 Political dimension

The executive responsibility for CM primarily rests at local and regional levels whose authorities, with the assistance of local and regional protection and rescue headquarters, manage and coordinate forces at their governmental tiers. In a case when a disaster is proclaimed the NPRD is the main coordinative body which manages and commands the operational forces and coordinates all other participants involved (NPRD, 2012). The local and county headquarters are accountable to the head of the NPRD, who responds directly to the prime minister. However, the NPRD is represented in the government by the minister of interior (Interview, NPRD, December 2012). Civil security agencies (such as the Croatian Mountain Rescue Service - CMRS, Croatian Red Cross - CRC, and the other associations and institutions established by the government) participate in CM activities, when requested by the NPRD (NN 174/04, Article 26). They are either responsible to NPRD or to the minister of the specific department.

Policy formulation. The NPRD is tasked with system development and improvement by preparing plans and proposals to the government. Along with the NPRD, the MoI (with the inspectorate for fires and explosions which is in its competence) and the MoD (due to potential engagement of its special fire-fighting forces and the anti-fire escadrille) also have important roles in their respective policy formulation (Interview, MoI, December 2012).

Accountability: In the event of emergency, there are several provisions defined by the Constitution, Protection and Rescue Act and the other legislative documents, enabling special authority to be executed outside legislative control. A NPRD civil servant with the special responsibilities may order mobilization of citizens, temporary detraction vehicles, temporary restriction of property rights, etc. (NN 174/04, Article 53). The armed forces may also be deployed to assist firefighting and rescue operations and surveillance and protection at sea (NN 85/10, Article 7). Some individual constitutionally-guaranteed freedoms and rights may be curtailed in emergencies in accordance with the nature of the threat (NN 85/10, Article 17). Free enterprise and property rights may be exceptionally restricted by law (NN 85/10, Article 50).

2.2.3. Operational dimension

Implementation agency/ies: In general, the protection and rescue system consists of operational forces⁶, local and regional self-government units, armed forces and police in case of major accident or disaster (NPRD, 2012, p.3). The Coastguard capacities are not sufficient. Due to lack of financial resources the improvement of this segment (i.e. provision of ships and helicopters, organization of personnel training) remains the priority for the future.

Accountability: In the case of emergency, civil protection units consisting of citizens are organized at local, regional and national level. They are usually accompanied by collectives such as CMRS, CRC, and volunteer firefighting associations etc., which are active members of the system. However, civil protection as an organization shall be activated only in cases of major accidents or disasters. In other emergencies regular police, emergency health care and fire brigade services operate (Interview, NPRD, December 2012).

The NPRD is in charge of coordination of the protection and rescue system, while participation of the armed forces (if necessary) and police is jointly coordinated between MoD, MoI and NPRD. Regarding the mine issue, CROMAC is responsible for the coordination of all mine action activities.

⁶ The operational forces consist of protection and rescue headquarters, services and units of legal entities and central state administration bodies, firefighting commands and units, NPRD's services and units, civil protection headquarters and units (NPRD, 2012, p.3)

Operational tasks and responsibilities

Planning and risk assessment: The NPRD is in charge of developing and updating the National Protection and Rescue Plan, based upon risk assessment. Other ministries, agencies, local and regional self-government authorities etc. are required to develop risk assessments and plan for areas of their responsibility (NN 174/04). The government has adopted the last national threat assessment in 2009 and consequently the Protection and Rescue Plan in 2010 covering events of natural, technical, radiological and nuclear disasters. For the purpose of coordinated protection and rescue implementation, SOPs are being adopted, defining a joint action of operational forces in the event of disaster (NN 96/10).

Communication: The communication system is entirely led via the 112 system, which is run by the NPRD. Its sector for the 112 system is responsible for the information flow, regarding all possible threats and their consequences, to all participants involved in CM activities. The system functions as a CM centre (collecting, analysing and disseminating information) as well as an operations centre. It has a central unit plus 20 regional units. It reports on all risks and hazards and, if needed, alerts citizens, legal entities, rescue services, etc. (NN 174/04, NN 43/12).

Logistics: The NPRD's director passes legislation⁷ concerning mobilization of operational forces, their management, command and coordination in the event of disasters. The protection and rescue headquarters manage and command operational forces at the local and regional levels, while the NPRD is responsible for management and coordination at the national level. Also, the NPRD's director approves legislation⁸ regulating the recruitment and personnel and material organization of those units. The 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 (NN 174/04, NN 40/08, NN 111/07).

Monitoring: The NPRD is responsible for early warning, disaster prevention, preparedness and response. It can utilize all existing relevant governmental services, including Croatian Waters, National Meteorological and Hydrological Service (NMHS), Croatian Seismological Survey, State Service for Public Health, State Service for Nuclear and Radiological Safety etc. (World Bank, UNISDR Europe, SEE RDRMP, 2009, p. 86).

⁷ Rulebook on mobilization and action of the Operational Protection and Rescue Forces (NN 40/08, 44/08)

⁸ Rulebook on organization, recruitment and equipping of the civil protection units and alerting units (NN 111/07)

Illustration of the civil security system: Floods protection in Vukovar – Srijem County, June 2010

In May/June 2010, all counties in the region of Slavonia were hit by heavy rainfall. In Vukovar - Srijem County up to 125 l/m² of precipitation was reported, causing a water saturation of the soil, relief canals overcapacity and sudden increase of the water level in rivers. The Croatian Waters branch office Bid – Bosut had timely warned of the possibility of flooding. The county prefect convened a county Protection and Rescue Headquarter emergency session in order to consider the situation in the flood-affected and flood-threatened areas. The heaviest situation was evaluated in the area of the municipality of Babina Greda, due to a sudden rise of the Berava River. Municipal Protection and Rescue Headquarter engaged all available forces, associations of citizens and local population in flood protection banks building, population and livestock evacuation. Additional assistance in water pumping-out techniques was received from the neighbouring municipalities.

Thanks to coordinated operation, Vodoprivreda's employees managed to reduce the water level by its releasing into the fields, and thus restraining the water onrush and preserving the houses and the locality of Babina Greda. Some 8000 hectares of agricultural fields were submerged, but no casualties were recorded. Thanks to the timely warning, communication and efficient reaction of the Croatian Waters and local authority which engaged additional forces, the damage was significantly reduced. The capacities at local/regional level have been sufficient to deal with the situation and there was no need for national level assistance (Lovric, Z., Milic, I., 2012 pp. 59-73).

2.2.4 External dimension

Bilateral cooperation: Croatia has signed cooperation agreements on protection and rescue in the case of natural and man-made disasters with Hungary, Slovenia, Bosnia and Herzegovina (BA), Montenegro and Italy between 1997 and 2012 (Interview, NPRD, December 2012). An agreement with Serbia was in the time of finishing this study in the phase of negotiations. All agreements have almost the same content and structure⁹ while the agreement with Montenegro has minor differences. Eg. the period of cancellation in the agreement with Montenegro is six months after the other side receives notice (NN 07/08), while in the other agreements this period is three months.

According to Article 48 of the Protection and Rescue Act, the government decides whether to provide international assistance based on recommendation of the director of the NPRD who is entitled to

⁹ Therefore, they contain comprehensively defined articles, such as enforcement of protection measures, requesting and offering assistance, crossing state border for the purpose of protection and rescue, etc.

propose the provision of non-refundable financial assistance up to an amount which is determined by the government. Based on the bilateral agreement with BA, Croatia has helped the country in the summer of 2012 to fight fires by providing specialized airplanes and the service of pilots. Considering that the agreement with BA foresees entering its territory only in the range of 10 km from the state border, and this was insufficient to effectively fight the fires spreading further inland, the EU's Mechanism for Civil Protection enabled the NPRD to provide assistance to a neighbouring country (Interview, NPRD, December 2012).

According to all agreements the rescue teams or individuals participating in a mission do not need passports, visas or licenses when crossing the border at check points, but only the approval from the country that is requesting the help. The director of the NPRD establishes the SOP which defines the procedure of crossing borders in the case of the disaster.

Regional and/or multilateral provisions: Cooperation on the regional level is well developed in fields of mutual interest (NPRD, 2013a). Regional and multilateral collaboration within South Eastern Europe (SEE) is important for Croatia because the whole region is subjected to similar types of hazards (flood, drought, fire etc.). Thus, cooperation with the countries in the region, international organizations or within initiatives contributes to disaster prevention, preparedness and mitigation (World Bank, UNISDR Europe, SEE RDRMP, 2009).

C

roatia is actively participating in regional initiatives and organizations such as the Disaster Preparedness and Prevention Initiative for South East Europe (DPPI-SEE) and Civil Military Emergency Preparedness South East Europe (CMEP SEE) (World Bank, UNISDR Europe, SEE RDRMP, 2009). Croatia is also taking part in initiatives of international organizations such as the UN Office for Disaster Risk Reduction (UNISDR), Open Partial Agreement on the Prevention of, Protection against and Organization of Relief in Major Natural and Technological Disaster (EUR-OPA Major Hazards Agreement) of the Council of Europe, Civil Emergency Planning Committee (CEPC), Euro-Atlantic Disaster Response Coordinate Centre (EADRCC) and the EU Civil Protection Mechanism and EU Civil Protection Financial Instrument (NPRD, 2013a, NPRD, 2013b, NPRD, 2013c, NPRD, 2013d). The Protection and Rescue Act (Article 48-50) defines decision-making process for providing international aid in the case of disaster, rights and obligations of the operation forces and cross-border rules.

2.3 The relations between the civil security system and the citizens

2.3.1 Expectations

State-to-citizens expectations: According to the Protection and Rescue Act, citizens are obliged to take care of their own safety; to implement measures of personal and mutual protection on the basis of the principle of solidarity and mutual help; to take part in protection and rescue; to notify the 112 centre when noticing a threat/ occurrence of an accident. Citizens also have the right to be fully and timely informed about threats of disasters and to be trained in protection and rescue activities (NN 174/04, Articles 13–17).

