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# CRISIS GOVERNANCE IN BOSNIA AND HERZEGOVINA, CROATIA AND SERBIA

The Study of Floods in 2014



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## 2. Crisis Response in Bosnia and Herzegovina, Serbia and Croatia

The institutional design of crisis management in Bosnia and Herzegovina, Croatia and Serbia determined those countries' responses to the 2014 floods. In all three cases a weak institutional framework and deficient communication, coordination and cooperation severely limited the efficiency of crisis response. Even though the floods affected the broader region, there was no coordinated response between the countries. This was aggravated by the scale of the floods, the rareness of such an event – best described as a *black swan event* – and the lack of adequate measures to prepare for such an occurrence. The resulting patchwork of institutional responses had its own deficiencies and faults. We identify three common issues: a prevalent lack of effective communication between response actors and institutions through formal channels, a lack of substantial investment in water management and civil protection systems and the absence of responsibility after flooding. There were also differences between cases, especially regarding institutional learning and adaptation. Yet, the floods produced some insights at the strategic level of political officeholders, confirming bad governance in Southeast Europe.

**Keywords:** black swan events, Bosnia and Herzegovina, crisis management, crisis response, Croatia, flooding, governance, institutional learning, institutions, Serbia

### Introduction

Rivers often determine administrative boundaries but floods and natural disasters show no respect for different governance systems. The 2014 floods severely affected three countries that share many institutional similarities due to their common history and legacies. At the same time Bosnia and Herzegovina (BiH), Serbia and Croatia faced very different challenges related to the institutional design of crisis management. Institutional issues prevalent in each case study shaped the response to the floods.

Although it is possible to speak of a transboundary crisis, there was no coordinated response among countries. Crossborder communication and cooperation were very limited. This pattern of deficient communication was also evident within each country as different institutions and administrative levels communicated poorly in their crisis response. Yet, the importance of communication, coordination and collaboration for efficient crisis response is stressed in the literature (Boin and 't Hart, 2010).

We argue that a weak institutional framework in all three cases severely limited the crisis response. The institutional response to flooding happened within mostly isolated administrative areas, on a transnational, national and local level. Communication, coordination and cooperation between institutions and responders was deficient or nonexistent, leading to critical delays in crisis response. Moreover, regionally relevant patterns of institutional neglect, political infighting and patronage limited the efficiency of crisis response.

A second part of our argument concerns institutional and individual responses when faced with a *black swan event*. According to Taleb (2007), a black swan event is an unpredictable and unexpected event that can create significant damage. Its unpredictability is rooted in the belief that it is so rare that it will not occur during one's lifetime. The typical reasoning of public officials is that it will not happen on their watch or during their mandate. Therefore, institutions do not take precautionary measures against extreme events. Because it is viewed as an anomaly, a black swan event limits postcrisis learning and, instead, often results in a blame game or purposeful disregard for institutional change.

The black swan event in the form of massive floods in the three countries was caused by the cyclone Tamara between 13–18 May 2014. It brought the heaviest rain ever recorded in BiH and Serbia, by far surpassing all measurements of the previous 120 years and any modelled predictions.<sup>1</sup> In Croatia the extraordinary amount of rain that fell between 2–19 May was, according to the official data, equivalent to precipitation for the whole spring (Perčec and Tadić, 2014; Renko, 2014). Rivers like the Una, Vrbas, Bosna, Drina and Kolubara swelled rapidly, while the quantity of water kept the crest of the flood at a high level for longer than usual.

1 In BiH the heaviest rain was recorded in Tuzla – almost 25 cm during four days and 10 cm on 15 May alone (Agencija Republike Slovenije za okolje, 2014). The rainfall in preceding weeks had already saturated the ground and rain that fell between 13–18 May instantly turned to runoff and rapidly discharged into rivers.

Due to the extreme quantities of water, fast flooding in mountainous areas lasted longer, while floods in the lowlands moved faster.

In BiH, the black swan event was the flooding of the city and municipalities of Doboj, Maglaj and Šamac on 14 and 15 May. Officials were startled by the magnitude of the disaster, which led rescue units to try for days to respond amidst the complex institutional structure of the country. The Serbian black swan event occurred when the city of Obrenovac was unexpectedly flooded on 16 May. There was no permanent institution on alert to organize flood defence, rescue and evacuation, nor was there any adequate crisis-management action plan. As a result, the crisis response happened with considerable delay. The black swan event in Croatia was the breach of embankment near Rajevo Selo and Račinovci on 17 May. The civil protection system collapsed due to the decades-long deliberate neglect and lack of financial investments resulting from a negative public perception of civil protection as a “legacy of the former socialist regime”.

Crisis response was determined by individual country factors and institutions. It is therefore necessary to look at institutional responses from three individual national perspectives. While doing so we shall employ a comparative framework and reflect on the same common questions and issues. Each country study addresses the acute crisis response and postcrisis learning, while the Serbian case also investigates the actions of the main political actors. For this chapter, 30 individuals directly involved during the 2014 floods were interviewed, mostly senior officials and first responders.<sup>2</sup> Questions focused on local responses to flooding in Doboj, Maglaj, Šamac (all in BiH), Obrenovac (Serbia) and the Vukovar–Srijem County (Croatia), as well as postcrisis measures.

The following three sections present the three case studies, focusing on the crisis response in and around severely flooded areas. The case studies identify issues of deficient communication and coordination, institutional negligence, political infighting and patronage that limited the crisis response. Postcrisis institutional adaptation is found to have mostly resulted in fine tuning in BiH and to a more limited degree in Serbia and partial policy reform in Croatia (see Boin *et al.*, 2008, pp. 16–17). In the conclusion to this chapter we highlight similarities from a comparative perspective.

2 The interviews followed a semistructured questionnaire, which was identical for BiH, Serbia and Croatia. Some interviewees' names are withheld as to guarantee their workplace safety. In BiH, interviews and focus groups were conducted with 20 individuals in Doboj, Magla, Šamac, Sarajevo, Zenica and Bihać.

## Crisis Response in Bosnia and Herzegovina

Bosnia and Herzegovina has a highly decentralized system of governance, which is also reflected in its crisis governance, especially flood management. Multilevel coordination and cooperation in times of crisis is needed, as administrative boundaries do not consider the rivers and hydrology of the country. However, because of lingering ethnic and political animosity, as well as institutional neglect, such coordination was missing during the 2014 floods. Out of the three countries in this study, BiH was the first to experience severe flooding. The city of Doboj and municipalities of Maglaj and Šamac were completely and unexpectedly flooded on 14–16 May. While this was an unimaginable catastrophic event of severe magnitude, the institutional dysfunctionality and neglected flooding infrastructure aggravated crisis response substantially.

