

INTERDISCIPLINARY STUDIES
ON CENTRAL AND EASTERN EUROPE

Vol. 17

Edited by
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CRISIS GOVERNANCE IN BOSNIA AND HERZEGOVINA, CROATIA AND SERBIA

The Study of Floods in 2014



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not only included significant human loss and material damage but also imply that mines were apparently moved with the mudslides and landslides towards Croatia and Serbia.

Sources

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DUŠAN PAVLOVIĆ, DAMIR KAPIDŽIĆ AND GORDAN BOSANAC

Appendix 2: Flood Protection Systems in the Precrisis Phase: The Cases of Serbia, Croatia, Bosnia and Herzegovina

Is a water crisis at least partly an institutional crisis? If natural disasters such as floods are unavoidable, can societal institutions, if acting in a timely manner, diminish the damage? What prevented the institutions from acting when a massive flood wave hit Croatia, Bosnia and Serbia in May 2014? We claim that institutional causes were partly responsible for the damage, especially the systemic neglect of water management and prevention mechanisms that were unprepared for an appropriate and timely reaction. We look into the three institutional designs and find several causes for the flawed institutional arrangement: clientelism and underinvestment in flood prevention system, the detachment of civil and military protection systems and the complexity of institutional design.

Keywords: disaster response, flood control, institutional design

Introduction

The May floods were a natural disaster, a result of a cyclone formed over approximately 40 000 km² of European territory. River torrents, its most disastrous consequence, were strong but predictable. Floods are common in the Balkan territory. It has 11 500 registered torrential streams (Ristić, 2014, p. 23). It is, however, a commonplace to state that floods cannot be stopped and protection can never be total.¹ Nevertheless, could some of the damage have been lessened or avoided? Yes, but only if the prevention system was prepared and institutions acted in a timely way. The damage inflicted by the 2014 torrent floods could have been less disruptive if the

1 See http://ec.europa.eu/environment/water/flood_risk/pdf/flooding_bestpractice.pdf.

protective system had been maintained over the previous 25 years and if pre-emptive measures had been duly undertaken (Ristić, 2014, p. 23). Why were they not? In what state were these institutions in the early May 2014, when the floods hit their territories?

Flood protection institutions are public goods. Such goods are financed by taxes and contributions. If taxes are used for some other purposes, public goods will not be supplied.² Previous research has showed that the reason for this in postcommunist countries might be a clientelistic form of government that drains resources away from public good institutions to private use (Kitschelt and Wilkinson 2007; Kopecký, Mair and Spirova, 2012; Stokes and Dunning, 2013). This kind of distribution may diminish the institutional resources for flood protection, thus leaving the population at the mercy of nature.

In all three countries, prior to May 2014, the flawed institutional design was a consequence of a decades-long neglect. This was most prominent in Serbia, with which we begin the analysis. We show that the Serbian prevention system was neglected by a decade of underinvestment, which led to inadequate reaction in an attempt to defend the town of Obrenovac on 16 May 2014.³ The case of Croatia provides additional context-specific reasons for the neglect. The Croatian civil protection system operated for a long time jointly with the military and police institutions. When the two systems were separated in 2004, civil protection remained neglected. We see that, in the Croatian case, legacies matter critically: once the army support was gone, what remained was almost entirely neglected by the state. In Bosnia, we observe another reason for malfunctioning of institutions, namely the institutional complexity that stems from the 1995 Dayton agreement. Bosnian institutional design was rather convoluted, which was one of the major reasons for institutions' failure to act in a timely way. Most relevant institutions were compartmentalized in three separate entities, which prevented their efficient cooperation. As in Croatia, the institution that was most trusted and managed to protect citizens and property efficiently during the May 2014

2 As known from the public choice theory, a public good is subject to free riding – if the government does not want to provide a public good, nobody else will (Rosen and Gayer, 2009; Wheelan 2011; Peters, 2015; Holcombe, 2016).

3 The responsible institutions did not act in a timely way and could not provide the tools nor manpower necessary to protect the town. See Chapter 2 in this volume.

floods was the army, an institution that was not compartmentalized but rather acted jointly over the whole territory of Bosnia. In the following three sections, we describe underinvestment in flood-protection system in Serbia, historical ties between the civil water management system and the army in Croatia and the complexity of the institutional design in Bosnia.

Serbia: Neglected Institutions

The flood that hit Serbia in May 2014 was unlike anything that had been experienced for 120 years. It affected 22% of the population and caused damage of 1.7 billion euros (4.8% of the country's GDP). Natural disasters cannot be avoided, but the damage from such disasters can be reduced if effective institutional design is in place. In the Serbian case the institutions were in place but were rather ineffective. We will first describe the institutional design for flood protection, show the level of spending before the May floods and try to explain why – despite the existence of disaster-prevention mechanisms – the system failed to lessen the damage from the May floods.

Standing Institutions

The Serbian flood prevention system is laid out in the 2009 Emergency Situations Law. The institutional structure involves several different standing bodies⁴ that are interconnected through a chain of command (Figure 2.1).

4 The standing institutions are those bodies that are active even when they have no disaster to take care of. These are parts of the Serbian public sector whose positions are formally filled by public competition. In practice they are often filled as a result of political ties.