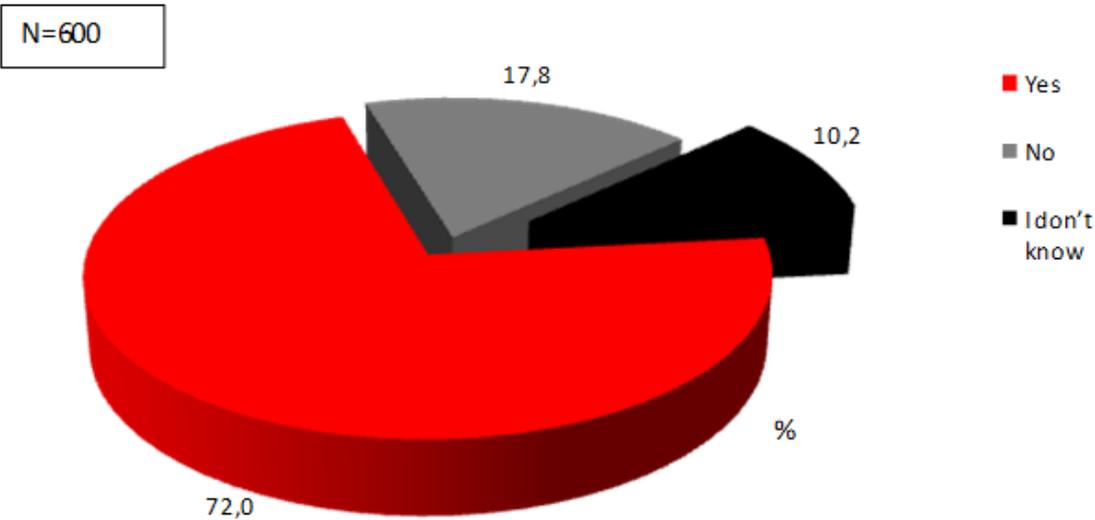
Citizens-to-state expectations: A comprehensive opinion poll on citizens' expectations towards government responsibility for civil security or their perceptions of threats has not been undertaken in Croatia so far. However, as earthquakes pose a strong threat to Croatia, the NPRD has participated in the EU project "SAFE QUAKE" (2009), within which research on citizen's awareness on earthquake safety rules was conducted. The research showed a lack of knowledge of the institutions responsible for providing first aid (34.8 percent), eliminating the consequences of earthquake (46.7 percent), damage repair (63.5 percent) and reuniting with family members (58.2 percent) among respondents¹⁰.

Considering that the citizens have the highest trust in the firefighting service (86 percent) and the police (50 percent),¹¹ it could be concluded that they are relatively satisfied with the performance of protection and rescue forces in those areas. High trust in the firefighting service could be explained by Croatia's long experience with forest fires, high level of volunteers' involvement which remains the main pillar of the response system and quick and efficient actions of firefighters in activities which are within their own competences (Interview, CFA, December 2012). The research results of the mentioned EU "SAFE QUAKE" project have shown that most respondents (72 percent) would be willing to assist in a crisis situation.

¹⁰ European Commission funded project "Safe Quake for improvement of the population's post-disaster behaviour in urban areas with high seismic risk", <http://safequake.eu/index.php> [Accessed 31 January 2012]

¹¹ *Reader's Digest* Survey „Trust on professions“, <http://www.rdtrustedbrands.com/tables/Trust%2520in%2520professions.country.Croatia.shtml> [Accessed 31 January 2012]

Graph 3: Willingness of citizens to voluntarily participate in rescue mission



Source: SAFE QUAKE Project, <http://safequake.eu/index.php>

In general, citizens are directly engaged in rescue activities as volunteers in various organizations providing service in CM, in collaboration with the NPRD. This especially refers to the volunteer firefighting associations, CMRS, CRC, speleological associations and rescue dog organizations. The major organizations participating in CM response gather together about 49,259 volunteers. There are 1,835 volunteer firefighting units with 39,657 volunteer firefighters, 750 volunteers of the CMRS and 8,852 volunteers in the CRC (Interview, CFA, November 2012; Interview CMRS and CRC, December 2012).

2.3.2 Information

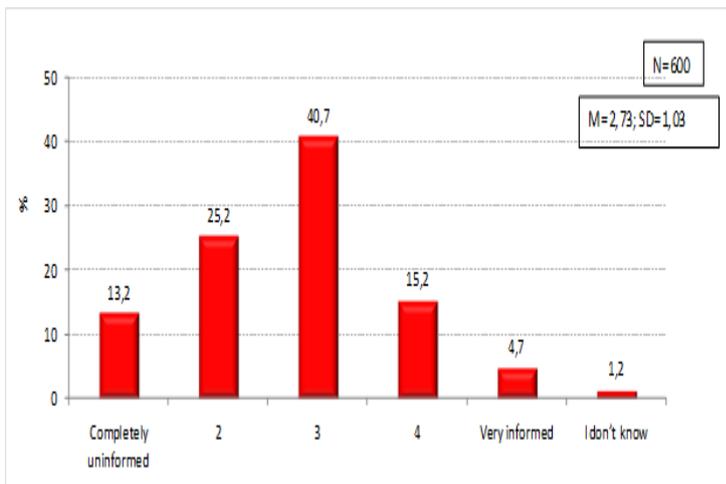
Information on preparedness and response: Alerting and informing citizens is conducted by unique operative – 112 communication centres, coordinating the actions of all parties involved in the alarm system of Croatia.¹² Along with alert signs, in the event of an upcoming and imminent threat, the competent 112 centre provides announcements informing the population of the threat type and the measures to be taken (NN 47/06, 110/11). The alerting signs are unique for the whole territory of

¹² Alerting is performed by prescribed alert signs including sirens, public address systems, electronic media (1st channel of the Croatian Radio and TV, local radio and television stations and NPRD's official website) and SMS (NN 47/06)

Croatia and most of the procedures on alerting and communication are regulated by SOPs (NN 13/06).

Television and radio remain the most powerful media which the citizens trust the most (56 percent)¹³. The EU project “SAFE QUAKE” survey has shown that most respondents feel uninformed (79.1 percent) and unprepared (79.2 percent) regarding recommended behaviour during an earthquake, as presented below:

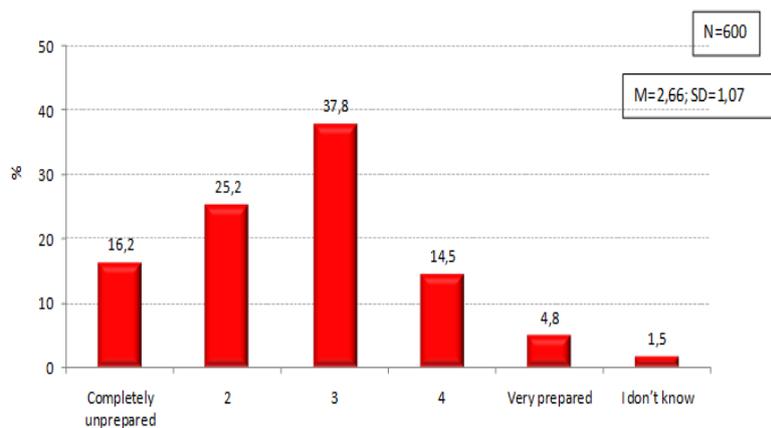
Graph 4: Citizens’ awareness on recommended behaviour during an earthquake



	%
uninformed (1+2)	38.4
neither informed nor uninformed (3)	40.7
informed (4+5)	19.9

Source: SAFE QUAKE Project, <http://safequake.eu/index.php>

Graph 5: Preparedness in terms of recommended behaviour during an earthquake

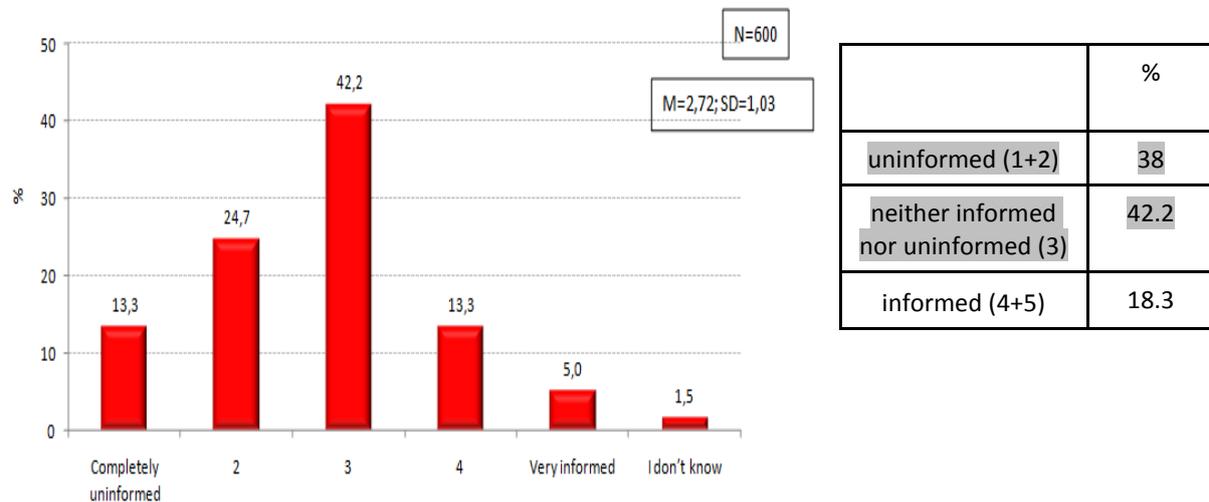


	%
uninformed (1+2)	41.4
neither informed nor uninformed (3)	37.8
informed (4+5)	19.3

¹³Rider’s Digest survey, <http://www.rdtrustedbrands.com/tables/Confidence%2520in%2520institutions.category.TV%2520and%2520radio.shtml> [Accessed 31 January 2012]

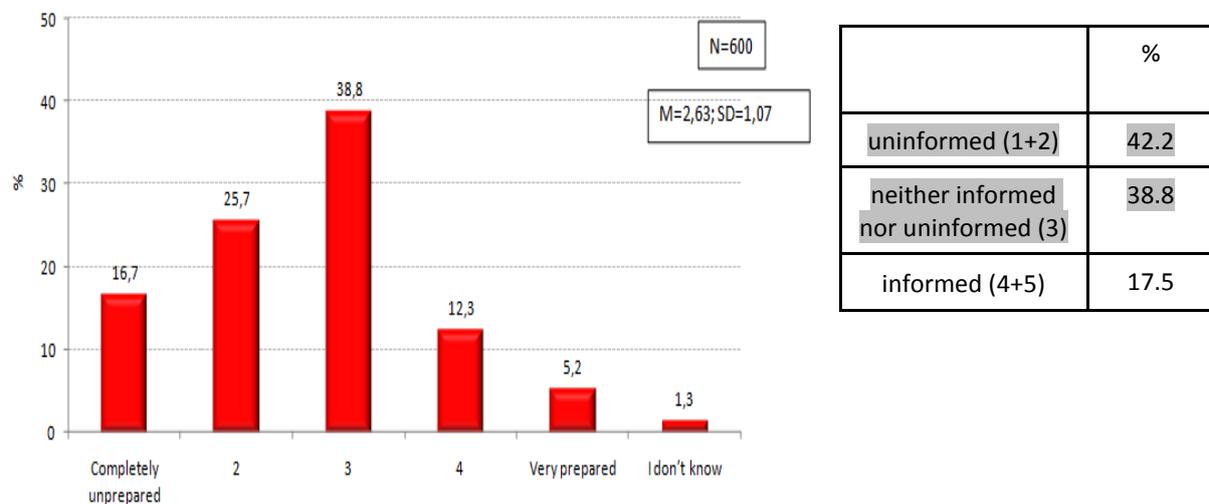
Source: SAFE QUAKE Project, <http://safequake.eu/index.php>

Graph 6: Citizens' awareness on recommended behaviour after an earthquake



Source: SAFE QUAKE Project, <http://safequake.eu/index.php>

Graph 7: Awareness on preparedness in terms of recommended behaviour after an earthquake



Source: SAFE QUAKE Project, <http://safequake.eu/index.php> [Accessed 31 January 2012]

During the flood seasons citizens contact the Emergency Management Office in Zagreb very often, seeking information on landslides, the flood situation, shelters etc. (Interview, Emergency Management Office Zagreb, December 2012). It could be concluded that citizens need to be informed

and educated effectively about civil security issues comprehensively both in their families, through the education system and at working places.