Several studies and academic papers have been written on crisis management during the floods. A study by Muhić (2015) comprehensively examines crisis management at the local level with a case study of Maglaj municipality, offering valuable empirical evidence. Agencija Republike Slovenije za okolije (2014) offers a comprehensive hydrological assessment. Other studies include those by Agić (2014) and Imamović (2015). In addition, three volumes of the journal *Voda i mi*, published by the AVP Sava water management agency in BiH, offers good insights from people involved in the floods (AVP Sava, 2014b, 2015, 2016). Nevertheless, many texts are heavy in technical detail and jargon; some offer only superficial analysis and almost all lack explicit policy advice.

### *Crisis Preparedness and Response in a Complex Multilevel Governance System*

Crisis mitigation and preparedness were low in 2014 across BiH.<sup>3</sup> The water-management agencies, which manage flooding infrastructure and river level information systems in both parts of the country (the entities Federation of BiH – FBiH and Republika Srpska – RS), were on alert from the beginning of May. The agencies are also supposed to exchange

3 For an overview of the institutions responsible for crisis management see Appendix 2.

information with the two state meteorological services in BiH but not even they anticipated the speed and intensity of the floods. Only fragmented and sketchy information was available once flooding started – not enough to make sound decisions on warning and evacuation (AVP Sava, 2014a). Many river-level monitoring stations were destroyed or incapacitated by torrential flooding.<sup>4</sup>

In RS there was a failure to communicate between institutions across entity lines and the water levels of the Bosna River in FBiH were not studied diligently. After the flood crisis, the missing coordination between water management agencies was identified as one of the noticeable deficiencies of flood management in BiH (AVP Sava, 2015). Crisis response institutions within the complex system were inadequately prepared for the scale of the flooding that followed.

### *Crisis Response in Maglaj Municipality*

The lack of preparedness and the shock at the scale of the crisis can best be exemplified in the case of Maglaj municipality (Muhić, 2015). Maglaj had never experienced heavy flooding and risk assessment prior to 2014 and did not expect serious threat (focus group, Maglaj, 28 June 2016; Interview with government advisor, Zenica, 27 July 2016). There was minimal flood control infrastructure in place and the civil protection services were unprepared. Following heavy rain on 13–14 May, water levels were high and the Maglaj Civil Protection Department (CZM) was on alert. During the day on 14 May, the CZM received an informal warning of an upcoming flood wave. The increase in water levels on the Bosna River was so rapid that the town was completely flooded within less than 7 hours and there was little time to react and mobilize crisis response. The civil protection headquarters was (inexplicably) not active after working hours while the town was flooded. On 14 May in Maglaj “work was as normal and we went home that afternoon after being in contact with officials in Zavidovići”, an upstream municipality (focus group, Maglaj, 28 June 2016). The Civil Protection Department, fire department, hospital, municipality and other buildings were flooded shortly before midnight on 14 May. All organized efforts to contain the floods were disbanded by then.

4 Sixteen out of then 84 measurement stations were destroyed.

Soon Maglaj suffered a rapid breakdown of infrastructure. Electricity failed hours after flooding started, along with the water supply. The mobile phone network was down shortly thereafter. "All communication systems fell apart as we relied on landlines and mobile phones and there was no backup option"; "it became impossible to communicate with citizens once power was down" (focus group, Maglaj, 28 June 2016). Field radios, walkie talkies and satellite phones were mentioned as crucially lacking and among the most needed equipment. The high water that reached Maglaj on 15 May, was more than 2 m above previous flood marks, incapacitating all municipal flood control and crisis-response infrastructure. As Maglaj lies in a narrow valley, water had nowhere to go but into populated areas. In town, water reached the second floors of most buildings and submerged all vehicles. A multiday lack of drinking water became a health concern.

Municipal rescue institutions were not equipped or trained to handle such a situation: "We did not have boots, shovels or sandbags, the basic equipment needed to deal with this, not to mention helicopters. The rubber boats we had were all leaking" (focus group, Maglaj, 28 June 2016). The medical response department had a rudimentary crisis plan in place and was able to organize a basic health service. Assistance from the cantonal and federal levels of government was dispatched next morning but was unable to get into town as roads had been blocked by landslides, thus delaying the response by almost 24 hours. The BiH armed forces began the evacuation of people trapped in flooded houses by helicopter on 15 May and private rafting operators joined the rescue operations.<sup>5</sup>

Two days after the town was flooded, rescue operations were still in disarray with urgent requests being managed directly by the rescue units on the ground. Citizens mostly were left to fend for themselves. On 15 May, with the city of Doboj flooding, the Council of Ministers (the BiH central government) requested international assistance as BiH institutions were not able to cope with the scale of rescue operations. Maglaj remained flooded until the morning of 17 May after which cleanup and recovery operations began, coordinated by the re-established civil protection headquarters.

Persistently low investments in flood prevention and preparedness, mostly due to budgetary constraints in underdeveloped municipalities such as Maglaj, resulted in a lack of equipment and trained personnel. In addition to outdated or nonexistent flood-risk assessments this led to the

<sup>5</sup> They were on the ground before official civil protection units from the canton or federal level, even though they came from further away, from the town of Konjic.

2014 disaster taking all affected by surprise with no ability to respond adequately. For example, there was no operative communication equipment and civil protection was not able to function on 15–16 May (focus group, Maglaj, 28 June 2016).

The rescue operations around Maglaj, which were already overextended, were additionally hampered by informal communication coupled with political favouritism. Well-connected individuals with ties to government, police or the military asked rescue operators for favours and assistance in rescue of their family or property. Although few, such requests were sometimes given priority over more urgent matters. This type of favouritism could have eroded the fragile rescue structures in place (Interview with cantonal minister, Zenica, 27 July 2016).

### *Crisis Response in the City of Doboj*

The city of Doboj is the largest of all the urban centres flooded in 2014. It experienced extensive flooding from the Bosna River in the 1960s, after which a large embankment was constructed and flood preparedness was introduced. However, little has since been done to enhance the flood-control infrastructure, while civil protection equipment was not modernized following the 1990s war. Any recent investments in flood preparedness were minimal and no reassessment of flooding plans was carried out in recent years. When the city unexpectedly flooded during the early morning of 15 May, water rapidly flowed into the streets, exposing a complete lack of preparedness. There were no official warnings of oncoming floods. "We used private connections, calling our friends in other municipalities and sharing information while observing water levels ourselves" (Interview with civil protection coordinator, Doboj, 28 June 2016).