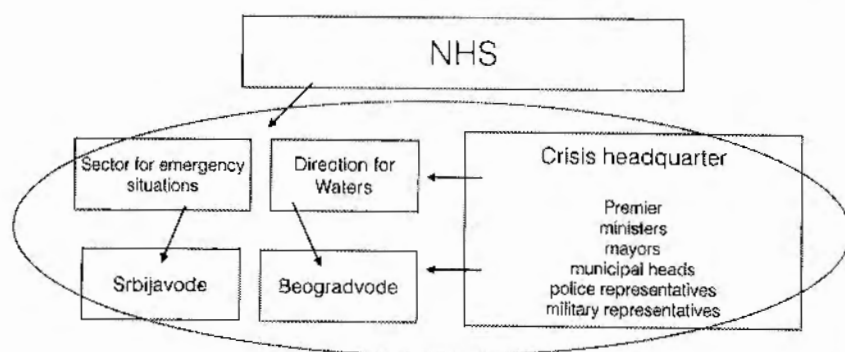


Figure 2.1 Serbia: Institutional design for protection against floods in May 2014.

Water management is in the hands of the Ministry of Agriculture and Environment Protection, which, manages the watercourses via the Direction for Waters. The Direction is responsible for formulating water management policies and communicating them to Srbijavode, Vojvodinavode and Beogradvode, the three public water companies that deal with the maintenance of waterways and flood prevention system on the ground. Their main task is the general care of the waterways (rivers) and the water environment. Beogradvode (established in 1952) is in charge of water management system in the Belgrade area, also covering flood protection and irrigation system along the Sava and Danube rivers. Beogradvode oversees and maintains “527 kilometers of river levees, 1784 kilometers of reclamation canals, and 33 pumping stations” (Bjelić and Lazarević, 2016, p. 47). Beogradvode’s most important task includes the protection of the population and property from any kind of water threat, including floods. It is supposed to produce a more exact assessment of the risk of floods based on mathematical models,⁵ and organize municipal emergency headquarters accordingly. After assessing the risk of flood, Beogradvode is responsible for supplying the equipment for protection and the organization of the protection of people and property.

All three companies are financed from water and concession fees and other nonbudget sources (donations, credits, aid). However, most funding comes from the budget of Republic of Serbia. Srbijavode’s revenue in 2013 was around 5 million euros, most of which is financed from the

⁵ An example of such a model can be found in Dorđević and Dašić (2015).

budget.⁶ Vojvodinavode’s revenue for 2014 amounted to around 35 million euros and some 30 million euros come from the state budget.⁷ Beogradvode’s annual revenue is 3 million euros and it mainly comes from the state budget.⁸ Srbijavode’s financial reports clearly suggest that the level of spending decreased from 2006 to 2016. (Figure 2.2)

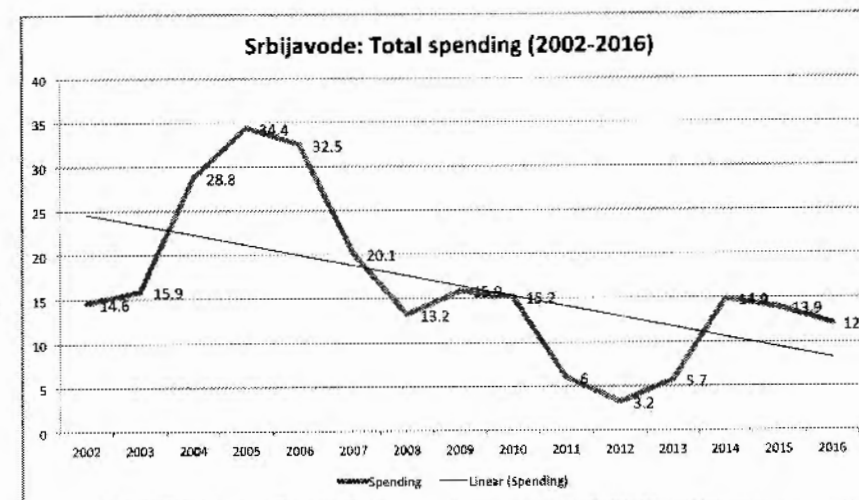


Figure 2.2 Srbijavode, total spending 2002–2016.

Source: Bjelić and Lazarević (2016) and Srbijavode financial reports (2013–2016).

There is the second part of the standing institutions mechanism. The National Hydrometeorological Service (NHS) is tasked to alert the general public about weather conditions. The NHS’s weather forecasts are public but are also sent directly to various other bodies and institutions, most important of which is the Sector for Emergency Situations. It is a standing body of the Ministry of Interior tasked to alert other subordinate bodies,

⁶ Srbijavode’s financial statements can be accessed at: http://www.srbijavode.rs/sr-latin/home/programi_i_izvestaji/izvestaji.html (accessed 2 September 2017).

⁷ Voda Vojvodine’s financial statements for 2014 can be accessed at: http://www.vodevojvodine.com/Content/uploads/Reports/Izvestaj%20revizora%20za%202014_6721.pdf (accessed 2 September 2017).

⁸ It was not possible to find Beogradvode’s financial report online. This information comes from the UNDP study (Bjelić and Lazarević, 2016).

depending on the kind of emergency situation it is faced with.⁹ As heavy rainfalls and floods were expected in mid-May, the Sector was supposed to alert Srbijavode, Vojvodinavode and Beogradvode.¹⁰ During the May floods, this part of the protection system functioned well.