2.3.3 Education

Education and awareness/activation: The NPRD prepares various awareness raising materials, which are distributed mainly via internet but also by radio and TV. Usually, the NPRD creates on its website guidance notes specifically related to crisis preparedness and response. Other similar activities are provided by the CRC, CMRS, CFA, CROMAC and Emergency Management Office Zagreb and they include: publishing and delivering of magazines to members and public libraries, creation and dissemination of educational leaflets, films, etc. Distribution of crisis preparedness and response information is considered to be active and adequate, so the low level of citizens' awareness could be attributed to the lack of their interest and the education system rather than to a lack of available information.

Teaching on disasters is partially included in the school curricula, but disaster risk reduction (DRR) education is poor. The NPRD has developed the National Action Programme to Educate Children in Protection and Rescue, and its representatives have been providing informative lectures to the children and training sessions for school employees (UNICEF, UNISDR, 2011). Although natural disasters are studied at some faculties, only the University of Applied Sciences at Velika Gorica has included DRR as part of a crisis management study programme.

Non-profit organisations carry out various CM-related training activities targeting the larger public. This especially includes CRC, CROMAC, CMRS and CFA. Although there are no official data available on the total number of citizens trained per year, the authorities and NGO representatives pointed out that these types of training activities are well-attended and they contributed to a significant reduction of number of accidents. However, CM training sessions are usually conducted for professionals rather than for citizens and thus intervention actions in emergencies are mostly performed by professionals (Interview, Croatian Parliament, December 2012).

NPRD's Fire fighting Protection and Rescue School is providing and monitoring education and training for professional firefighters and response-oriented specialist courses for protection and rescue forces. The school also conducts courses for civil servants in local administration involved in protection and rescue (NPRD, 2013e) and until 2011 a total of 1,353 representatives, including members of counties and cities protection and rescue headquarters have passed these training sessions (NPRD, 2012, p.5). The CFA also (co)finances specialized training activities and education of firefighting officers, as well as regional exercises. In 2011, a total of 6,527 persons were trained for firefighters, while 1,038 attendants have passed special-oriented training sessions. Furthermore, in 2011 a total of 200

firefighting exercises were held for 5,815 participants and 190 professional seminars covering 2,190 participants (CFA, 2012 pp.16–21). Various educational programmes for professionals are also provided by the NMHS, CRC and CMRS.

There is a lack of in-depth scientific research on civil security issues in Croatia. However, upon an NPRD initiative, the government is (since 2009) supporting annual conferences of the Croatian National Platform for Disaster Risk Reduction, in line with the UN Hyogo Framework for Action (NPRD 2012, pp. 5-6). The government encourages activities of the CROMAC's Centre for Testing, Development and Training and the Trust Fund for Humanitarian Demining of Croatia. Within governmental support, CROMAC has co-founded the Cluster for Humanitarian Demining Operations Abroad and the South Eastern Europe Mine Action Coordination Council – SEEMACC (CROMAC, n.d. b). Furthermore, due to the great role of NMHS in preparedness and threats announcements, the government supports its international research and technological cooperation (e.g. ALADIN project) and its national projects, e.g. the Anemo Alarm software development (Interview, NHMS, December 2012).

2.4 The role of the private sector in maintaining civil security

2.4.1 Role of societal/non-profit organisations/NGOs

Overview: The Croatian Government has formal partnerships with the non-profit organizations responsible for civil security through pursuant legislative acts.¹⁴ These organizations are the CRC, CMRS, CFA, Croatian Community of Technical Culture, cynological, speleological and other associations or institutions established by the government. They are obliged to participate in protection and rescue activities and measures, when requested by the NPRD. The other non-profit organizations are included in the civil security system if needed, such as scuba diving, amateur radio organizations, search and rescue dog organizations, organizations for psychological assistance, organizations of Croatian Homeland War veterans, organizations dealing with landfill sites, etc. These associations represent important complementary resources at the national, regional and local levels, forging public-private partnership in dealing with security threats.

Formal role: Non-profit organizations are obliged to undertake preparedness measures from threats and consequences of accidents/disasters (NN 174/04, Article 18). Moreover, organizations that are operational forces of the system are additionally compelled to plan measures and undertake activities

¹⁴ Legislative provisions defining the governmental partnership with the NGOs in the civil security domain are: Protection and Rescue Act, NN 174/04, 79/07, 38/09, 127/10, Croatian Red Cross Act, NN 71/10, Croatian Mountain Rescue Service Act, NN 79/06 and Technical Culture Act, NN 76/93, 11/99, 38/09

aimed at elimination/reduction of disasters and accidents (NN 174/04, Article 5). CMRS is among the distinguished non-profit organizations dealing with crisis management preparedness, rescue and protection activities in the mountains and rivers, inaccessible areas and other emergency situations. It educates various societal groups and rescuers aiming to foster responsible behaviour and prevent accidents; performs training and exercise programmes. Volunteer firefighting societies, being part of the firefighting communities, play an indispensable role in raising crisis management preparedness through educating and training activities, organizing exercises and acquiring appropriate logistics for extinguishing fires (NN 139/04, Interview, CFA, December 2012)

The non-profit organizations take part in crisis management response as collective entities of operational forces (CMRS, CRC, CFA) or by involving individual members of particular associations that supplement NPRD's civil protection units. This engagement is in line with their formal obligations because non-profit organizations belonging to operational forces are obliged to take part in coordination/mobilization efforts and respect management authority of the NPRD when a disaster is proclaimed (NN 174/04, Article 4). CFA undertakes most of the crisis management response, having the highest level of equipment, expertise and experience within the Croatian civil security system.

Financing: Public authorities provide funding for non-profit organizations through direct budget payments from the central state, regional and local governments, through reimbursements by public enterprises and contracted programmes and activities. These revenues supplement organizations in implementing their plans and programmes through training and equipment of staff, infrastructure development and international cooperation.

Example: Croatian Red Cross - CRC is an important non-government organization in crisis management with 130 associations/offices across the country and the national headquarter that together embraces 8,852 volunteers. These offices are spanned across regional and local levels with 20 counties, 101 towns and 9 municipal associations/offices (CRC, 2011). CRC acts in mitigating human suffering caused by military conflicts (e.g. during the Independence war 1991-1995), but also caused by great natural, ecological, technological and other accidents and epidemics. In these circumstances, CRC trains and equips teams for offering assistance, organizes emergency shelters, search service and secures drinking water, communication and technical assistance. Additionally, it reduces consequences of accidents through gathering financial means, material goods and delivering humanitarian assistance. One of the CRC's most distinguished activities is continuous informing and training of citizens about the mine threats. Finally, CRC implements first aid assistance programs, promotes and organizes voluntary blood donation, enhances health education and actively prevents spread of infectious diseases (NN 71/10, Articles 3, 8, 9, 10).

2.4.2 Role of profit-oriented organisations

Overview: Public agencies outsource civil security responsibilities to profit-oriented organizations through subcontracting to them the implementation of civil security-related activities. Namely, public agencies such as the NPRD, Ministry of Environmental and Nature Protection and Croatian Waters cooperate with companies being officially authorized for engagement in emergency situations based on public tenders (Interview, NPRD and Ministry of Environmental and Nature Protection, December 2012). Their involvement depends on specific expertise and different types of threats.

Formal role:

Legal persons whose activities may jeopardize life and health of the people/environment (companies dealing with energy/water supply or producing/transporting/storing of hazardous material) are obliged to undertake preparedness measures, equip and train staff and make operational protection and rescue plans (NN 174/04, Articles 18, 19, 20, 22, 25). Through these internal and external safety plans, companies fulfil environmental/health safety standards and outline crisis response activities. Hence, big companies like INA Oil Industry or Croatian Electric Company (HEP) are important stakeholders in protecting Croatian critical infrastructure by implementing surveillance and capacity building measures (Matika, D., Poljanec - Boric, S., 2009. pp. 8-49). Regarding public-private partnership, private companies are mostly included by conducting threat assessment and protection/rescue plans for different public agencies, like in the case of the Kontrol-biro company (Interview, Emergency Management Office Zagreb, December 2012). Additionally, companies implement education/training programmes, covering occupational health, fire-protection and environmental safety, an example being "Institute of Safety Research and Development" while Cian and Elkron deal with sanitary and food security-related measures. Regarding crisis management response, legal persons having protection/rescue expert teams are obliged to make them available at the NPRD's disposal in case of a disaster or major accident. This particularly refers to companies dealing with the energy/water supply and hazardous materials whose equipped and trained employees should become part of operational forces (NN 174/04, Articles 19, 23). Referring to public-private partnership, there are more than 30 companies engaged in floods and water pollution protection. They are engaged by public enterprises like Croatian Waters through deploying mechanization, building protection banks, etc. (Interview, State Water Management Inspectorate, December 2012). Other important actors in crisis management response are Croatian demining-companies like DOK-ING Demining Ltd., Mungos Demining Ltd. and Heksogen (Interview, Government Office for Demining, December 2012) and firms developing environmental accident response services in the case of sudden accidents like IND-EKO with its expertise in tackling oil spills, sea pollution and transport accidents (IND-EKO, 2007).

Financing: Public agencies finance companies through public tenders, based on the particular needs for civil security services by the central state administration bodies, state agencies, public enterprises, local and regional self-government units. Hence, there is no permanent state-sponsored funding of the private sector because it occurs on a contractual basis (Interview, NPRD, December 2012).

Example: DOK-ING Demining Ltd. is the leading Croatian demining company and one of the global market leaders in humanitarian demining niche. It develops and commercializes its own technology by producing robotic products with the main purpose of protecting human lives. It is primarily focused on humanitarian demining activities but it also produces special firefighting vehicles. The company is in the Croatian market mainly funded through public tenders opened by the Croatian Mine Action Centre (CROMAC) where it competes with other demining companies.

3. Quality Measures

3.1 Effectiveness

Overview: The effectiveness of the system depends on the type of the crisis event and on the particular actors that are involved. Generally, the effectiveness of firefighting could be estimated as the highest due to the fact that Croatian fire brigades are well trained, well equipped and the most coordinated in the activities which they are leading (Interview, NPRD and MoI, December 2012).

In the case of serious failures of the system, there are two types of inquiry procedures – official internal and public inquiries. In the majority of cases where problems have occurred, no political inquiries were undertaken and only internal professional analyses were carried out. However, the outcomes of internal inquiries are usually not available for the wider public. Besides, a single surveillance body for objective monitoring the work of all actors in Croatia does not exist (Interview, MoI, December 2012). Political resignation based on political liability is quite seldom in Croatia.