Almost all crisis response and rescue institutions immediately stopped functioning. The civil protection department was unable to organize a functional civil protection headquarters, while the fire department was flooded and fully incapacitated. No instructions were given to citizens and there were no announcements over the media – just a few intermittent warning siren bursts. Commuting workers heading into the flooded city were stopped by the police and not allowed to pass. The personnel of a boarding school were forced to make their own ad hoc operational plan on how to deal with flooding:



the ground floor was evacuated and all food was brought to higher ground. Water started coming into the building around half past two on 15 May. We spoke with the children to assure them they would be safe and then made sure that all had a place to sleep and that no one was alone in a room. (Interview with boarding house director, Doboj, 28 June 2016)

After a chaotic first few days, the RS entity government stepped in by declaring a state of emergency and enforcing emergency rule in the city through an appointed crisis headquarters. The RS police and the BiH armed forces attempted to take over rescue and relief. Volunteer rescue units, such as a rafting club from Bihać in FBiH, also engaged in providing assistance. However, when arriving in the city they reportedly encountered almost no coordination on the ground. The volunteers acted autonomously, helping where they saw the need to help in a situation that resembled "a complete breakdown" (telephone Interview with Una Aqua members, Bihać, 15 July 2016). With hindsight, officials emphasized that no public institution and "no service was prepared for such a disaster" (Interviews with civil protection coordinator and boarding house director, both in Doboj, 28 June 2016). Of the 23 deaths caused by the floods in BiH, ten were recorded in Doboj alone; they were mostly the elderly who could not get to high ground in time.

Doboj experienced a breakdown in crisis-management institutions. It is the only location where the legal framework proved a serious issue as it "does not clearly designate responsibilities and allows for higher levels to hijack the system and sideline local institutions" (Interview with civil protection coordinator, Doboj, 28 June 2016). There was poor communication between the city administration and republic government, which are controlled by rival political factions in RS. The main decisions on funding and support come from the republic level, while the municipal level is responsible for most crisis management. Such ambiguity can be extremely problematic and led to a substantial reduction in investment in flood-control infrastructure and civil protection.

Another major issue was interentity coordination as no RS institutions monitored water levels and crisis response in FBiH. During the critical hours of flooding, there was no official communication between Doboj and Maglaj, two neighbouring towns on the same river. Doboj, being the first RS territory on the Bosna River, could not rely on information from the upstream municipalities (all in FBiH) coming through official channels. "There has to be coordination with colleagues in Maglaj, rivers do

not respect entity boundaries" (Interview with civil protection coordinator, Doboj, 28 June 2016). "Information seems to stop at the entity border and there is no coordination between FBiH and RS" (Interview with fire department chief, Šamac, 27 June 2016). In addition, Šamac, being further downstream, should have had timely information on the size and speed of the flood wave but received none through official channels. All in all, there was a strong reliance on informal networks and personal contacts for sharing information.

### *Crisis Response in Šamac Municipality*

Šamac lies at the confluence of the Bosna and Sava rivers. Its flood defences consist of embankments and pumping stations and were planned for a 100-year maximum flood but focused solely on the Sava River where the embankments were not breached.<sup>6</sup> Severe flooding from the Bosna River was not expected. Crisis response was thus only slightly more effective in Šamac due to the prior experience, good coordination with entity institutions and additional time as a downstream municipality. The municipality declared a state of emergency 24 hours ahead of the expected flood wave, allowing for more extensive preventive measures. Civil protection, health services, firefighters and community groups were mobilized, as well as anybody who had a boat. Nonetheless, due to the scale of flooding, even this proved to be far less than was needed as waters of the Bosna River breached embankments. "We never had water flood the town centre. Šamac, located on two rivers became a town submerged by two rivers" (Interview with civil protection coordinator, Šamac, 27 June 2016).

There was good communication with neighbouring municipalities in FBiH, Odžak and Orašje, which sent rescue units. Fire departments from Modriča and Brod in RS and Gradačac in FBiH sent their units upon request from the municipal mayor, as "firefighters know no ethnic or entity boundaries" (Interview with fire department chief, Šamac, 27 June 2016). All this local coordination happened informally, bypassing entity-level institutions. As in other municipalities, the crisis response was initially ad hoc. During the initial 48 hours, mobile and landline communications were down. Communication among responders was possible only by using

<sup>6</sup> Breaches of the Sava embankment in BiH occurred in Prud, Kopanice, and Batkovići-Rača, severely flooding northern BiH, but sparing larger towns.

Croatian mobile networks (Croatia is across the Sava River). Unlike in Doboj and Maglaj, the Šamac civil protection headquarters functioned continuously during the crisis response.

According to the Civil Protection coordinator, the most significant issue in Šamac was the lack of regard for flood preparedness and mitigation from higher government levels, especially regarding training and infrastructure. The system established under socialist Yugoslavia was not updated, or adequately maintained and its practical value to society was minimized. Local respondents emphasized a lack of boots, shovels and boats. Only the fire department had a crisis plan in place and operated accordingly. Flood-control infrastructure is the responsibility of the RS agency for water management but, according to civil protection, some Crucial Elements, such as outlet canals, do not exist. At the same time, as in Maglaj and Doboj, budgetary constraints do not allow the municipality to make large investments of its own. Interestingly enough, the Civil Protection Headquarters staff in Šamac thought they handled the situation well, although realities on the ground and in the media portrayed a different picture (Interviews with the Civil Protection coordinator and Fire Department chief, all in Šamac, 27 June 2016). The mayor of Šamac, who led Civil Protection Headquarters and commanded all crisis response in May 2014, did not run for re-election and his political party lost local elections in 2016 (BiH Electoral Commission, 2016).

### *Postcrisis Assessment and Learning*

The 2014 floods occurred across the Sava river basin and the recurrence interval of a crisis of this magnitude was later estimated at 500 years, even at 1000 years in some locations. Almost all flood-control infrastructure in BiH was designed to withstand a 100-year flood (Agencija Republike Slovenije za okolje, 2014; AVP Sava, 2014b) but it failed to contain such a black swan event (Taleb, 2007). Deficiencies in the institutional design for crisis management were magnified. For political reasons the early warning systems of FBiH and RS were not directly connected. Early warnings put civil protection across BiH, as well as the armed forces, on alert. Yet, during the early days of the floods, once the heavy rains started to fall, the hydrometeorological institutes and water management agencies in FBiH and RS did not give any imminent flood warnings.

Moreover, the warning systems did not anticipate the complex interplay between tributary rivers and the Bosna River, which resulted in the flood wave in Maglaj and Doboj.

Interviewees in all locations stressed that the level of flooding was unprecedented. "There was no scenario that could have prepared us for this" (Interview with utility company crisis coordinator, Šamac, 27 June 2016) and "anything we might have done couldn't have prevented the flooding" (Interview with civil protection coordinator, Šamac, 27 June 2016). Phrases like "out of the ordinary", "higher force" and "tsunami" were used to describe the intensity of flooding as "it was impossible to stop such quantities of water" (Interview with civil protection coordinator, Doboj, 28 June 2016; Interview with cantonal minister, Zenica, 27 July 2016).

Heavy rain also caused massive landslides and powerful mudslides, especially in mountainous areas. This disturbed many minefields left from the 1990s war and unexploded ordnances (predominantly landmines) were moved into populated areas. Local and international landmine-clearance teams responded swiftly (Balta *et al.*, 2015). Critical infrastructure was heavily damaged, especially main roads, rail links, power lines and municipal water supplies. The floods cost 2.04 billion euros, over half from damage (mostly to infrastructure) and the rest in economic losses (private business and agriculture) (Agić, 2014).