Ad Hoc Institutions

Apart from the standing institutions, there are ad hoc political institutions called crisis headquarters, created to coordinate the standing bodies and public administration, local municipalities, cities and state bodies (right panel on Figure 2.1). The ad hoc institutions are formed only if the problem grows large. Otherwise, the problem is dealt with by the standing institutions described above. Depending on the scope of the problem, the crisis headquarters brings together the representatives of standing institutions (the Sector for Emergency Situations, Direction for Water and Srbijavode, Vojvodinavode and Beogradvode), the representatives of local municipalities (heads and mayors of municipalities and cities) and the members of the Serbian cabinet (ministers and the Prime Minister), creating the Belgrade crisis headquarter and the national crisis headquarter (Figure 2.1).

As we can see, the institutional design was in place. Why did this system fail to alert the people of Obrenovac before 16 May, when even on 9 May everyone already knew that a huge amount of rainfall was expected?¹¹ The town of Obrenovac does not appear to have been indefensible. When in 1981 Obrenovac was hit by a similar flood, the town was salvaged by swift and efficient action from the municipal officials and the civil service. During the 1981 flood, a total of 20 km² was flooded and around 900 houses and buildings were destroyed or damaged. In 2014, 2300 km² of land was under the water and around 7000 houses and buildings were destroyed and damaged. The difference is significant and the 1981 data shows that Obrenovac could have been protected if adequate protection measures had been undertaken in a timely manner. Života Stanojević, the head of the Obrenovac municipality in 1981, managed to mobilize the whole system that prevented the water from entering the downtown. He stated:

9 Direction for Waters is responsible for designing and maintaining the hydro-protection system during nonflood periods. We omit it from the analysis.

10 Vode in Serbian, Croatian and Bosnian means "waters".

11 See the Appendix 1 to this book.

We had thousands of sandbags and shovels, with which we managed to protect the wider central area so that the water does not get in the town. We had the essential support from civil defence service as well as from the police and the military. I mobilized 13 000 people within only few hours. The system worked. In 2014, there was no system, no people, no equipment no plan, no nothing. These people had no idea what to do. Even if they had, they would not be able to do anything! (Interview on 18 May 2016)

The Maintenance of the Waterways

Why did the system fail to act? Some failures can be found in the current legislation. The Law on Waters (2009) appears to be insufficient in at least two aspects. It recognizes only river floods, even though there are several other types of floods such as urban, coastal, tidal and torrential floods. The Law on Waters does not recognize torrential floods. Whereas river floods are slow forming and thus leave some time to act, torrential floods, in contrast, are quick forming, thus leaving no time to resort to the protection mechanisms. The law differentiates between first- and second-order rivers (which is essentially a difference between larger and smaller rivers). It states that the flood-protection system related to the river of the second order is the responsibility of local municipalities – but the municipalities have no resources to take care of the second-order rivers (Ristić, 2014, p. 25). For instance, inspection of the budget of the Obrenovac municipality for 2013–2015 showed that there were no funds allocated for flood protection.

A flood is not merely a product of the rainfall per square metre, as commonsense suggests. The garbage that goes down into the rivers during the rain or storm can significantly worsen the situation. If the river's surrounding environment is not properly maintained and cleaned, the rain will erode the ground, break trees and make rocks and garbage slide down into the stream, thus pushing the water level up. Obviously, the maintenance of river basins is a public good, which by definition has to be supplied by the government. In the past, the Yugoslav state took care of this issue by financing several local public companies through the main body named Erosion (Erozija).¹² After its privatization, no other maintenance measures were taken. In order to build a strong institutional protective

12 <http://www.kolubarske.rs/sr/vesti/vajjevo/28/Spasili-nas-uredeno-korito-Kolubare-i-brana-„Rovni“.htm> (accessed 2 September 2017).

system, such companies should again become public and return to budget financing (Ristić, 2014, p. 25).

The example of Obrenovac illustrates how the lack of river-basin maintenance of the two surrounding rivers Kolubara and Tamnava and the neglected treatment of the protection mechanisms that already existed can have devastating effects during and after the flooding. Moreover, the same neglect can be found in the maintenance of the protection system around the Obrenovac area. On 15 May, Kolubara entered the municipality of Obrenovac and flooded Poljane and Veliko Polje, two villages 7 km away from downtown Obrenovac. Veliko Polje is known for having a large dam called the Čikovac Embankment (Čikovački nasip) built in the 1960s and then renovated in 1981, after Obrenovac was heavily hit by floods. The embankment was regarded as the second line of the Obrenovac defence. It used to be guarded and no traffic was allowed. Today, the dam can be walked over by people and cattle and driven over by tractors. In the late afternoon on 15 May the Čikovac embankment was simply wrecked by the torrent from the Kolubara river.