The Protection and Rescue Act (Article 58-60) envisages only financial penalty provisions for legal persons, responsible persons in the local and regional self-governments or individuals for a misdemeanor of obligations. There is no evidence of the penalties that have been imposed in practice. However, the inspection and control of the implementation of protection and rescue activities is carried out by NPRD inspectors, and reports on such inspection activities are regularly submitted to the Parliamentary Committee for Internal Policy and National Security. In 2011 there were 1,280 inspection surveillances from firefighting inspections and 777 protection and rescue surveillances. In general, the NPRD report for 2012 estimates that regular inspection surveillance has raised the operational preparedness of the system (NPRD, 2010).

Assessment of effectiveness: As an illustration of big cases that were widely debated in public, the following examples could be mentioned:

The Kornat Island case (August, 2007). On August 30, 2007 the largest firefighters accident in the history of firefighting in Croatia happened on Kornat Island when a routine firefighting operation ended with great loss of human lives. Twelve out of thirteen firefighters (both professional and voluntary), who found themselves surrounded by fire, lost their lives and one was badly injured by high temperature. In an almost one and half century long history of firefighting in Croatia, no accident with similar consequences was ever recorded. The Office for National Security of Croatian Parliament and MoI formed a voluntary forensic investigation team composed of researchers from various Croatian universities and institutions while national institutions and agencies contributed to

the official investigation. The law-court in Sibenik has appointed its own independent team of court experts to analyse the fire spread and possible accident's causes. The research team from the Forest Fire Laboratory of the University of Coimbra, Portugal has also undertaken an independent scientific investigation from meteorological, vegetation, fire spread, thermodynamics and aerodynamic points of view, but also the firefighters injuries as well as rescue operation organization.

The official explanation was that the Kornat accident was caused by a natural phenomenon known as "burning of non-homogenous gas mixture" i.e. a high temperature burning, with fast expansion of hot gasses (see: Stipanicev, D. and Viegas, D., 2009, pp. 48). Actually, the summer of 2007 was one of the most severe fire seasons. Meteorological conditions were extremely unfavourable on the day of the tragedy, and the fire danger index was very high. Even today there are still questions related to this tragedy left unanswered, while the responsibility for the major failures that occurred bears solely on the former commander of the Sibenik County firefighting unit Drazen Slavica, who only recently went to court and whose proceeding is still underway (Vuko, 2011).

However, the Kornat Island case remains an example of uncoordinated crisis operation which was inefficient both on the prevention and response side. In particular, the fire protection was not appropriately organised, the firefighters radio communication was not completely functional and there were some organisational failures (involvement of juveniles). Thus, the victims rescue operation in terms of crisis response was late and not well organised, indicating unpreparedness of the system for such a disaster. Although it is difficult to estimate whether better coordination of the crisis event could have reduced the human losses, the main conclusion remains that changes in system coordination are needed.

Unfortunately, there were no major changes after this case in terms of division of competences and responsibilities. Weaknesses in coordination should be reduced by the new act which is in preparation and should clearly define direct responsibilities for collaboration of action in signature crisis ("on-site commander" at operational level) (Interview, NPRD, December 2012). The National Fire Protection Strategy 2012 - 2020 was prepared in 2012 and introduced a stronger role of firefighting inspection. On the other hand, the lessons learned should help avoiding future similar accidents. The concept of such (eruptive) fire behavior should be introduced in preventive education related to forest fires in Croatia while information about the danger associated with this type of fire danger should be disseminated to people involved in firefighting interventions (see: Stipanicev, D. and Viegas, D., 2009, pp. 50-51).

The Baxter case (October 2001). 23 kidney patients died in Croatian hospitals during dialysis in October 2001. The patients died in a single week beginning with October 8, but the alarm was only

raised when one clinic reported four deaths in one day (while, usually, about six dialysis patients die in a week).¹⁵ As a consequence, there were calls for ministerial resignations. The Croatian health minister, Ana Stavljenic Rukavina, offered her resignation over the deaths (in spite of the fact that most of the tragic events happened after the alarm was raised). Prime Minister Racan rejected her resignation calling for an official inquiry instead. An investigation was undertaken by the Ministry of Health, police and the state prosecutor's office. The Baxter company representatives took part in the investigation. The inquiry led to the suspicion that the filters made by Baxter could have caused these tragic events but Baxter has denied any responsibility, pointing out that dialysis was only one part of the treatment process. However, the findings showed that some patients died during dialysis treatment, while others died from choking or heart problems shortly afterwards (BBC, 2001). Similarly, an independent investigation in Spain has not established any link between Baxter's equipment and its own deaths. However, after comprehensive investigation it was confirmed that a certain quantity of filters were not correct and might have caused the death of patients during dialysis. The Baxter case showed the weaknesses of the system: the flow of information at the state level was not adequate, there was no „physical“ focal point equipped with trained staff for crisis management in such situation (Interview, Ministry of Health, December 2012).

The flood cases in Western Croatia (June 2010) were the highest in the last fifty years and caused significant damage due to delayed prevention and inefficient response (shortage of sand and bags, lack of coordination and communication, inadequately equipped operational units). Particularly affected were the areas of the river Sava, Mura, Drava and Danube, Istrian and Dalmatian catchment basins. The National Centre against Floods has taken responsibility for the damage and the director of the Croatian Waters has offered his resignation (Jutarnji list, 2010), which was not accepted by the decision makers¹⁶. Following this experience the procedures for preventive action in the future were clearly defined. Namely, operational management of flood risks and flood protection measures are determined by the National Flood Protection Plan (NN 84/10) and the General Implementing Flood Protection Plan (Croatian Waters, 2011). It is the example of crisis which was followed by internal inquiries only.

3.1.2 Limits to national capacities

Croatia has never considered or requested external assistance because it has not been faced with a signature crisis. International assistance would be activated in a case of strong earthquake or accident

¹⁵ Before this tragedy, ten kidney patients died in one week in Spain (August 2000), while undergoing dialysis using the same equipment produced by US-based firm Baxter.

¹⁶ According to the Water Act (NN 153/09 and 130/11) flood protection is managed by Croatian Waters

in the Krsko (Slovenia) nuclear plant located some 20 km from the state border. The reason for such a potential request would be insufficient capacities to respond on wider civil protection demands (NPRD, 2013f; Interview, NPRD, December 2012).

According to legislation in force, the NPRD proposes to the government a declaration of a state of emergency. However, a state of emergency or signature crisis has never yet been declared (Interview, NPRD, December 2012).

3.2 Efficiency

Overall: There are no unified analyses of the efficiency of total cost of protection and rescue services in Croatia in the strategic and planning documents and annual reports.¹⁷

Assessment and monitoring: The reform of the system in 2005 aimed to establish a comprehensive and more transparent approach with higher cost efficiency through establishing the NPRD. However, due to partly overlapping (or not clearly defined) responsibilities between national, regional and local levels regarding monitoring, approving and the reporting, the financial aspects are still not completely transparent in practice.

The Protection and Rescue Act does not warrant that the protection and rescue plans should contain an estimate of the implementation costs.¹⁸ The current Protection and Rescue Plan (96/10) states that all participants in a protection and rescue operation are entitled to reimbursement of actual expenses of operation from the state budget. The reduction in investment in this area over the last few years and until 2015 is primarily the result of the overall efforts to reduce the budget expenditures due to the economic recession.

According to Article 35 of the stated Act, monitoring of all operational forces should be conducted by the NPRD, but it is not related to the efficiency, i.e. financial planning and management. Representative bodies of local and regional self-governments should meet at least once a year or when passing the budget, and consider the state of the protection and rescue system, including the sources and methods of financing (Article 28 of the same Act). Typically, the report on the protection and rescue system in the previous year precedes the development of a new plan. The reports at local

¹⁷ 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.

¹⁸ The need for financial planning and cost analysis is underlined in the protection and rescue plans, but only as a means of financial resources to implement the plan, i.e., determining the ways and sources of financing the system of protection and rescue, without specific financial indicators.

and regional levels contain information on the work done, on the implementation of the plan from the previous year, and on the funds used for a particular purpose. Since the plans do not contain financial indicators, except for monitoring the realization of the budget, it might be concluded that there is no systematic monitoring and analysis of their effectiveness.

According to the protection and rescue items in the period 2009 – 2011, the budget is below 100 percent as a result of continuous efforts to reduce expenses. The savings in the field of protection and rescue are direct consequence of the economic crisis and the intention to rationalize budgetary expenditures at all governmental levels in recent years.

Costs of the civil security system:

According to estimates by the Ministry of Finance (Croatian Government, 2010a, p.28) the overall budget for protection and rescue (key users including other relevant sectors) ranges between 439 and 499 million kunas annually (60-68 million euro) which is some 0.4 percent of the state budget. These numbers relate to the national level only and there are no available comprehensive data for the investment in the protection and rescue system at the local and regional levels. The state budget covers the majority of costs of key bodies: NPRD, CRC, CMRS and partly CFA, and the allocations for the mentioned institutions over the last three years were about 0.2 percent of the annual state budget.¹⁹ In 2012, 177.4 million kunas (24.3 million euro) are planned for the budgetary users in the function of protection and rescue or 4.9 percent less than the previous year, with a declining tendency of funds in future years. Out of the available budgetary sources in 2012, some 90 percent was allocated to NPRD, 6 percent to the CFA, 3.9 percent to the CMRS and 0.1 percent to the CRC.

In addition to these direct resources at the national level, the funds are planned and allocated for protection and rescue through the budgets of other ministries, such as the MoD (firefighting as part of the other tasks of the Armed Forces), the MoI, the Ministry of Sea, Transport and Infrastructure (e.g. road safety), the Ministry of Agriculture (protection from floods), the Ministry of Environmental and Nature Protection (prevention of accidents in industrial plants), the Ministry of Health, and agencies under their jurisdiction. These funds are in continuous decline, too. Furthermore, funds allocated from the budget for the CMRS and the CRC are only part of the resources available to these organizations, i.e. they are also funded from other sources, such as donations, EU funds, etc.

¹⁹ In 2011 the key institutions of the system were allocated 186.5 million kunas (25.5 million euro) from the budget.

A detailed analysis of allocations for all segments of protection and rescue is hardly possible due to the diversity of sources. In the period 2009-2011 the allocations for protection and rescue at the county level 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 114 million kunas (15.7 million euro) for protection and rescue, which is a decrease of 9.3 percent in comparison to 2010.

Restructuring/reforms: By 2005 Croatia had a fragmented protection and rescue system with many units in the sector whose activities overlapped, which were not sufficiently well equipped and financial sources were not spent efficiently. By reforming the system in 2005, essential progress has been made in the organization of the protection and rescue system according to the level and the example of other European countries. However, the reform has not been fully implemented, especially regarding the establishment of a transparent funding of protection and rescue services, which would have significantly increased the efficiency of the system. Therefore, one of the key goals for the next few years is the harmonization of quality of the protection and rescue system at the national level, with regard to still significant regional disparities, and financial consolidation with the aim of reduction and more rational cost management²⁰ (interview, NPRD, December 2012, Croatian Government, 2010b).