Crisis response was delayed due to inadequate risk scenarios, inconsistent communication protocols and deficient information sharing. The complexity of institutional responsibilities and the division of tasks were not viewed as issues in Maglaj and among the Zenica–Doboj canton and in Šamac. "For a common person the system seems complex, and it is. But the procedures are well defined and should be followed" (Interview with cantonal civil protection director, Zenica, 27 July 2016). Nevertheless, procedures are lengthy and informal contacts were often used to speed up responses. In Doboj, political infighting hampered communication and ultimately resulted in a botched crisis response. The RS entity government also decided to forgo cooperation with institutions of the state and FBiH, which exacerbated the situation. Information from FBiH was not shared promptly and the armed forces were deployed to RS with significant delay.

During the crisis, the need for complex multilevel coordination involving multiple BiH institutions was evident. The full complexity of current procedures was evident in the deployment of the BiH armed forces – above

all helicopters used for rescue. The procedure required for deployment follows a protocol with the Ministry of Security regulating how and where they are to be sent. Municipal civil protection headquarters file requests to their superior level (cantonal or regional centres) and further to the entity level. The two-entity civil protection departments combine and forward requests to the state-level Ministry of Security, which decides on deployment. The Minister of Defence and the State Presidency finally authorize armed forces deployment. A high-ranking armed forces officer involved in coordinating rescue stated that there was a lack of staff and trained personnel at the Ministry of Security in 2014, the main coordinating body for interentity and international response and where the 112 Crisis Response Centre is located. To expedite the response, the armed forces sent their own personnel to assist. In addition, the protocol was occasionally amended with the use of informal channels beyond prescribed procedures, mostly during the first days of flooding. The armed forces also decided to act prior to pending approval if necessitated by the crisis situation. After a while, all requests were handled by phone with protocol and signatures following days after, which proved to be most effective. Over 200 requests for deployment were filed during the crisis response (Interview with retired armed forces officer, Sarajevo, 20 June 2016).

The role of the armed forces in crisis response was frequently highlighted, especially as first responders to the crisis and during imminent recovery. This is not a usual role for the armed forces, which are not frequently deployed for civilian tasks. Some politicians even questioned the need for their existence before the 2014 floods. Currently the BiH armed forces are the single state-level institution with real operational capabilities and an operations centre able to monitor the situation on the ground. During the crisis, this real-time information was shared with 112 Crisis Response Centre. With a fortified positive public image and institutional relevance, the armed forces recently made requests for new enhanced equipment, especially vehicles and helicopters, and for more extensive training of soldiers.<sup>7</sup>

As the postcrisis phase is ending, only a few lessons have resulted in measures being implemented. The most significant is a renewed focus on water management and the need for investments in flooding infrastructure. Water-management companies in both entities have started to build new embankments and flood walls. Existing canals and embankments are being

<sup>7</sup> Some soldiers involved in rescue using boats could not swim.

dredged and fortified (Interview with civil protection coordinator, Šamac, 27 June 2016; Interview with cantonal minister, Zenica, 27 July 2016). Damaged river-level monitoring infrastructure has been replaced and the monitoring system significantly expanded, especially in FBiH. New risk assessments that cover more area have been updated and response plans include a broader and more diverse range of actors and units, for example in Grad Doboј (2015), FBiH (2015) and BiH (2015). Risk maps have been updated in both entities or are in the process of being adopted. All this hints at an impact of the 2014 floods on governance in BiH that can be described as fine tuning centred on mitigation (Boin *et al.*, 2008).

Investments at the municipal level, where first responders lacked basic equipment, were much more modest. Civil protection departments and other response units were given much training and many seminars, yet all interviewees stressed a continuing lack of supplies such as boots and shovels and more sophisticated communication hardware.

Real change that focuses on communication, coordination and cooperation regarding flood preparedness and response has not taken place. Evidently lacking in both entities during the 2014 floods was a clear and swift flood warning system for the Bosna river basin. Communication between FBiH and RS institutions is still extremely bad and cooperation on water management is almost nonexistent. Rivers are still, apparently, expected to respect administrative boundaries.

## Crisis Response in Serbia

The 2014 May floods hit approximately one-third of Serbian territory. The flood defence systems collapsed. The river banks and sand dams were breached or damaged in 150 places and over 20 municipalities declared a state of emergency. 57 people died and 32 000 were evacuated while the total cost of the floods is estimated to be 1.45 billion euros (over half in material damage).<sup>8</sup>

<sup>8</sup> More on damages from the floods can be found in the Serbian government's report presented to the National Assembly on 29 May 2014. The report can be found here: [http://www.parlament.gov.rs/upload/archive/files/cir/pdf/akta\\_procedura/2014/2220-14.pdf](http://www.parlament.gov.rs/upload/archive/files/cir/pdf/akta_procedura/2014/2220-14.pdf) (accessed 1 September 2017).



The major disaster took place in the early morning of 16 May, when the town of Obrenovac was flooded by the Kolubara and Tamnava rivers. The town was emptied and entry was forbidden until mid-June. The case of Obrenovac is highlighted not only because it was hit the hardest but also because some of the devastation could have been avoided.

In Serbia, there were clear protection mechanisms that could have enabled institutions to identify the problem, communicate it down to the operative level and act. Yet, this system failed to protect Obrenovac. This chapter looks at the response of Serbian crisis management institutions in May 2014. We argue that their response was inadequate, miscommunicated and belated. Rather than preventing and mitigating possible disaster, the institutions acted only after the flooding occurred and even then not always efficiently.

### *Preparedness and Mitigation*

The National Hydrometeorological Service (NHS) and the Sector for Emergency Situations did their jobs properly: the NHS informed and alerted other institutions and the public and the Sector gave instructions to subordinated bodies to do specific tasks. All this happened between 9–12 May. The real problem seemed to have emerged at the lower levels of crisis-management institutions. Srbijavode and Beogradvode, the two water management agencies, as well as municipals heads and the mayor of Belgrade did not act in a timely manner on these instructions. When they did act, they appeared to have directed their attention to the wrong places.<sup>9</sup>

These warnings were taken seriously by the Sector for Emergency Situations (which is a part of the Ministry of Interior meant to deal with natural disasters). On 12 May, the Sector's head, Predrag Marić, issued a warning with an explicit statement that all municipal crisis headquarters should be on alert and prepare for heavy rainfall that was expected from 13 May onward.<sup>10</sup> The NHS reports for 14 and 15 May were even more

9 Flooding had already happened in April that year, but without large consequences. However, excess water left the ground already saturated, intensifying subsequent flooding.

10 On the same day, Milorad Pješčić, the head of Direction for Waters, gave a similar warning. His explicit appeal to Srbijavode, Vojvodinavode, and Beogradvode was to do everything within their responsibility to launch protection procedures because more than 30 l/m<sup>2</sup> of rainfall was expected in the next few days.

serious and forecast stormy winds that could damage houses and property with heavy rain of 40 l/m<sup>2</sup>.