There are more examples of underinvestment, institutional neglect and the abuse of public goods. Kolubara is known to be a "rainy-snowy river", meaning that its water level is determined by rainfalls and snowmelts during springtime. This is why, in communist Yugoslavia (1969), the local administration constructed a massive pond in the vicinity of the Valjevo town and erected a dam called Stubo-Rovni, which was designed to collect up to 50 million cubic of river water as a first line of defence when the Kolubara river swells.¹³ Nonetheless, during the May floods it gathered only 5–7 million cubic of the Kolubara river. The curious fact is that the dam was never finished and maintained because its activation would have flooded the church Archangel Mikhail (built in the thirteenth century), located in the valley that is supposed to serve as a massive natural water collector. After the May floods, the government requested the permission from the Serbian Orthodox Church to flood that church. The Patriarch himself accepted it only in March 2016, when the dam was activated and the church was already flooded.¹⁴ The case of Stubo-Rovni is a

13 Data on the dam: <http://www.stubo-rovni.rs/krsv-stubo-rovni/> (accessed 2 September 2017).

14 The Church and the government agreed that the government would build another church near Valjevo. See <http://www.novosti.rs/vesti/srbija.73.html:596123-Valjevo-Crkva-odobrila-potop> (accessed 2 September 2017).

good example of a systematic institutional negligence, which is characteristic of the Serbian flood protection system.¹⁵

Mladen Kostić, geodetic engineer believed that the dam could not save Obrenovac, although it could have saved Valjevo (Interview on 10 June 2016). If not for the dam, Valjevo would have been totally flooded and would have most likely experienced the fate of Obrenovac.¹⁶ If the dam had been active and operated at its full capacity throughout the whole time, however, the amount of water collection would most likely have saved the city of Lajkovac, Lazarevac and perhaps the wider area of Obrenovac.¹⁷

The Wrong Spending Patterns?

As the Obrenovac case demonstrates, in the 1980s the system was apparently able to defend itself because it was well equipped both in terms of material resources and manpower. Public resources were invested in public good institutions such as the flood protection system and made them efficient. With time, however, the robustness of prevention institutions diminished. The average spending for flood prevention in Serbia was 35–40 million euros annually over a ten-year period. As Figure 2.2 shows, the available funds were declining and were barely sufficient to cover the existing flood prevention structure with some new work. Available funds did not suffice to cover the maintenance and monitoring of dam's stability. The Serbian government did not make any large-scale investment in flood protection and water management in the decade before the floods (Bjelić and Lazarević, 2016, p. 7). The ownership issue also appears a separate problem for dam maintenance (Bjelić and Lazarević, 2016, p. 49). Spending on the risk management system was hardly enough to cover its maintenance. The flood-protection system was mainly left to rely on natural retention areas. Most reconstruction work that was started during communist times was not finished after the 1991 breakup of former Yugoslavia (Bjelić and Lazarević, 2016, p. 47).

15 A similar example is the Paljuve Viš dam. This dam was given to local anglers who have been keeping it half-full all the time to use it for fishing.

16 See <http://www.kolubarske.rs/sr/vesti/valjevo/28/Spasili-nas-uredeno-korito-Kolubare-i-brana-Rovni.htm> (accessed 2 September 2017).

17 See *Vreme*, no. 1220 (22 May 2014), <http://www.vreme.com/cms/view.php?id=1198944> (accessed 2 September 2017).

How much more should Serbia invest to make the existing system functional? One estimation can be found in the UNDP study, which claims that

municipalities belonging to the Kolubara river basin sustained damages of over 900 million euros in the floods of May 2014. Discussions with experts have led to preliminary estimates that investments in infrastructure in the range of 110 million euros would be sufficient to protect the Kolubara river basin from the risk of floods. If we compare the figure of needed investment to damages of over 900 million euros in 2014 alone, we can clearly see the benefits of investing in prevention. (Bjelić and Lazarević, 2016, p. 48)

According to Ratko Ristić (Ristić, 2014), Serbia needed about 90 million euros a year to invest in the flood prevention system over ten years to refurbish the system and bring it back to a state of optimal efficiency. The current spending levels for Serbia, however, show that this is difficult to expect in the near future.

Croatia: Nothing Without the Military

In 2004 Croatian Parliament adopted the Act on Protection and Rescue (*Zakon o zaštiti i spašavanju*), which for the first time separated civil protection mechanisms from the military and police. Civil protection in Croatia was traditionally developed during the period of Yugoslavia (1945–1990), primarily through the Ministry of Defence. The Yugoslav People's Army had a strong civil protection unit, which was preparing civilians predominantly for a state of war and natural disasters (such as earthquakes or floods). The system was well organized across Yugoslavia and it was integrated within the military. This led to many prejudices regarding the civil protection concept after the independence of Croatia in 1991. Civil protection was neglected and marginalized as a discipline within state institutions. "We have inherited one civilian protection concept from Yugoslavia. And the reform of this concept took too long. First we had civil protection within the military, then within the police and then finally in 2004 the new state body National Protection and Rescue Directorate was established" claims Mr Jadran Perinić, current director of Državna uprava za zaštitu i

spašavanje (National Protection and Rescue Directorate) – DUZS (Interview with Jadran Perinić, July 12 2016, Zagreb).

This transition can be also spotted at the semiotic level. The expression "civil protection" was reworded as "rescue and protection". Even in 2004, when the first relevant Act was adopted, it was named the Act on Protection and Rescue, rather than the Act on the Civil Protection System (*Zakon o sustavu civilne zaštite*), which would be adopted 11 years later, one year after the floods in Croatia.¹⁸ Later in the presentation of legal framework we shall see how Croatia took a long time to reorganize its civil protection system. An open question is whether Croatia could have responded to the flood crisis even better if the system had been reorganized before the floods hit Croatia.