Privatization: Competition in the private sector in Croatia is quite large, and the market is small. The firefighting activities include more than 20 companies, about 15 companies are selling military and police equipment from mostly foreign suppliers, while jobs related to environmental protection are still in initial stages and are mostly focused on eliminating waste, etc. Over the past few years, several companies offer consulting services in the sector and are preparing protection and rescue plans. Although quality is of utmost importance, in some jobs that require special types of goods and services that should be of high quality and which must pass all possible foreign or Croatian certificates of quality, the price is usually a key factor. Although a part of the service users in this segment primarily seek to meet the legal obligations, low price is the main reason for the decision on vendors.

Major investments: The acquisition and disposal of equipment was not coordinated among multiple actors in the system. Some institutions and agencies order equipment individually. There is still no unified control and connection centre from which everyone could obtain the necessary information

²⁰ The strategy of government programs for the period 2011-2013 (Croatian Government, 2010b) assesses the Croatian protection and rescue system as satisfactory, but with the need to further strengthen the coordination. Further alignment with the EU *acquis communautaire* in the sector is stated as a special task, as well as strengthening of GIS system coordination and integration and technological development of the 112 system

about available equipment. In recent years there have not been significant investments; however, there are needs and plans to increase investment in the future. Cost-benefit analysis has not been carried out for the investment projects in the sector so far.

Public perception: There were some public debates about the CM expenditures which are usually raised after a certain crisis occurs. One of the examples is the general flood in 2010 when the public raised questions on the amount of funds available for protection and rescue activities and how the money was spent on the consequences of flooding.

3.3 Legitimacy

3.3.1 Political support

The major criticism on the system relates to insufficient coordination and lack of clear division of responsibilities which significantly undermine the overall capacity to prevent or react to a crisis in an appropriate manner (Interview, Mol and NPRD, December 2012). One of the main reasons for it lies in an inappropriate present legal framework – i.e. the legal vacuum regarding still undefined civil protection as a category within the legal framework. The most noticeable case that supports the existing scepticism is the Kornat Island case (August 30th, 2007) which is practical evidence of the main dysfunctions of the system.

The Kornat Island case was one of the few crises that resulted in wider political debates, questions and inquiries, due to the immense public and media pressure. However, even that case has not resulted in significant legislative amendments that could contribute to the overall quality of the system (Interview, CFA, December 2012). If there is need for it, internal queries are undertaken but there is a lack of independent oversight body responsible for conducting an objective analysis (Interview, Mol, December 2012).

Several tough public debates took place in the time of some specific crises. One of them was after the general flooding in mid-2010, the highest in the last fifty years in the region. The system in Croatia was not well prepared and the response was late.²¹ According to the Water Act (OG 153/09 and 130/11), flood protection is managed by Croatian Waters. Its director has offered his resignation, but it was not accepted by the decision makers (Jutarnji list, 2010). However, this case resulted in better operational management of flood risks and the immediate implementation of flood protection

²¹ Areas of the Sava, Mura, Drava and Danube rivers, and Istrian and Dalmatian catchment basins were particularly affected.

measures determined by the National Flood Protection Plan (OG 84/10) and the General Implementing Flood Protection Plan (Croatian Waters, 2011). In the second half of 2012 another strong flood caused the damage of some 30 million kunas and it led the government to allocate 4.5 million kunas from funds for emergency situations as a down payment for the mitigation of floods. These experiences have contributed to launching activities for reducing the risk of flooding. A multi-year program of building regulative and protective aquatic facilities and buildings for amelioration is being prepared (to be adopted by the government) for the period 2013-2017. Moreover, through the process of harmonization of water environmental legislation with the *acquis communautaire*, the newly prepared flood protection plans in Croatia will after 2015 become a systematic part of the river basin management plan.

Debates on crisis management structures and/or their performances regularly take place at the annual conferences of the Croatian Platform for DRR (Interview, NPRD, December 2012).

No crisis has ever led to the collapse of the government and/or resignation of responsible ministers due to political pressure.

The reform process itself has been on-going since the very beginning of the formation of Croatia's institutions for a functioning civil security system. However, the real reforms actually started with the change of relevant legislation in 2005 and establishment of the NPRD as the main executive protection and rescue body. The reform process is still underway having in mind the fact that the new legal act is under preparation (the draft is expected to be finalised by the end of 2013).

While the reform process is on-going, the debate itself is less substantial and limited to the narrow group of experts and practitioners within the system, while the general public is rarely being consulted or invited to take part in it (Interview, Mol and NPRD, December 2012). The Croatian National Platform for DRR²² contributed to the overall debate by highlighting the need for changes within the system which can be accomplished by strengthening coordination, strategic planning and risk management at national level, building an integrated system for horizontal and vertical linking of the actors for natural disaster risk reduction, as well as stronger involvement of local and regional self-government.

The reforms were mainly initiated by experts and practitioners within the system in order to consolidate it and make it more functional. On the other hand, the process of Croatia's accession to the EU and adjustment to EU standards played important role in the reforms.

²² The Croatian national platform for DRR is organised on an annual basis since 2009 in Zagreb

3.3.2 Legal support

There have been no major ombudsman cases related to crisis preparation and response laws or activities. However, there are two cases of the ombudsman's reaction which are worth mentioning. The first is related to environmental pollution²³ while the other one is linked to protection of children in the areas which were hit by the flood in 2010 (interview, Croatian Parliament, December 2012).

One of the few preparation/response actions in crisis that has been legally challenged in national courts was the one related to the Kornat Island case. In the mentioned case, the State Attorney Office has issued an indictment against the fire commander for the area where the accident took place. In 2009, the judge panel of the county court has dismissed all the charges but a year after the Supreme Court has abolished the decision and put the case back in court. In order to collect more details about this tragedy, the MoI has established the Committee for the Kornat Accident, but the case is still in procedure.

The extent of inclusion of basic human rights and civil liberties into the civil security system has not been much debated. Namely, the character of crisis situations so far has not had to face the state apparatus choosing between the breach of human rights/civil liberties and appropriate reaction.

3.3.3 Popular trust and support

According to the results of the Growth for Knowledge (GfK) survey conducted by Croatia in 2009 (the most recent available study), the majority of Croatian citizens (87 percent) feels safe in the place of their habitat (Metro-portal, 2009).

Table 2: Safety perception of Croatian citizens

Study of GfK Agency	
'very safe'	48%
'pretty safe'	39%
'safe and unsafe'	10%

²³ Related to the need for air pollution protection in Slavonski Brod from the releases of the oil refinery in Bosanski Brod (BA), the ombudsperson for children has requested the report from ministries, agencies, local level units and the Parliamentary Committee for Environment Protection and Nature of the Croatian Parliament (November in 2012). The reason for it was vulnerability of health and life of the children due to industrial pollution of the mentioned oil refinery. Furthermore, the ombudsperson for children was invited to parliamentary sessions related to air pollution from Sisak Refinery.

'very unsafe'

3%

Source: GfK, 2009

As for the citizens' opinion on the way the country is managing different types of crises, according to our respondents at interviews, opinion polls on issues related to civil security and rescue have not been conducted yet (Interview, Emergency Management Office Zagreb and MoI, December 2012).

Since the Special Eurobarometer 371 on Internal Security covers only EU member states, data on the extent to which Croatians believe that the state is doing enough to manage different types of threats are not available. The only source that may be helpful is the Readers Digest Survey on 'Trust in our community', where firefighters are the first on the list of most trusted institutions in Croatia with a very high score of confidence among the population during the last two years (93 percent).²⁴

There were no noticeable consequences of crisis preparation and response to the outcome of the elections, regardless of their type (presidential, parliamentary and local).

Regardless of the fact that there is no specific statistical data on internal security as in EU Member States, the interview respondents highlighted the need for better coordination and cooperation between all actors involved in the civil security system and for raising awareness about the importance of the citizens' voluntary contributions. It is difficult to measure individual cases of voluntary engagements and their potential impact/reflection on general trust in the system, but there are a number of organizations that are an important part of it that are actually formed from citizens on a voluntary basis, such as CFA, CRC, CMRS, etc. (Interview, Emergency Management Office Zagreb, December 2012).

The way the floods were fought in continental Croatia in 2011 might be a good example of the aforementioned argument as well as of their effect on crisis management legitimacy, due to the extensive coverage of the media.

²⁴ For details see Readers Digest website - <http://www.rdtrustedbrands.com/tables/community.shtml> [Accessed 31 January 2012]

4. Croatian Civil Security in the EU context

EU-state. The European Union is a relevant factor for the functioning of the civil security system in Croatia. The country has become an EU member in mid-2013 and has during negotiations been harmonising its relevant legislation with the *acquis communautaire* in the area of environmental protection. The provisions of the SEVESO II Directive (98/82/EC) have been transposed into national legislation. The Environmental Protection Act (OG 110/07) was adopted together with related bylaws (regulation and rulebook covering issues of managing dangerous substances and preventing major accidents). Through this, Croatia has also partially transposed the Directive 2003/105/EC that amends and supplements the SEVESO II Directive. The Protection and Rescue Act was also harmonized with the SEVESO II Directive. The areas related to civil security where Croatia has implemented reforms with support from the EU include water and dangerous waste management, industrial pollution control and risk management, nuclear safety and radiation protection, etc.

By entering into EU membership, Croatia has an obligation to define European critical infrastructure within its area as well as protection of such infrastructure for other member states which is in its own national interest. Creation of such a legal framework is underway (NPRD, 2013f, p.74).

State-EU. Croatia participates in the Civil Protection Mechanism and Civil Protection Financial Instrument. The Memorandum of Understanding (MuO) on Croatia's participation in the Civil Protection Mechanism entered into force in September 2009 (International Agreements NN 9/09), making Croatia the Mechanism's 31st participating state, while the country has taken part in cooperation since 2002 as an observer. The EU Civil Protection Mechanism enables Croatia to have access to the European Commission's Monitoring and Information Centre (MIC) as well as to the Common Emergency Communication and Information System (CECIS) which facilitates communication between the MIC with national authorities. Since May 2008, Croatia has participated in all activities, including inter alia the co-organisation of the Modules Basic Training programme (European Commission, 2012b). In 2014 Croatia will have to take into consideration the newly adopted legal framework establishing the Emergency Response Centre which is becoming the new "operational heart" of the EU Civil Protection Mechanism, replacing and upgrading MIC. The country will have to prepare national risk assessments and risk management plans as a precondition for the use of structural funds. Furthermore, the creation of civil protection modules will be necessary in order to make Croatian capacity available to European emergency response capacity (Kpal-Milic-Vaharic, 2013, p 1296-1305).