These were only some of the warnings that should have been taken seriously by everyone downstream the Kolubara River. There were other warning signs too. The area experienced almost four times the average amount of rainfall in May. In Valjevo there was over 300 l/m<sup>2</sup> rainfall throughout 15 May, ten times the amount that the water systems were equipped to handle.

The municipality of Koceljeva was heavily flooded by the Tamnava River on 14 May. The downtown area was under water and people had to escape the torrent by boats or move to the upper floors of their houses. In the early morning on 15 May, the mayor of Koceljeva municipality heading the municipal crisis headquarters, decided to breach the local road connecting Šabac and Valjevo, which served as an artificial dam retaining water within the Koceljeva area and thus protecting land outside Koceljeva. The intention was to let the water out of Koceljeva and the level of the Tamnava went down by 2 m after this was done.

On 14 May, the outflow of the Barička reka in Barič, a small settlement between Obrenovac and Belgrade, gained the attention of local administration, which was joined by Siniša Mali, the mayor of Belgrade, and Miroslav Čučković, the municipal head of Obrenovac. Earlier that day, Čučković had declared a state of emergency in Obrenovac and instructed inhabitants to sleep in shifts and to keep themselves informed using the local and national news. Yet Čučković claimed he did not know about what was happening in Valjevo and Koceljeva only one day earlier. He justified this by saying that the Kolubara River was the responsibility of Srbijavode. If the Kolubara swells in the part of the sub-basin under the responsibility of Srbijavode and threatens to overflow further downstream, Čučković claims that Beogradvode would not know anything about it. This is strange because the two institutions are supposed to be coordinated by the National Headquarters, which was in session on 15 May.

This session of the National Headquarters showed that several crisis-management institutions also appeared to have focused on less critical situations, overlooking real threats. Prime Minister Aleksandar Vučić and the head of police Milorad Veljović attended the session. Miloš Milovanović, the head of Beogradvode responsible for water management in the Belgrade area of which Obrenovac is a part, was also present. He informed the Headquarters about power outages in Obrenovac and warned that the city might be

flooded. He also added that electricity should come back soon and that there was no need to worry about Obrenovac. The rest of the session focused on two other towns, Grocka and Lazarevac. These two towns had been flooded before but the subsequent total damage in these two towns was nowhere near to the devastation in Obrenovac the next day.<sup>11</sup>

This session of the Headquarters was crucial in many ways because it planned tasks for the following 24 hours. On 15 May, when everyone's attention should have been focused on Obrenovac, Prime Minister Vučić visited Koceljeva by helicopter for a televised event when supplies of food, water and other equipment were distributed to the flooded population. The Ministers of Defence, Justice and Labour also visited the flooded areas around Koceljeva. Yet, the risk of flooding Koceljeva was already subsiding after the Šabac–Valjevo Road was deliberately breached.

By 15 May, everyone must have known that huge amounts of water were flowing towards Obrenovac as information was there. Did those who had received the information act in a timely and coordinated manner and in the right place? This is where professionals from Srbijavode and Beogradvode were supposed to step in. "When the surface area of the river and the amount of rainfall is known, one only has to calculate the amount of water that is supposed to flow through the riverbeds of the Kolubara and Tamnava," claims Slavoljub Dragičević (Interview, Belgrade, 19 July 2016). If nobody in the two companies did this kind of analysis after 9 May, this would only mean that they did not expect any flooding, or that nobody was qualified to do it. Or both.

### *Crisis Response to the Flooding of Obrenovac and the Lack of Responsibility*

On the afternoon of 15 May, Miroslav Čučković and his aides went to Poljane to join a televised event with the President of Serbia, Tomislav Nikolić, who was visiting the area. Earlier that day Čučković ordered the evacuation of Poljane and three nearby villages (CINS, 2014). Once again, the focus was on settlements where flooding risk had already been significantly reduced.

11 The first 5 minutes of footage from the session's opening can be found online (MUP Republike Srbije, 2014).

A few hours after those events, the flood crests of the Tamnava and Kolubara rivers joined and flowed into the city of Obrenovac. On 16 May at 5 a.m., torrents from the Kolubara reached downtown Obrenovac. The first warning siren was sounded only 20 minutes later by Čučković himself, who was, in his own words, running away from the water torrent. At 6 a.m., the water level rose above 2 m in some parts of Obrenovac. Yet, at the same time, Siniša Mali, the mayor of Belgrade, addressed the inhabitants of Obrenovac, telling them "not to leave their homes unless otherwise instructed by responsible agencies." This warning was posted on the web site of the Belgrade city hall but was subsequently removed. The organized evacuation of the population only began in the afternoon of 16 May when the water level was already over 3 m. Čučković's and Mali's actions show that they did not think Obrenovac would be flooded and destroyed to such a great extent. This is precisely what is meant by a black swan event: an event that no one expected and nobody was aware of until it happened.

In sum, several key actors were supposed to act but did not: Miloš Milovanović (head of Beogradvode), Miroslav Čučković (municipal mayor of Obrenovac), and Siniša Mali (the mayor of Belgrade).<sup>12</sup> Any one of them could have initiated evacuation procedures for Obrenovac at any time. Two (Milovanović and Mali) never gave any public statements regarding their responsibility and role during the floods. In the TV film *The Flood of Irresponsibility* (N1, 2015) only Čučković stated that he did not know what was going on upstream the Kolubara prior to 16 May:

Journalist: You must have known that Obrenovac is in danger when you heard that Koceljeva and Valjevo were flooded?

Čučković: But Valjevo is 80 km away from Obrenovac.

Journalist: Where would this water go?

Čučković: If someone had told me that the amount of water from Valjevo could flood Obrenovac I would have acted. But nobody told me.

Journalist: Who was supposed to tell you that?

Čučković: The institutions that manage waters ... You know, I was sitting at the Belgrade crisis headquarters session the day before the disaster, when the manager of Beogradvode assured me not to worry.

This was surprising because, as Koceljeva flooded, the management of Srbijavode decided to break the Valjevo–Šabac local road on 14–15 May to let the water flow from Koceljeva towards Obrenovac. This deliberate

12 Obrenovac is one of 16 Belgrade municipalities. Officially, the mayor of Belgrade is superior to the Obrenovac municipal mayor.

action was intended to save lives and property of several thousand citizens in Koceljeva. When the water flowed out of Koceljeva it was only a matter of time before it would reach Obrenovac. Goran Puzović, the head of Srbijavode, claimed that everyone downstream from Valjevo knew the water was coming. "We informed them about it" he said. Yet, Čučković claimed he learnt about it only afterwards by reading the press, about 30 days after Obrenovac was flooded.