Croatia experienced a military conflict in 1991–1995 and the development of legislation and institutions responsible for crisis management has been slow. Apart from the negative political perception of civil protection as a *legacy from the former regime* one has to also take into account how the Croatian military played a dominant role in security/crisis-related issues. Together with the police, the military was perceived, and still is perceived, as a key organization that can intervene efficiently when a big crisis occurs – regardless of whether it is about armed conflict or natural disaster. "When the military came to our flooded municipality, we knew we are saved" – said Mr Lucić, head of Gunja municipality, which was heavily destroyed by the flood (Interview with Hrvoje Lucić, July 18 2016, Gunja). This strong position of the military within the crisis management system is not surprising. The Croatian military, due to its role in recent war, enjoys much respect with the majority of the Croatian population (Institut društvenih znanosti "Ivo Pilar", 2016). The military has also been one of the institutions that has received financial investment and numerous reforms (Dreisbach, 2016). This was not the case with civil protection system.

18 "We have changed the meaning of civil protection and reduced this concept to protection and rescue only. But protection and rescue are only some of the functions within the civil protection concept. We have changed that because we wanted to pretend to be more clever and different from the others. We also wanted to send the message, this is now Croatia and this approach has nothing to do with our past in socialism. Civil protection was invented by communists and we will do it better. That was a wrong approach" – claims Mr Robert Mikac, head of civil protection during the 2014 floods in Croatia (Interview with Robert Mikac, 14 July 2016, Zagreb).

A more systematic approach towards crisis management in Croatia started in 2004 when the first Act on Protection and Rescue was adopted. This central Act established the DUZS, the central state institution responsible for disaster management. For the first time civil crisis management was separated from military and police structures. This Act recognized the following operational forces: the Protection and Rescue Headquarters at the local, regional and state level; firefighting units and civil protection brigades units, and other state administration bodies who deal with protection and rescue (such as medical first aid, mountain rescue service, red cross etc.). The Act also defines models of cooperation between the DUZS and the Ministry of Defence and the Ministry of the Interior.

The DUZS has its regional offices from local (county) to national level. The chain of command is well recognized within the Act and can be activated from local to national level. Depending on the scope of the crisis, responsibility shifts from the local head of the municipality/city mayor, to the head of county up to the director of DUZS and the government representative (also depending on the geographical scope of the crisis). Local municipality/county heads are also head commanders at the local level in a time of crisis and they are obliged to develop threat assessments at the local level and protection and rescue plans. Local government units are responsible for ensuring a budget for rescue and protection operations at the local level.¹⁹ According to the Act, the government, on the proposal of the director of DUZS, proclaims catastrophe. When a catastrophe is declared, the DUZS takes over all coordination, protection and rescue operations.

One year after the floods, the APR was changed. The new Act on the Civil Protection System was adopted on 10 July 2015. This Act conceptually changed the overall framework for disaster management in Croatia.²⁰ Apart from APR, the disaster management is also partially regulated by the Act on Protection from Fire (*Zakon o zaštiti od požara*) and the Act on Protection from Natural Disasters (*Zakon o zaštiti od elementarnih nepogoda*). The latter regulates procedures related to the declaration of natural disaster and financial burdens for recovery and reconstructions on local and national level. However, this Act appeared insufficient when it came to responding efficiently to the flood catastrophe. This is partially why

19 In another piece in this volume, we shall see how some of the weakest points in governing of floods were related to the command on the local level and the lack of financial and other resources (Chapter 2 in this volume).

20 More on disaster management in practice (see Chapter 2).

Croatian government proposed – and the Parliament adopted on 13 July 2014 (two months after the floods) – an Act on Recovery from the Consequences of Disaster in the Vukovar-Srijem County (*Zakon o saniranju posljedica katastrofe na području Vukovarsko-srijemske županije*), which enabled more efficient and faster recovery.

Apart from the DUZS as a central institution for disaster management, there are two more institutions relevant for crisis management. The first is Državni hidrometeorološki zavod (DHMZ) (State Meteorological and Hydrological Service) and second is Hrvatske vode (Croatian waters), the national company responsible for monitoring the water levels, raising the alarm if necessary, and water management in general (Figure 2.3). The DHMZ has a duty to alert Hrvatske vode and DUZS on potential critical weather conditions on time. Hrvatske vode implements defence from floods on 34 different territorial units. It also defines different degrees of defence from floods, defence measures and so forth. The State Plan for Flood Defence, adopted by the Croatian government, regulates their work related to the defence from floods.

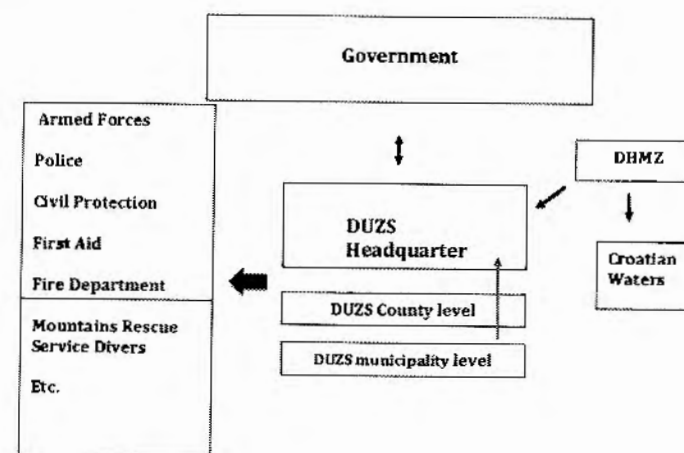


Figure 2.3 Croatia: institutional design for the protection against the flood in May 2014.