Croatia has never considered or requested external assistance (through MIC) because so far the country has not faced a crisis that surpassed its national capacities. Croatia reacted to MIC requests

and to Civil Protection Mechanism requests several times. The cases of sending sand bags to Hungary during floods in 2010; assistance during floods to Albania in 2010 and assistance with Canadairs and firefighting helicopters to Greece, Bosnia and Herzegovina and Montenegro in 2012 could be mentioned (European Commission, 2012c). The MIC assistance would be activated in case of a signature crisis such as a strong earthquake or accident in the Krsko (Slovenia) nuclear plant which is located some 20 km from the state border. The reason for such a potential request would be insufficient capacities to respond to wider civil protection demands (Interview, NPRD, December 2012).

Being an EU candidate country, Croatia was eligible for Solidarity Fund assistance and received support for flooding twice in 2010. The amount was granted as exceptional assistance to natural disasters (3.8 m euro for the spring flooding and 1.2 m euro for the autumn 2010 flooding) because both cases were according to the damage not considered to be “major natural disasters” in Croatia, but a neighbouring country, as the flooding in Croatia led to a major disaster in Slovenia (European Commission, 2012d).

The EU crisis management approach is based on the principle of EU member states' responsibility to protect their citizens and the principle of solidarity in crisis situations (Kopal, Vahtaric, 2011, p. 296). Croatia is committed to the EU the concept of internal security and the line ministries are responsible for implementing activities of the Internal Security Strategy within their own competences, while the responsibility of civil protection is on the national level. The country is also taking part in consultations on the solidarity clause which is not fully implemented yet and the implementation activities are being developed on the EU level (Interview, NPRD, December 2012).

The country has participated in several simulation exercises to enhance joint capacities in dealing with earthquakes (EU TEREX in Italy in 2010; EU Danubius in Romania in 2009; SweNorEx 2009 in Sweden) and flooding (EU HUROMEX 2008 in Hungary) (European Commission, 2013; European Commission, 2012e)

Croatia also participates in a number of civil protection projects aimed at cooperation between the countries of South-Eastern Europe (SEE) funded by the EU. One of them is financed through the EU Instrument for Pre-Accession Assistance - IPA Programme entitled ‘Civil protection cooperation for candidate countries and potential candidate’s, aiming to bring them closer to the EU Civil Protection Mechanism and to contribute to the development of their civil protection capacities²⁵ (European Union, n.d. a). Another project was the IPA Civil protection exercise (2011-201 through which Croatia

²⁵ The project was implemented from 1 December 2010 to 30 November 2012, with funding of 4m EUR

organised the CRO-FLOODS 2012 field exercise which gathered civil protection intervention teams from seven Western Balkan countries (European Union, n.d. b).

Furthermore, Croatia takes part in cooperation supported by the EU and other sources on development of the Regional Sustainable Development and Civil Protection programme in Bosnia and Herzegovina, the Croatia and Montenegro Project, with the aim to establish the first joint South East European Fire fighting Regional Centre (SEEFREC), as a mechanisms for coordination of firefighting related activities and joint operational structure in line with the Hyogo Framework with increased participation of communities and businesses in risk reduction to forest fires (SEE RDRMP, UNDP Croatia and UNDP, 2011, p.21).

Citizens' level. Croatia was not covered by the Eurobarometer Special Report 383 and there are no public opinion surveys focusing on the attitude and general awareness of citizens regarding EU coordination of civil protection, apart from issues already mentioned in this study.

5. Conclusions

What works – what doesn't:

Croatia inherited a long tradition of the former Yugoslav federation which has built and implemented an efficient civil security system. Historical legacies and administrative traditions provided a good basis for developing its civil security capabilities. The crisis management system in Croatia functioned well during the war of independence when it had an important role in organizing civilian evacuations, refugee acceptance, taking care of displaced persons, humanitarian assistance and related activities. However, the principles of civil security have been changed during its further development. The building of the CM system has occurred simultaneously with the EU and NATO integration processes which positively impacted Croatian strategic culture.

The strengths of Croatia's civil security system are highly professional and operational protection and rescue capacities particularly at central government level; well trained and well equipped forces, particularly in firefighting, with good experience in addressing forest fires, in flood crisis management and in some other areas. Besides, huge progress has been made in dealing with the mine action that Croatia was faced with during the recent war and in the post-war period. Croatia has developed humanitarian demining capacities (physical demining, equipment, know-how, and rehabilitation of mine victims) which became its comparative strength in Europe and worldwide.

The Croatian protection and rescue system needs to be reorganised. It needs more adequate coordination and a clear division of responsibilities for raising its operative efficiency. The structures and actors are well functioning, but coordination among them (particularly the commanding dimension, procedures, responsibilities and competences) is not adequately defined, causing problems in implementation. The system of crisis management is not well enough recognised. These problems are intended to be solved with the new legal act, which is under preparation and aims to clearly define responsibilities. In terms of operational forces, the coastguard remains severely underfinanced which in turn has impacted on its CM capacity and equipment. The technical capacity and human resources potentials need to be reorganised particularly in local self-government units, which are the weakest executive and implementing component of the system. This is partly resulting from Croatia's regional development imbalances. The system is facing financial problems and there is a need for rationalisation without double capacities. There is lack of unified analyses and transparency of total costs of the system and its services especially at regional and local levels, monitoring, approving and reporting on financing of certain activities is not clearly defined, cost-

benefit analyses are not undertaken. However, a new model of financing is envisaged to enhance transparency whereby, amongst others, the financing of local levels will be based on clear risk assessment for a certain area.

Although the information on different segments of the civil security system is relatively actively and widely distributed to the citizens, it is difficult to estimate the overall level of public perception and knowledge in the CM field since comprehensive research on citizens' opinions, views and expectations has not been undertaken in Croatia so far. Surveys on citizens' perception of threats and government's responsibility regarding civil security are also missing. According to available data, citizens have trust in the civil security system, particularly in the police, while most of them feel safe in the place of their habitat. Education on protection and rescue is partially included in the school curricula, but there is a poor disaster risk reduction education. Citizens are willing to take part and are actively involved in rescue activities as volunteers in various organizations providing service in disaster management, such as volunteer firefighting societies and associations, mountain rescue services, the Red Cross, speleological associations, and search and rescue dog organizations. Generally, there is a lack of citizens' and media awareness regarding protection and rescue issues as well as a lack of systematic, in-depth scientific research on civil security issues in the country.

Non-profit organisations and private parties significantly strengthen the civil security system in Croatia. Non-profit organisations cover all aspects of the system and represent important complementary resources at the national, regional and local levels, forging public-private partnerships in dealing with security issues. Public agencies outsource civil security responsibilities to profit-oriented organizations and companies which are officially authorized for engagement in emergency situations through subcontracting. Big companies with specific expertise in different types of threats are important stakeholders in protecting Croatian critical infrastructure by implementing surveillance and capacity building measures.

EU value added. The European Union has been a relevant factor for the development of the civil security system in Croatia during the EU accession period. EU membership represents an opportunity for strengthening and improving the quality of the civil security system through implementing EU values and following the new achievements in this sector. The adherence to principles and guidelines of the EU Internal Security Strategy could raise the quality of crisis management practices in Croatia in terms of efficiency and internal coherence, particularly through strengthening of an all-hazards approach to threat risk assessment, reinforcing the links between sector-specific early warning and crisis cooperation systems. It could contribute to better coordination of the system at national and

local levels. Acting in a spirit of solidarity has already been demonstrated in the cases of previous Croatian assistance to other countries through MIC but in the eventual case of a big natural or man-made disaster, it represents an important external assistance mechanism for the country. Finally, the EU could be understood as an umbrella for facilitating cooperation in civil security assistance interventions in the event of a disaster or major accident. The experience of Croatia's participation in IPA pre-accession funds on civil security is a good starting point for an efficient use of the financial resources available from EU funds.

Annex I: Coded Data



ANVIL PROJECT MAPPING PRTOCOL - WP2 CROATIA

1	Introduction	Scoring instruction	Score	Source	Comments (in case of specific problems with data)
1. a	Is there an official/formal definition of crisis?	No = 0 Yes = 1	1	Protection and Rescue Act NN 174/04	
1. b	Is the crisis management approach primarily based on military or civilian operations?	Military = 1 Civilian = 2	2	NPRD, MoI (interview)	
1.c.	If civilian operations dominate, is the military used for support for crisis management operations?	No = 0 In exceptional situations = 1 Regularly = 2	1	Constitution NN 85/10	
1.d	Does the country take MAINLY an all hazards/generic or MAINLY a specific/functional threats approach to crises and disasters?	Mainly all hazard = 1 Mainly specific threats = 2	1	Protection and Rescue Act NN 174/04	
2	Analytical dimensions	Scoring instruction	Score	Source	Comments (in case of specific problems with data)
2.1	Cultural and historical aspects				
2.1.1	Administrative tradition				
2.1.1 .a	Is the state unitary or federal?	Unitary = 1 Federal = 2	1	Constitution NN 85/10	
2.1.1 .b	Is the political system parliamentary or presidential?	Parliamentary system = 1 Presidential system = 2	1	Constitution NN 85/10	
2.1.1 .c	Is the country a monarchy or a republic?	Monarchy = 1 Republic = 2	2	Constitution NN 85/10	
2.1.1 .d	Is the political system a consociational or a majoritarian democracy?	Consociational democracy = 1 Majoritarian democracy = 2	1	Political practice	