Srbijavode, which is responsible for the upper stream of the Kolubara, was supposed to inform Beogradvode and the Belgrade Crisis Headquarters, which are responsible for the lower stream of the Kolubara River, that they created a deliberate breach to save Valjevo and Koceljeva. Since the head of Beogradvode and the mayor of Belgrade declined to comment on these issues, for the meantime we do not know if Beogradvode and the Belgrade Crisis Headquarters were lacking information, or if they believed flooding would not happen. It is plausible that Čučković really was not aware of the huge amount of water flowing from Valjevo towards Obrenovac.

On 15 May, as villages and settlements in the wider area of Obrenovac were flooded (Konatice, Poljane, Draževci), Čučković and Mali evacuated the local population, providing accommodation for them in an empty elementary school building in downtown Obrenovac. This part of Obrenovac would be flooded only one day later. It is likely that they *believed* a massive amount of water would never hit Obrenovac.<sup>13</sup> This line of thought was confirmed by Čučković himself. According to the black swan theory, we do not act unless we see a black swan (Taleb, 2007, p. 131). Čučković was the one who sounded the warning siren on 16 May at 5:20 a.m. while running away from the flood. Even as he was visiting and helping the local population of Obrenovac the night before, he believed a large disaster would not happen.

The major institution that was supposed to act was Beogradvode. It was supposed to assess the risk, inform municipal leaders about it and instruct them to act. Yet, it did not do any of this. Communication between the two water management agencies, Srbijavode and Beogradvode might

13 At the same time, according to Čučković's statement, everyone in the Belgrade Crisis Headquarters knew about the relocation of people from the wider area to downtown Obrenovac, and nobody raised concerns. This means that on 15 May nobody at the headquarters expected that water would cause extensive flooding in Obrenovac. The decision makers believed a huge disaster was avoidable.

also have been problematic. In a conversation with one of the officials from Beogradvode, we asked if we could obtain any risk assessment made after 12 May and distributed prior to the 16 May flooding. The official said they were confidential (Interview with Beogradvode official, Belgrade, 6 July 2016).

In March 2016, another flood wave hit the municipalities of Čačak, Novi Pazar, Kraljevo, Arilje, Lučani, Topola, Požega, Bajina Bašta, Ivanjica, Raška, Ljig, Rača, Trstenik, Prijepolje, Kosjerić, Nova Varoš and Čičevac. The damage was nowhere near to what happened in 2014, yet some villages were destroyed. For example, the village of Preljina near the city of Čačak in the central Serbia was flooded by the river Čemernica. On 7 March 2016, Prime Minister Vučić came to visit the village and in a conversation with a farmer worryingly said:

The managers of the public water management companies were assuring me not to worry. They told me Preljina was safe. I am so mad, I will remove all of them. I am fed up. We will help you rebuild the village and erect a protection system to avoid flooding like this in the future.<sup>14</sup>

This time Vučić did not blame nature, but public managers. Yet one year later, by April 2017, he had not dismissed a single general manager of the public water management company. As in 2014, no individual was politically responsible. No lessons were learnt.

## Crisis Response in Croatia

Responses to the crisis in Croatia can be analysed along three different phases of crisis management. The first period includes preparedness, early warning and mitigation (1–17 May). The second period deals with the immediate institutional crisis response (17 May–14 June). The third period is postcrisis recovery, assessment and learning (lasting from 14 June 2014 until today). In the Croatian case, it is possible to identify a crucial point in

14 <http://www.kurir.rs/vesti/drustvo/2165261/vucic-za-kurir-smenicu-sve-odgovorne-za-poplave-direktori-dosta-mi-je-vasih-sranja> (accessed 1 September 2017); <http://www.kurir.rs/vesti/srbija/2163425/vucic-u-preljini-direktori-su-me-uveravali-danece-bitipoplava-najradije-bih-il-sad> (accessed 1 September 2017).

the development of the crisis: the breaches of the River Sava embankment on 17 May 2014 at 2:55 p.m. near the Rajevo Selo village and at 3:12 p.m. near Račinovci village (Kratofil, 2014). These two breaches resulted in the water suddenly draining into populated areas, greatly intensifying the scale of the disaster. The second relevant date is 14 June when the state of emergency ended and the ad hoc dislocated National Headquarters for Protection and Rescue in Županja closed and only recovery operations continued. The following case study will explore the first two phases, as those are the periods that best describe crisis response.

### *Crisis Preparedness: The Water is Coming*

The key issue here is whether the scope of the crisis could have been predicted and prevented on time. Were all prevention and mitigation mechanisms activated and were they adequate for the scope of the crisis? To answer those questions we focus on the actions of three main institutions: the State Meteorological and Hydrological Service (DHMZ); Hrvatske vode – the national company responsible for monitoring and alarming according to the water levels; and local governments. Their coordination with the Državna uprava za zaštitu i spašavanje (DUZS), the National Protection and Rescue Directorate, the central institution responsible for disaster management, is of utmost importance.<sup>15</sup>

Extensive rain increased water levels and prompted local governments in areas at risk to activate measures for flood defence. The flood-defence system is designed bottom up, with initial alerts and first action at the local level, building up to the national level as the threat increases. The first actions at local level had already happened on 11 May when, according to the official reports,<sup>16</sup> the regional office for rescue and protection (the local branch of the DUZS) in Vukovar started to follow weather developments and the situation on the ground. The office contacted Hrvatske vode from which they “obtained assurances that the situation is under control

and that no big problems are to be expected.” (Državna uprava za zaštitu i spašavanje, 2014). As the rain became even stronger after 12 May, Hrvatske vode clearly did not predict the quantities of the water that would fall in next few days. Meanwhile, in some municipalities, flood mitigation already started. Gunja municipality engaged local fire brigades on 13 May, pumping water out of flooded yards into drainage canals. “From the beginning, we engaged everything and everyone in the village, from tractor to bulldozer. We were missing sand for filling the bags, so people were giving their private sand” said Hrvoje Lucić, the mayor of Gunja municipality, one of the poorest municipalities in Croatia, which was flooded a few days later (Interview, Gunja, 18 July 2016).

On 15 May, the Centre for Defence from Floods in Zagreb issued the first warning on rising water levels on the Sava River. The head of Vukovar–Srijem County, Božo Galić, immediately proclaimed a state of natural disaster. This mobilized all resources for flood defence at county level. However, it was not enough. The next day, as water continued to rise, Galić sent a request to DUZS to mobilize military units for defence from floods. Three hundred and ten soldiers were immediately deployed to fill the sand bags and reinforce embankments. Although the command procedure was fully respected (the head of the county sent the request to DUZS and DUZS forwarded it to the Ministry of Defence), this example shows how inefficient the crisis management in Croatia is. Although a limited workforce was mobilized through the civil protection mechanism at the county level, it was obvious that this mechanism was not functioning on the national level. Moreover, the state-level civil protection headquarters became operational only four days later, on 20 May, when the government declared a state of emergency. The army was the first institution to call when manpower was needed. Civil protection was not equipped and did not have a substantial number of people, an issue that still prevails in the Croatian crisis-management system.