To sum up, the most important development within the institutional design was separation of the disaster management sector from the military and police sector in 2004. However, this has also left the crisis and disaster management system on the margins – in the shadow of security institutions such as police and military. It is not surprising, then, that one relatively

neglected system could not respond efficiently in a time of extraordinary disaster, such as the floods in May 2014.

Bosnia and Herzegovina: Complex Multilevel Governance: Institutional and Normative Aspects of Crisis Management

In Bosnia and Herzegovina (BiH) we can identify a systemic disregard for flood management and crisis response since the early 1980s, both in terms of equipment and education. Yet, in BiH we can see another phenomenon related to the decentralization of the political system. Arguably, flood management in Serbia and Croatia is more centralized than in BiH, where an extremely decentralized flood management system mirrors the multilevel governance structure of the country. Such a setting is likely to engender noninstitutional and informal politics that are frequently employed as a coping strategy by actors in complex multilevel governance systems (Reh, 2012).

The political system of BiH is extremely complex and this complexity is reflected through existing crisis-governance mechanisms, especially in relation to flood management. In a highly decentralized system, responsibilities for crisis mitigation (evaluating risk, public education and flood-control infrastructure), preparedness (emergency planning, predicting and monitoring weather patterns and river levels), response and rescue operations (people, assets and infrastructure) and recovery (cleanup and restoration) are shared among governments and agencies at the state level (BiH), the entity level (Federation of Bosnia and Herzegovina–FBiH, Republika Srpska–RS and Brčko District), in the ten cantons within FBiH and in the individual municipalities. Not all responsibilities are clearly defined and there is an overlap as well as a lack of governing authority. In addition, administrative boundaries do not take into account the hydrological configuration of the country, resulting in river basins being managed under different legislation. Institutions within three distinct governance sectors were involved in crisis management during the 2014 floods: hydro-meteorological institutes, water-management agencies and civil protection institutions (search and rescue, including armed forces). A list of the main institutions in BiH flood crisis governance is shown in Table 2.1.

Table 2.1 State institutions involved in flood crisis management in BiH. Note: key institutions in bold.

Level of government	Water management institutions (mitigation, preparedness, response)	Meteorological institutions (mitigation, preparedness)	Civil protection and rescue institutions (preparedness, response, recovery)
BiH (state level)	Ministry of Foreign Trade and Economic Relations: Sector for Natural Resources, Energy and Environment (Department for Water Resources) Ministry of Communications and Transport: Sector for Transport (Department for Air, Water and Pipeline Transport)	Ministry of Civil Affairs: Sector for Geodesy, Geology and Meteorology	Ministry of Security: Sector for Protection and Rescue (Operational Communication Center-112) Ministry of Defence: BiH Armed Forces
Entities (FBiH)	Agency for the Sava river basin Agency for the Adriatic Sea river basin Entity government through the Ministry of Agriculture, Water Management and Forestry	Federal Hydro-meteorological Institute BiH	Federal Department of Civil Protection
Entities (RS)	Public Agency "Waters of Srpska" Entity government through the Ministry of Agriculture, Forestry and Water Management	Ministry of Agriculture, Forestry and Water Management: Republic Hydro-meteorological Institute	Ministry of Interior: Republic Department of Civil Protection
Entities (D.Brčko)	District government	/	District government: Civil Protection Unit
Cantons (10 in FBiH)	Cantonal governments (varying ministries)	/	Departments of civil protection in the individual cantons
Municipalities and cities (143: 79 in FBiH and 64 in RS)	Municipal governments	/	Municipal departments of civil protection

The state-level government of BiH has almost no authority over meteorological services or water governance, including flood management, and only limited authority over civilian protection and rescue. Almost all governance authority is divided between the two entities, FBiH and RS, where the state level does not even have a coordinative role (Bosna i Hercegovina, 2008). State institutions act on behalf of the entities as signatories of international conventions and agreements on hydrology and meteorology but do not implement them. The BiH armed forces, acting under the Ministry of Defence, can assist in rescue operations on the ground, acting upon request by local and entity civil protection units. The Sector for Protection and Rescue of the Ministry of Security runs the state-level Operational Communication Center-112, which identifies needs within BiH, coordinating the delivery of protection and rescue services, including the BiH armed forces. The Ministry of Security is also solely responsible for international coordination and cooperation, including requesting and allocating international assistance in crisis situations (BiH, 2011). Inexplicably, state-level government has no standing body responsible for complex coordination between entity structures regarding water management and flood control.²¹

The entity level is undoubtedly the most relevant level of governance in relation to all aspects of water management and civil protection, but institutional structures differ significantly in FBiH and RS (FBiH, 2006; FBiH, 2010a; RS, 2002; RS, 2006; RS, 2012a; RS, 2012b). The river-level monitoring and flood alert structures in FBiH are much more decentralized than in RS. In FBiH the Federal Hydrometeorological Institute functions as a semi-independent institution providing meteorological services, monitoring weather conditions and precipitation and creating forecasts. The Institute also monitors river levels but has a very limited network of six monitoring stations spread across FBiH, which do not enable it to make predictions or issue flood warnings. Most monitoring of river levels in FBiH is done by the entity's two water-management agencies. The Institute is required to share its meteorological and hydrological data with other agencies and institutions and cooperate with institutions in RS.