2.1.1.e	Is delegation constructed in a top-down or bottom-up fashion?	Top-down = 1 Bottom-up = 2 Both = 3	3	NPRD, MoI (interview)	
2.1.2	Culture				
2.1.2.a.i	Geert Hofstede country national cultural score - DPI		73	http://geert-hofstede.com/countries.html	
2.1.2.a.ii	Geert Hofstede country national cultural score - IDV		33	http://geert-hofstede.com/countries.html	
2.1.2.a.iii	Geert Hofstede country national cultural score - MAS		40	http://geert-hofstede.com/countries.html	
2.1.2.a.iv	Geert Hofstede country national cultural score - UAI		80	http://geert-hofstede.com/countries.html	
2.1.2.a.v	Geert Hofstede country national cultural score - LTO		NA	http://geert-hofstede.com/countries.html	
2.1.2.b	World Value Survey's national score on dimension 1 - traditional vs. secular		0.08	http://www.worldvaluessurvey.org/	Year 2000
2.1.2.c	World Value Survey's national score on dimension 2 - survival vs. self-expression		0.31	http://www.worldvaluessurvey.org/	Year 2000
2.2	Legal & constitutional aspects				
2.2.1	Statutory basis				
2.2.1.a	To what extent is the legal framework that regulates civil security centralized versus fragmented?	Highly centralized (1-2 key laws regulates civil security) = 1 Neither centralized nor fragmented (3-5 key laws regulates civil security) = 2 Highly fragmented (6 or more key laws regulates civil security) = 3	1	Protection and Rescue Act	
2.2.1.b	When was the last major reform in the civil security field undertaken?	Provide the year of the reform	2005	NPRD, MoI (interview)	
2.2.1.c	Does the statutory basis of the civil security system rely on formal legislation	Formal legislation = 1 Executive order = 2	1	NPRD, MoI (interview)	

	or executive order?				
2.2.1 .c	Are formal legal provisions in place allowing the state to call for a state of emergency (including derogations from political order)?	No = 0 Yes = 1	1	Constitution NN 85/10 (Article 17 and 101)	
2.2.1 .d	Are formal legal provisions in place allowing the state to call for a state of disaster (facilitated operational coordination mechanism)?	No = 0 Yes = 1	1	Protection and Rescue Act NN 174/04	
2.2.2	Political dimension				
2.2.2 .a	On what level of government does executive responsibility for civil security FIRST AND FOREMOST rest?	At the national level = 1 At the regional level = 2 At the local level = 3	1,2, 3	NPRD, Mol (interview)	
2.2.2 .b	On what level of government does policy formulation for civil security FIRST AND FOREMOST rest?	At the national level = 1 At the regional level = 2 At the local level = 3	1	Protection and Rescue Act NN 174/04	
2.2.3	Operational dimension				
2.2.3 .a	Is there a specialised agency for crisis response at the national level?	No = 0 Yes = 1	1	Protection and Rescue Act NN 174/04	
2.2.3 .b	Are there specialised agencies for crisis response at the regional level?	No = 0 Yes = 1	1	Protection and Rescue Act NN 174/04	
2.2.3 .c	Is the exercise system formalised by law or executive mandate?	No = 0 By law = 1 By executive mandate = 2	1,2	Protection and Rescue Act NN 174/04	
2.2.3 .d	How many major exercises with a national dimension have been organised in the period 2008-2012?	Register the number	16-20 (4 to 5 annually)	NPRD (interview)	
2.2.3 .e	How many major exercises with an international dimension have been organised in the period 2008-2012?	Register the number	1	NPRD (interview)	
2.2.4	External dimension				

2.2.4 .a	Has the country signed bilateral agreements with all neighbouring countries?	No = 0 Yes = 1	1	NPRD (interview)	*bilateral agreement with the Republic of Serbia is in the process
2.2.4 .b	How many countries has the country signed bilateral agreements with OTHER THAN the neighbouring countries?	Register the number.	7	The official website of NPRD	
2.2.4 .c	How many regional/multilateral agreements on RESPONSE oriented disaster management (i.e. not general conventions on environmental protection) is the country part of?	Register the number.	With all major international organizations	NPRD (interview)	
2.2.4 .d	Has the country received assistance from partner/neighbouring country/ies in response to MAJOR DISASTERS (not day to day cross-border help) during the period 2000-2012?"	No = 0 One or two times = 1 More than two times = 3	0	NPRD (interview)	
2.3	State-citizens relations				
2.3.1	Expectations				
2.3.1 .a	Do citizens have a formal/legal obligation or responsibility in civil security? Please choose the maximal score on a scale (i.e. option 2 includes yes option 1 as well).	Not formally specified = 0 Temporary support upon request by public authorities = 1 Regular private responsibilities for disaster management (e.g. mandatory civil service and/or insurance) = 2	1	Protection and Rescue Act NN 174/04	
2.3.2	Information				
2.3.2 .a	Does the country maintain a siren system?	No = 0 Yes = 1	1	Rulebook on procedures of alerting the population NN 47/06, 110/11	

2.3.2 .b	Does the government have a system for radio/TV warnings	No = 0 Yes, at the local/regional level = 1 Yes, at the national level = 2 Yes, at both local/regional and national levels = 3	3	Rulebook on procedures of alerting the population NN 47/06, 110/11	
2.3.2 .c	Does the government have a central website with updated information on crisis events?	No = 0 Yes, at the local/regional level = 1 Yes, at the national level = 2 Yes, at both local/regional and national levels = 3	2	NPRD (interview)	
2.3.2 .d	Does the government make use of social media (Facebook, Twitter etc.) to update citizens on relevant crisis issues?	No = 0 Yes, at the local/regional level = 1 Yes, at the national level = 2 Yes, at both local/regional and national levels = 3	0	NPRD (interview)	
2.3.2 .e	Does the government have a mobile application for reaching citizens with vital crisis/security information?	No = 0 Yes, at the local/regional level = 1 Yes, at the national level = 2 Yes, at both local/regional and national levels = 3	0	NPRD (interview)	
2.3.3	Education				
2.3.3 .a	Is civil emergency training (not/except basic FIRST AID) part of the school curriculum?	No = 0 Yes = 1	0	UNICEF and UNISDR EUR, 2011.	
2.3.3 .b	Do societal/voluntary actors offer civil emergency training?	No = 0 To members/professional = 1 To members and limited public outreach = 2 To member and wide-spread training programmes for general population = 3	3	Croatian Mountain Rescue Service, Croatian Firefighting Association, Croatian Mine Action Centre, Croatian Red Cross (interview)	

2.3.3.c	Does the government run TV campaigns to raise awareness of crisis issues among the public?	No = 0 Yes, moderately (once per year) = 1 Yes, extensively (more than once per year) = 2	0	NPRD (interview)	
2.3.3.d	Does the government provide for a budget for sponsoring research/technological developments on civil security/crisis management?	No = 0 Yes = 1	0	Croatian Platform for DRR - conclusions	*these activities are not envisaged in annual budget, but occasionally supported??
2.3.3.e	If yes, please provide the overall volume of research funding for civil security	Register the number			
2.4	Role of private sector				
2.4.1	Role of societal/ non-profit organisations				
2.4.1.a	Do societal/non-profit actors play an official/legally mandated role in EXCEPTIONAL crises?	No = 0 Yes = 1	1	Constitution NN 85/10, Protection and Rescue Act NN 174/04, NPRD (interview)	
2.4.1.b	Do societal/non-profit actors play an official/legally mandated role in the REGULAR provision of civil security?	No = 0, In parts of civil security (e.g. emergency medicine) = 1 In (almost) all aspects of civil security = 2	2	Constitution NN 85/10, Protection and Rescue Act NN 174/04	
2.4.2	Role of profit-oriented organisations				
2.4.2.a	Do for-profit/private actors play an official/legally mandated role in EXCEPTIONAL crises?	No = 0 Yes = 1	1	Protection and Rescue Act NN 174/04	
2.4.2.b	Do for-profit/private actors play an official/legally mandated role in the REGULAR provision of civil security?	No = 0 In parts of civil security (e.g. emergency medicine) = 1 In (almost) all aspects of civil security = 2	2	Protection and Rescue Act NN 174/04	
3	Quality measures	Scoring instruction	Score	Source	Comments (in case of specific problems with data)
3.1	Effectiveness				
3.1.2	Limits to national capacities				

3.1.2.a	How many times has external assistance been received during a crisis?	Register the number for 2000-2012.	0	NPRD (interview)	
3.1.2.b	How many times have a state of emergency or disaster been declared AT THE NATIONAL LEVEL as a consequence of a crisis?	Register the number for 2000-2012. If there are no legal provisions for state of emergency/disaster, note NA	0	NPRD (interview)	
	How many times have a state of emergency or disaster been declared AT THE REGIONAL LEVEL as a consequence of a crisis?	Register the number for 2000-2012. If there are no legal provisions for state of emergency/disaster or data is not accessible at this level, note NA	0	NPRD (interview)	
3.3	Legitimacy				
3.3.1	Political support				
3.3.1.a	How many major reforms have been undertaken?	Register the number for 2000-2012.	1	NPRD, MoI (interview)	
3.3.1.b	How many major national political debates on crisis management structures or performance have taken place (2000-12)?	Register the number for 2000-2012.	Exact data not available (around 5)	NPRD (interview)	*national political debate (2004) regarding promulgation of the Protection and Rescue Act; 4 conferences of the Croatian Platform for DRR
3.3.1.c	How many formal and politically instituted inquiries/committees on civil security have been undertaken at the national level?	Register the number for 2000-2012.	2	NPRD, MoI (interview)	(Kornat island case, Baxter case)
3.3.1.d	Has there been a premature change in the government (replacement of individual ministers up to full resignation of government) due to civil security issues?	No = 0 1-2 instances = 1 3 or more instances = 3	0	NPRD, MoI (interview)	
3.3.2	Legal support				

3.3.2.a	How many NATIONALLY NOTED judicial challenges or ombudsman petitions concerning the civil security system have been filed?	Register the number for 2000-2012.	1	NPRD, MoI (interview)	
3.3.2.b	How many landmark judicial or ombudsman rulings have affected the civil security legal and/or institutional framework?	Register the number for 2000-2012.	0	Ombudsman (interview)	
3.3.2.c	Are there restrictions on judicial oversight powers over the REGULAR civil security system (i.e. except in cases of exceptional states of emergency)?	None = 0 Partial (legally defined leeway for operational crisis management) = 1 Extensive (e.g. no civilian jurisdiction over military actors in crisis management) = 2	0	Protection and Rescue Act NN 174/04	
3.3.3	Popular trust and support				
3.3.3.a	Based on Eurobarometer data, what percentage of respondents feel that their country is doing enough to manage natural and man-made disasters?	Record the sum percentage for "Agree" and "Tend to agree"	NA	Special Eurobarometer 371 (2011)	
3.3.3.b	Based on Eurobarometer data, what percentage of respondents feel that their country is doing enough to fight terrorism?	Record the sum percentage for "Agree" and "Tend to agree"	NA	Special Eurobarometer 371 (2011)	
3.3.3.c	Do official actors maintain registers for volunteers in crisis management?	No = 0 Yes = 1	0	NPRD, MoI (interview)	
3.3.3.d	If yes to above, list number if accessible	Register the number per 1000 capita for 2011			
3.3.3.e	If no to 3.3.3.c. or 3.3.3.d is unreliable, how many volunteers are estimated to be in the non-profit sector?	Register the number per 1000 capita for 2011.	According to the available data approximately	Croatian Mountain Rescue Service (interview), Croatian Firefighting Association - Annual Report 2011, Croatian Red Cross - Brochure 2011	