An interesting decision-making dynamic can be noticed within official government reports. On 16 May at 12:00 a.m., the day before the critical breach, during an extraordinary session of Vukovar–Srijem County Headquarters, a request was forwarded to Hrvatske vode to predict the further rise of the water levels, at that time measuring 941 cm. Representatives from Hrvatske vode estimated that water would not rise above 1020 cm. However, a few hours later at 5:30 p.m. the water was already at the level

15 For more information on the Croatian crisis protection system see Appendix 2.

16 A detailed DUZS “Report on implementation of the flood defence measures and recovery in Vukovar–Srijem County” was accepted by the Croatian Government in July 2014. The report has integrated reports of each public institution (ministries, local government etc.) involved in crisis management apart from Hrvatske vode. The report is an excellent overview of many activities implemented by different institutions. It also describes decision-making processes at the local government level.



of 1036 cm. This rapid rise came as a surprise for experts at the water management agency, Hrvatske vode.

On the same day, at 7:00 p.m., Hrvatske vode declared the highest level of alert and, at 8:00 p.m., Galić declared a state of emergency for the villages under direct threat of flooding. Everyone was on high alert, including the Red Cross, the mountain rescue service, ambulances and firefighters. The tension between Hrvatske vode and Vukovar–Srijem County Headquarters was visible next day during the second extraordinary session of the County Headquarters. One conclusion from the meeting was that Galić, the head of the County, should independently estimate the situation and decide on further measures, due to the lack of written response from Hrvatske vode (Županijski stožer za zaštitu i spašavanje Vukovarsko–srijemske županije, 2014). After that, at 12:28 p.m., the head of the county signed the decision to prepare for evacuation of citizens. The first breach of the embankment happened two-and-a-half hours later.

#### *Crisis Response: Dealing with the Catastrophe*

“If the embankment wasn’t breached we would have managed to defend ourselves from this catastrophic flood” claims Zoran Čavlović from Hrvatske vode (Interview, Zagreb, 20 July 2016), like most other people interviewed for this chapter.<sup>17</sup> However, the breach resulted in the real catastrophe. The day before the breach of the embankment, the DUZS suggested evacuating citizens, not because of a possible breach but because of “the possibility of water overflowing the embankment” said Jadran Perinić, director of DUZS (Interview, Zagreb, 26 July 2016). “There were no indications on the embankment that would suggest that a breach could happen. Half an hour before the breach, our team was there and nothing suspicious was detected,” claims Čavlović (Interview, Zagreb, 20 July 2016).

Moreover, the embankment near Rajevo selo had recently been reconstructed and its breach triggered serious public accusations leading to a blame game. Local rumours were spread across the media about how the reconstruction was badly done, also mentioning possible theft of construction material. Hrvatske vode were directly blamed by a majority of the

17 The same argument was used in conversation with Jadran Perinić, the DUZS director, and Robert Mikac, the commander of civil protection of Republic of Croatia (Interview, Zagreb, 14 July 2016).

public.<sup>18</sup> However, there was no evidence behind such rumours. The Ministry of Agriculture opened an investigation into the reasons for the breach, concluding that great water pressure caused erosive channels in the body and base of the embankment, which subsequently led to its collapse.<sup>19</sup>

With the embankment breached, the evacuation of the citizens started immediately. The initial evacuation was conducted by the military, the police, the mountain rescue service and civil protection personnel but also local fishermen’s associations. The number of military personnel soon increased to 1209. Some citizens resisted evacuation, which made the situation more complicated. The coordination of activities became increasingly complex as additional public services became involved in rescue operations. In the following days, around 13 000 people and around 9000 animals were evacuated (Državna uprava za zaštitu i spašavanje, 2014) and a second line of flood defence was built because the water level was still increasing.

During that period, the head commander of the rescue action was still the head of Vukovar–Srijem County, Galić. It would take the government three more days to declare a state of catastrophe in Vukovar–Srijem County and take over command of the crisis. “Everyone was trying to do their best but there were moments when there was chaos all around. We had never experienced such a situation. This only settled down when the national government took over command, particularly the military and DUZS” said Lucić (Interview, Gunja, 18 July 2016). At the peak of the crisis there was a broad mobilization of personnel, even outside the official crisis-management system. This flexibility, which is a consequence of a lack of capacity rather than deliberate crisis management planning, was important in saving lives.<sup>20</sup> Unfortunately, two lives were lost to the floods in Croatia.

On 21 May, the National Headquarters for Rescue and Protection was moved to Županja (near the flooded areas) and included several stakeholders: the Ministry of Agriculture (Hrvatske vode, Hrvatske šume), the Ministry of Interior and the Ministry of Social Policies. The armed forces, Ministry of Health, Ministry of European and Foreign Affairs, Croatian Firefighting Community, Mountain Rescue Service, Red Cross, Hrvatske

18 See, for example, a local news-portal, Vinkovci.com.hr (2014).

19 See, for example, Tportal.hr (2014).

20 An important role in the rescue operation was also played by local divers who voluntarily joined the rescue teams.

ceste and Croatian Mine Action Centre were also involved. Depending on the situation, representatives of other state institutions joined the headquarters, including the Ministry of Culture, the Ministry of Construction and Spatial Planning and others. From this point on, all national resources were mobilized to deal with the crisis. The headquarters was led by Perinić, the Director of DUZS, and Nikola Gaće, the head of the Headquarters. Meetings were held daily, dealing with the challenges that arose from hour to hour. It was important that the Headquarters were located near the flooded area, both for the local population as well as for the efficiency of operations. The Headquarters held daily morning sessions, when tasks were given to the units on the ground. There were a lot of challenges: to continue evacuation of people and animals, to deal with people resisting evacuation, to ensure alternative accommodation for evacuated people, to protect the evacuated areas, to coordinate humanitarian aid and to defend the county from further flooding. Later, when waters started to recede, coordination also included health services, disinfection, cleaning of flooded areas and mobilization of people for cleaning, coordinating volunteers, engaging veterinary service, and so forth.

Coordination of all activities was good, with only minor interpersonal or interinstitutional conflicts. Interpersonal conflicts arose due to "different temperament of people, which become more visible during times of crisis and in tense situations" claims Robert Mikac, commander of civil protection of Republic of Croatia (Interview, Zagreb, 14 July 2016). "Sometimes the (non)efficiency is more about the personality of those running the institutions, then about institutional design" he added. But Mikac also noticed a better need for operational coordination on the ground:

One thing is to make decisions on political and strategic level during morning Headquarters meetings and another is to implement those decisions on the ground. There were situations when it was difficult to command the army or police from a civil protection perspective. Moreover, this is legally not possible. They have their own line of command and a collaborative culture needs to be developed through a new crisis management system. In addition, there were instances when military was much more efficient than the civil brigades, for example in cleaning former flooded area. This produced some tension about efficiency of different stakeholders. (Interview, Zagreb, 14 July 2016)

On June 14, the state of emergency was over. That was also the last day the National Headquarters for Protection and Rescue in Županja was operating. By that date, the water had receded from most flooded areas, which

were cleaned and disinfected. People started to return to their homes. However, most houses were destroyed and uninhabitable, so many people remained in temporary shelters. The reconstruction phase, of both infrastructure and crisis management institutions, started.