21 The entities have signed several memorandums of understanding (MOU) on water management in order to regulate cooperation by expressing their intention to work together in predefined ways. However, the MOUs are not binding and have not proven effective, even though the legal aspects of water management have become more harmonized across BiH (Bogdanović, 2014, pp. 369–378).

The Republic Hydrometeorological Institute in RS operates as part of the government and is responsible for monitoring and predicting weather but is also the main institution collecting data on river levels. It operates 13 measurement stations in RS and pools the hydrological data before forwarding it to the single RS water-management agency.²² Although the two entity institutes cooperate and share information to some degree, river-level data in FBiH is mostly collected and managed by two river-basin agencies, with which the RS institute does not officially coordinate and vice versa. No structures anticipated the 2014 flooding, nor did they alert crisis management and rescue institutions on time.

Water management in BiH is performed by three independent agencies, two in FBiH, which cover the Sava river basin and Adriatic Sea rivers respectively and one for the whole RS. The current agencies are fairly recent institutions and have been active since 2008 in FBiH and 2013 in RS.²³ The agencies act autonomously but they are responsible to the entity governments, which supervise their work. In RS the water management agency is responsible for all rivers, excluding small and local flows. In FBiH the agencies are only responsible for a few designated "Category I" rivers and lakes, while medium-sized and small flows are the responsibility of individual cantons. The agencies play a very important role in crisis mitigation and response. They are responsible for constructing and maintaining all embankments, flood canals, pumping stations and other flood control infrastructure but only a few sections of BiH rivers have infrastructure in place (FBiH, 2010b).

In the postwar period there has been a heavy reliance on irregularly maintained existing flood control infrastructure, while construction of new infrastructure has not been seen as a priority investment. All agencies collect mainly water-usage fees, which are a significant source of income.²⁴ These funds should be used to maintain a sustainable water system and to strengthen flood control infrastructure. As mentioned, the FBiH agencies also collect data for river levels in that entity, currently operating a large

22 The number of measurement stations in 2014 was 11.

23 They succeeded the single water management institution of socialist BiH and various postwar institutions.

24 The distribution of these funds among levels of government is defined in detail by law in FBiH, while the RS government adopts yearly plans regarding the distribution of funds.

network of measurement stations.²⁵ This data is fed into each of the two FBiH agencies' water information systems, along with data from the Federal Hydrometeorological Institute.

The RS agency also maintains such a system with data coming from the Republic Hydrometeorological Institute (RS, 2013). Data can be accessed by local authorities, FBiH and RS institutions but the procedure for doing this is not clear, although basic data are available online. Under both entity laws, the hydrometeorological institutes and agencies combined are responsible for monitoring water levels and issuing warnings on imminent flooding. The FBiH agencies have another important role in crisis response, as the agency directors are the designated individuals responsible for declaring a state of flood emergency and coordinating the crisis response (excluding rescue). Yet this responsibility is limited only to certain sections of "Category I" rivers²⁶ and it is not fully clear who is responsible for flood management in nondesignated sections of these rivers. During the 2014, large parts of the flooded areas in FBiH, amongst them Maglaj municipality, were not in the responsibility of the FBiH Agencies (FBiH, 2011).

The FBiH agencies also have a coordinative role among and between cantons and the FBiH government, both in regard to policy and crisis mitigation and response. Individual cantons are responsible for water and flood management along "Category II" rivers but only a few of them have jurisdiction in place regulating this area (ZDK, 2012). The operational tasks of water management are mostly referred to the municipalities, which have limited resources and little know how (FBiH, 2009). Flooding risk maps for smaller rivers at the canton level were not available and for the most part are still do not exist.

All this creates a much more complex system of governing authorities in FBiH and shortcomings were identified by both FBiH Agencies (Jabučar, 2013), with no mechanism in place to handle urgent situations. Such complexity can lead to lack of communication, mistakes and reliance on informality, all of which happened during the 2014 floods. At the

25 The network is 86 measurement stations in total, 72 for the Sava basin and 14 for the Adriatic Sea basin, also on rivers that are the responsibility of cantons and municipalities. The number of measurement stations in 2014 was lower.

26 As defined in the Federal Operational Flood Defence Plans (FBiH, 2011; FBiH, 2015). This has since been amended and the AVP Sava and AVP Jadran now cover most of the populated river sections in FBiH.

same time the RS agency has little direct responsibility in relation to flood events and the entity government takes most decisions, while the role of municipalities remains limited (RS, 2015).

Response and rescue operations to secure people, assets and infrastructure are carried out by an array of civil protection institutions, which operate at all levels of government. Civil protection departments are permanent institutions involved in crisis preparedness, training and equipment, while temporary civil protection headquarters are established as professional response commands consisting of chiefs of relevant response institutions (civil protection departments, fire department, hospital, utility companies, municipal mayor). The function of the headquarters is to coordinate crisis response and communicate with other institutions and levels of government efficiently and effectively. Most civil protection starts at the municipal or city level as a first-response institution and is equipped to deal with minor crisis. Municipal civil protection departments are instructed to devise a rescue response plan for all potential threats at the local level (FBiH, 2009).