				4		
4	Civil security in the EU context	Scoring instruction	Score	Source	Comments (in case of specific problems with data)	
4.a	How many times has your country activated the Commission's Monitoring and Information Centre (MIC) – 2007-2011?	Register the number for 2007-2011	To be completed by UI/IFHS	http://ec.europa.eu/ec ho/files/policies/disaster_response/EUCPM_activations_since_01012007.pdf		
4.b	How many times has your country contributed to a MIC request - 2007-2011?	Register the number for 2007-2011	To be completed by UI/IFHS	http://ec.europa.eu/ec ho/files/policies/disaster_response/EUCPM_activations_since_01012007.pdf		
4.c	Does your country participate in the EU civil protection mechanism's training programme?	No = 0 Yes = 1	1	Hollis, Simon (2010). National Participation in EU Civil Protection. Swedish National Defence College.		
4.d	If yes to question 4.b, approximately how many practitioners participated in the EU civil protection mechanism's training programme in the 2009-2010 training cycle?	Register the number for the 2009-2010 training cycle	15	Hollis, Simon (2010). National Participation in EU Civil Protection. Swedish National Defence College.		
4.e	How many EU-led civil protection simulation exercises did your country participate in between 2002-12?	Register the number for 2002-2012	4	http://ec.europa.eu/ec ho/policies/prevention_preparedness/preparedness_en.htm		
4.f	How many times has the country received financial support through the EU's Solidarity Fund (SF) due to natural disasters (2002-Sept. 2012)?	Register the number for 2002-Sept 2012	2	http://ec.europa.eu/regional_policy/thefunds/doc/interventions_since_2002.doc		
4.g	How much aid has the country been granted through the SF due to natural disasters (2002-2012, Sept.)?	Register total financial assistance in million euro for 2002-Sept 2012	5	http://ec.europa.eu/regional_policy/thefunds/doc/interventions_since_2002.doc		
4.h	Based on Eurobarometer data, what percentage of respondents are aware that the EU coordinates civil	Register the percentage	NA	Special Eurobarometer 383 (2012)		

	protection both inside and outside the EU? (Proxy for awareness)				
4.i	Based on Eurobarometer data, what percentage of respondents believe that a coordinated EU action in dealing with disasters is more effective than actions by individual states? Record the sum percentage for "Agree" and "Tend to agree" (Proxy for attitude)	Register the percentage	NA	Special Eurobarometer 383 (2012)	

Annex II: H1N1 in Croatia

Pandemic influenza (H1N1) emerged in Croatia in June 2009, while the most intensive wave of patients diagnosed with the influenza virus was recorded in mid-November of the same year. The number of patients diagnosed with influenza in the 2009/2010 season was 58,234, out of which 2,510 were hospitalized and 57 died (out of which 32 were virologically verified).

Table 2: Timetable of emergency response to the H1N1 virus - Croatia

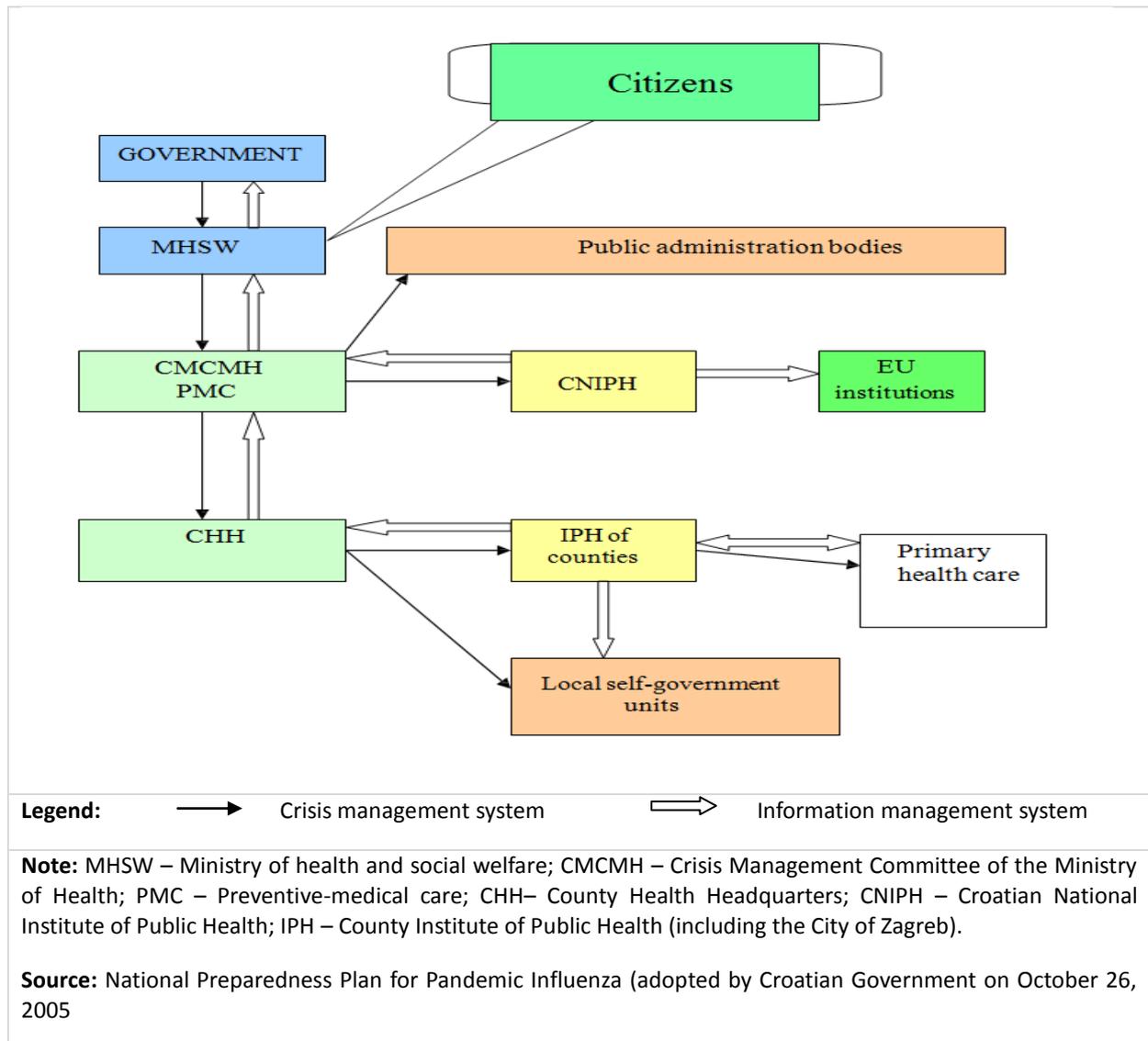
24 April 2009	<ul style="list-style-type: none"> - WHO issues alert on new virus in Mexico and the USA - the Croatian National Institute of Public Health alerts Ministry of Health which has activated its Crisis Management Committee of the Ministry of Health (CMCMH) - Epidemiological service and all health care professionals are informed on new virus - on the basis of National Preparedness Plan for Pandemic Influenza, epidemiologists issue the need of preparedness for a potential pandemic to the county institutes of public health - there is a continuous communication with the media and general public
29 April 2009	<ul style="list-style-type: none"> - National Preparedness Plan for Pandemic Influenza is activated - CMCMH takes over coordination function, while the anti-epidemic function is carried out by the Infectious Disease Epidemiology Service and the Ministry of Health takes over the coordination of local crisis headquarters
30 June 2009	<ul style="list-style-type: none"> - first cases reported in Croatia - Epidemiological service implements anti-pandemic measures, stipulated by National Preparedness Plan for Pandemic Influenza
mid-November 2009	<ul style="list-style-type: none"> - Main wave of illness caused by Virus effects Croatian population
27 November 2009	<ul style="list-style-type: none"> - Vaccination begins: priority groups - media campaign against vaccination - CMCMH launches new communication strategy with the media – CMCMH has appointed 3 experts who may communicate with the media, with a prior permission of the Minister
November-December 2009	<ul style="list-style-type: none"> - Vaccination begins: Entire population (a total of 22 000 people have been vaccinated instead of 75 000 people envisaged)
<ul style="list-style-type: none"> - in the 2009/2010 season a total of 58 234 patients were diagnosed with influenza, out of which 2510 were hospitalized and 57 died (out of which 32 were virologically verified) 	

Source: Interview, Epidemiological service, March 2013

A crisis management committee of the Ministry of Health (CMCMH) was activated in April. The CMCMH was structurally organized within the body for coordination and management of local self-government units and to that end organized county health headquarters (CHH) in all Croatian counties. One of CMCMH departments, namely the Department for Preventive-Medical Care (PMC) was in charge of epidemic control activities. CMCMH was formed as a central state administration body tasked for crisis management and thus representing a link between existing central state administration, local authorities and professional organizations in order to ensure a *timely response* to *crisis* situations. Primarily as a management body, PMC used the following professional expertise:

1. The Croatian National Institute of Public Health (Infectious Disease Epidemiology Service and national laboratory for influenza)
2. 21 county institutes of public health (Epidemiology Service)
3. 113 Sanitary – epidemiological branches of the county institutes of public health i.e. hospitals and family physicians

Chart: Health crisis management and information system - the event of epidemics:



The key strategic decisions regarding the managing of the H1N1 crisis taken by the government included:

- To establish national body tasked for pandemic preparedness planning
- To define the vaccination strategy
- To plan a comprehensive strategy for flu pandemic suppression
- To strengthen the epidemiologic and virologic flue monitoring system

- To ensure the availability of drugs, vaccines and logistical support

No investigations were undertaken in the aftermath of the crisis. Thus, the H1N1 crisis did not contribute to any political crisis nor lead to major changes regarding legislation, policies or institutions. Except for the dilemma regarding vaccination, the general public perception on the government's dealing with the pandemic influenza remained positive. In parallel with the appearance of epidemic vaccine, the media campaign escalated against it, regardless of professional epidemiologists' instructions and explanations that it is a proven and well – known vaccine which is not harmful but prevents complications and deaths. However, media reports on potential side effects of the vaccine resulted in exceptionally low responses to the vaccination scheme and, also, a large number of patients. Although the media campaigns against vaccination were based on not-verified and not-completed information and thus directly endangered public health, no inquiry occurred. On the other hand, the epidemiologists from the Epidemiologic Service had a slightly narrower communication space than usual because any time when addressing the public, it had to be approved by the Ministry of Health. The attempts of some politicians to demonstrate the safety of the vaccine, and thus support vaccination in media, were not successful and have even worsened the situation due to the fact that the public in general do not trust politicians. In general, the whole situation was extremely dangerous and was the first of its kind in Croatia. In future events of epidemics, the media should be required to convey advice from the professional community during crisis situations in order to avoid fatal consequences.

Annex III: Resources

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Conducted interviews

No.	Institution	Month, year
1	Croatian Mountain and Rescue Service	November, 2012
2	National Protection and Rescue Directorate	December, 2012
3	Croatian Red Cross	December, 2012
4	Croatian Fire Fighting Association	December, 2012
5	Ministry of Health	December, 2012
6	Ministry of Environmental and Nature Protection	December, 2012
7	City of Zagreb, Office of Emergency Management	December, 2012
8	Ministry of Maritime Affairs, Transport and Infrastructure	December, 2012
9	Ministry of Interior	December, 2012
10	National Meteorological and Hydrological Service	December, 2012
11	Croatian Parliament	December 2012
12	Ministry of Agriculture - State Water Management Inspectorate	December, 2012
13	Government Office for Demining	December, 2012
14	Clinic for Infectious Diseases "Dr. Fran Mihaljevic", Zagreb	December, 2012
15	University of Applied Sciences Velika Gorica	March, 2013
16	Croatian National Institute of Public Health - Epidemiological service	March, 2013
17	Office of the ombudsman	April, 2013