### *Learning from the Crisis*

After crises, the question of *what could have been done better* inevitably arises. Institutional and personal self-reflection are important first steps towards improvement. This partially happened in the Croatian case. Although the blame game was visible between crisis management institutions during and after the crisis, they developed recommendations on how to improve their work afterwards. A set of recommendations was listed in the *Report on Implementation of the Measures for Defence from Floods and Recovery in Vukovar–Srijem County*.

The crisis has shown that a number of state and local government institutions did not plan adequate resources for crisis management. This was particularly visible at the local level as the floods affected some of the poorest municipalities in the country. These municipalities have limited budgets and are struggling to cover regular daily expenses. It is unrealistic to expect that they can plan a budget for dealing with crises. The DUZS therefore proposed the establishment of a national solidarity fund for crisis situations. Instead of putting a significant financial burden on every municipality in the country to reserve part of its budget for potential crisis situations, each municipality was to contribute smaller amounts to the fund.

The crisis also exposed the irregular working hours of different state institutions during the crisis. Criticism was also directed towards the lack of efficient early warning mechanisms and particularly the need to expand weather and water-level forecasting services. Obstacles were also encountered in providing alternative accommodation for flood refugees. The DUZS recommended developing a plan and lists of temporary accommodation for rescued people, as well as long-stay accommodation in extreme crisis situations. Another recommendation to state institutions (particularly ministries) was to establish a "crisis headquarters" to enable better communication between institutions. Finally, the crisis pointed to the need

for bigger civil protection units and for more awareness raising and education within state and local government institutions on crisis management.

Some of these recommendations were integrated into the new Civil Protection System Act that was adopted one year after the flood. This Act was not only the result of postflood debates on reforming the crisis management system but also of a long-term reconstruction process of crisis management in Croatia. The Act reforms civil protection, improves coordination within the system, reduces the number of command and coordination bodies, better defines responsibilities within the system, empowers local civil protection units and more. The Act also introduces more balance among different key stakeholders within the system such as fire brigades and the National Mountain Rescue Service. All stakeholders already have a strongly developed identity and internal system of work and the new Act introduces better coordination while respecting their differences as a part of the broader civil protection system.

The Act puts less financial and planning burden on municipalities. Previously, each municipality in Croatia had to develop its own rescue and protection plans and estimates of potential risks. The new Act enables neighbouring municipalities to make joint plans while recognizing that not all municipalities face the same level of threat. Finally, as a direct lesson learned from the floods, a new function of *coordinator on the location* has been introduced within the civil protection system. While command responsibilities remained with local or national government representatives (depending on the scope of the crisis), the coordinator *on the location* should solve problems of lacking implementation and coordination among different institutional command structures. Coordination on the ground was a weak point during the floods, which this new function determined through the Act seeks to address. The learning and adaptation resulting from the floods was more consequential in Croatia than in neighbouring countries. In addition to fine tuning in certain areas, major policy reforms were proposed and implemented (Boin *et al.*, 2008). This is primarily seen through the new Civil Protection System Act, which redefines responsibilities, communication, cooperation and coordination within the crisis-management system and introduces a new function of the coordinator on the location as the focal point for rescue efforts.

## Conclusions

The 2014 floods in BiH, Croatia and Serbia were a transboundary crisis that would best have been addressed with a holistic regional approach including preparedness, warning, mitigation and rescue. Yet, it was dealt with at the national, or even subnational level with little coordination or communication between different response institutions. The result was a patchwork of institutional responses to crisis, each with their own deficiencies and faults. Some performed better than the others, but none did so without jeopardizing human lives and property.

We can identify three common issues prevalent among all three countries. The first is a prevalent lack of effective communication between response actors and institutions through formal channels. Institutions in all countries faced serious issues in communication. It may even be said that many lives in Obrenovac and Doboj were lost due to poor communication and coordination of rescue institutions. Water management companies in Serbia did not communicate crucial information clearly or at all, communication and information exchange between FBiH and RS institutions in BiH was almost nonexistent and information sharing in Croatia was severely delayed. Second, a lack of substantial investment in the water management system and civil protection systems was conspicuous. The reasons for this issue differ from country to country. Croatia experienced ideological infighting that weakened the system. In Serbia there was a genuine disregard for the public good and in BiH there was a lack of purpose and strategy for guided investment. As a result, the military had to step in and take over a substantial share of rescue operations in all three countries. A third common issue is the absence of responsibility after the floods. In each country, local and national (or entity) governments blamed each other for not acting on time while crisis management institutions deflected any criticism of their performance, often stating deficient legal provisions and financial means. No high officials lost their job because of bad performance. In addition to these three, all countries experienced a black swan event for which there was no possibility to prepare adequately.

At the same time, there were stark differences between the countries, partially through different responses to the black swan event. For example, the blame game was very evident in Serbia, but less so in Croatia and in BiH. Most evident is the difference in institutional learning and adaptation.



Most learning and change was seen in Croatia with the adaptation of a new Act regulating civil protection services and renewed investment in flood defence. In BiH there was limited learning that focused on an operational level with more investment in flooding infrastructure, updated risk assessments and maps and enhanced early warning systems. Yet, the crucial concern of lacking communication between different administrative levels and institutions, especially between the two entities, was not addressed. There was only very limited learning in Serbia where the floods were treated like any other policy issue and no changes to the crisis management system were introduced. While it is possible to speak of policy reform as a crisis response in Croatia, Bosnia responded with fine tuning, while learning was much more limited in Serbia.

Studying societal responses to crises, Boin *et al.* (2008, pp. 7–8) differentiate between analysis of learning at the operational and strategic levels. At the operational level, including rescue services, middle-level public officials and citizens, there was substantial learning from the floods. People are more aware of the dangers that rivers can pose if not managed correctly. Most individuals on the ground involved in flood management (especially in the municipalities) know each other and maintain personal contacts, so informal communication and coordination arises as an option. Informality is used as a coping strategy (Reh, 2012), especially when state institutions are not communicating with the urgency required or when local governments are underfinanced and flood mitigation and preparedness is lacking.

At the strategic level of political and administrative officeholders, the floods did not produce any new insights on the political and social ramifications of the crisis. Instead, discussion often entrenched existing power structures and polarized struggles among rival political factions. The institutional complexity of water and flood management is marked by administrative boundaries that do not consider the hydrological configuration of the territory and by lacking or insufficient coordination among institutions. This provides a fertile ground for natural disasters to take a big toll. Errors and miscommunication are bound to happen during crisis, precisely when it is most damaging. During the 2014 floods this became evident in all countries. The floods did not produce any profound changes but confirmed the existing bad governance in Southeast Europe.

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