Maglaj, Doboj and Šamac, the three localities that were most severely hit, had response plans in place but none of them included flooding of the magnitude seen in 2014 (Muhić, 2015). The response plan in Maglaj did not even include flooding as a serious threat at all. Civil protection headquarters were established in all three places, but were unable to perform their tasks.

In FBiH, the cantonal level of civil protection also consists of permanent agencies and temporary headquarters. The cantonal civil protection agency also includes specialized rescue units, such as water rescue, which are lacking in some municipalities, and is tasked with training municipal response units and making sure they are properly equipped. The entity level of civil protection is the best equipped and is meant to deal with complex and extensive crisis situations. The Federal Department of Civil Protection in FBiH acts autonomously and is responsible to the entity government, whereas the RS Republic Department of Civil Protection is part of the Ministry of Interior. Both departments maintain a crisis operational centre for coordinating responses among multiple actors and preparing threat assessments for the entities (RS, 2013). While the entity departments are supposed to communicate and coordinate among each other this rarely happens under crisis circumstances. Each level of civil protection can call on the relevant level of government to declare a state of

emergency. Under a state of emergency, the civil protection headquarters can call upon any means necessary to carry out a crisis rescue.

Governments at each level of BiH's decentralized political system share competences and responsibilities regarding water and flood management. Entity governments are most relevant, whereas the state level is least important. The entity governments in FBiH and RS pass major water laws and water-management strategies; they adopt crisis plans and risk assessments; allocate budgets to increase preparedness; they are responsible for overall crisis response coordination and work through entity agencies, departments and other institutions to perform these tasks. The most relevant documents adopted at entity level are the water laws (FBiH, 2006; RS, 2006), laws on protection and rescue (FBiH, 2010a; RS, 2012a) and flood protection plans (FBiH, 2011; RS, 2014; RS 2016).²⁷ The RS government is able to act in a much more direct manner, centralizing all decision making into one body, while the FBiH government needs to coordinate much of its policies with the cantons, which slows down decision making. The RS governance system is more agile but also extremely dependent on the capacity and competences of the current government and its attitude towards opposition-led municipalities and FBiH institutions. This is especially true because most RS institutions that deal with flood management are under direct supervision of the government. FBiH governance is sluggish and requires an additional layer of coordination, but designated flood management institutions can act swiftly since they are independent. Additionally, the cantonal and especially municipal/city governments in both entities perform much of the daily tasks independently, which adds another layer of resilience, if they are well prepared and equipped. Cantons make their own crisis plans on flooding, with a focus on "Category II" (local) rivers (the FBiH plan only deals with "Category I" waters) but there is little coordination between crisis plans at the cantonal and federal level (Deronja *et al.*, 2015; Centar za sigurnosne studije BiH, 2010). Municipalities in FBiH and RS are required to do much of the mitigation, but are poorly equipped and inadequately financed to complete larger tasks without assistance (Muhić, 2015).

²⁷ Adopted annually in RS (RS, 2014; RS, 2016), but as permanent, periodically updated plans in FBiH (FBiH, 2011; FBiH, 2015).

Conclusions

This analysis has shown that flood-protecting institutional design was mainly ill prepared for the flood that hit the Western Balkans in May 2014. The reasons for this lack of preparedness were long-time underinvestment in public services in Serbia, detachment of the flood prevention institutions from the army and the police in Croatia and a complex system with no clear chain of command in Bosnia.

In the Serbian context, what comes to the fore is also the vague legal framework, the shortsighted, neglectful treatment of existing protection mechanisms, such as dams, and the systematic reduction in investment including the maintenance of river-basin management. Three years after the disaster, there was still no access to Beogradvode's financial statements to check what happened after 2014 in this sense. If Srbijavode's total spending is any guide, we can conclude that 2014 flood made the Serbian government increase investment level for water management, while it is still difficult to tell how much accounts for flood prevention. Another fact is that as we move away from 2014, we can again observe a decline in spending.

In Croatia and Bosnia we observe some context-specific reasons for neglecting flood-protection institutions. In Croatia, civil flood protection depended on the army and the police. In other words, flood protection institutions were effective in communist Yugoslavia because they received essential support from the army and the police. Once the former was detached from the latter in 2004, the civil protection service was not able to function on its own. This confirms the thesis of historical institutionalism that legacies matter and institutions are path dependent.

In Bosnia, the 1995 Dayton Agreement produced another context specific-reason for the malfunctioning of the flood protecting institutions. Institutionally, Bosnia is an extremely complex country in which no institution, save the Bosnian army, has a unified decision-making mechanism and chain of command, which is why only the armed forces managed to help the people efficiently in the whole territory of Bosnia.

What obviously needs to be done in the future is to increase the level of capital investment in all three cases, because flood-protection mechanisms, as a kind of public good, can only be provided by the state. The Bosnian case calls for a specific "investment" in designing a clear chain of

command that would avoid the complex, decentralized system of policy making established by the 1995 Dayton agreement. These are the tasks for future governments in Bosnia, Croatia and Serbia.

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